

**005SH—Shelby clay loam, 5 to 10 percent slopes****Map Unit Composition**

Shelby: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Shelby**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-loamy drift

*Slope:* 5 to 10 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.0 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 12 inches; clay loam

H2—12 to 47 inches; clay loam

H3—47 to 60 inches; clay loam

**Minor Components****Sharpsburg**

*Composition:* About 5 percent

*Slope:* 4 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

**Kennebec**

*Composition:* About 5 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-37)

**Pawnee**

*Phase:* Eroded

*Composition:* About 5 percent

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

**005SM—Shelby clay loam, 7 to 15 percent slopes, eroded****Map Unit Composition**

Shelby: 88 percent  
 Minor components: 12 percent

**Component Descriptions****Shelby**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-loamy drift

*Slope:* 7 to 15 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.0 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 12 inches; clay loam

H2—12 to 47 inches; clay loam

H3—47 to 60 inches; clay loam

**Minor Components****Sharpsburg**

*Composition:* About 3 percent

*Slope:* 4 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

**Kennebec**

*Composition:* About 3 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-37)

**Steinauer**

*Composition:* About 3 percent

*Slope:* 12 to 25 percent

*Drainage class:* Well drained

*Ecological site:* Limy Upland (pe30-37)

**Martin**

*Composition:* About 3 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe35-42)

## **005VS—Vinland silty clay loam, 4 to 15 percent slopes**

### **Map Unit Composition**

Vinland: 85 percent  
 Minor components: 15 percent

### **Component Descriptions**

#### **Vinland**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Sandy and silty residuum weathered from shale

*Slope:* 4 to 15 percent

*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Low (About 3.9 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 6e

#### *Typical Profile:*

A—0 to 8 inches; silty clay loam

Bw—8 to 12 inches; silty clay loam

C—12 to 19 inches; channery silty clay loam

Cr—19 to 23 inches; weathered bedrock

#### **Minor Components**

##### **Rock outcrop**

*Composition:* About 9 percent

*Slope:* 15 to 40 percent

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

##### **Martin**

*Composition:* About 3 percent

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe35-42)

#### **Pawnee**

*Composition:* About 3 percent

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

## **013WN—Wymore silty clay loam, 5 to 9 percent slopes**

### **Map Unit Composition**

Wymore: 82 percent  
 Minor components: 18 percent

### **Component Descriptions**

#### **Wymore**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Hillslope position:* Backslope

*Parent material:* Loess

*Slope:* 5 to 9 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 10.2 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 14 inches

*Runoff class:* Very high

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 4e

#### *Typical Profile:*

Ap—0 to 10 inches; silty clay loam

Bt1—10 to 18 inches; silty clay

Bt2—18 to 32 inches; silty clay

BC—32 to 43 inches; silty clay loam

C—43 to 80 inches; silty clay loam

#### **Minor Components**

##### **Pawnee**

*Composition:* About 8 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 6 to 9 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

##### **Mayberry**

*Composition:* About 7 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 2 to 6 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

#### **Kennebec**

*Composition:* About 3 percent

*Slope:* 0 to 2 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Lowland (pe30-37)

### **045VM—Vinland-Martin complex, 7 to 15 percent slopes**

#### **Map Unit Composition**

Vinland: 40 percent

Martin: 25 percent

Minor components: 35 percent

#### **Component Descriptions**

##### **Vinland**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Sandy and silty residuum weathered from shale

*Slope:* 7 to 15 percent

*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Low (About 3.5 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Upland (pe35-42)

*Land capability (nonirrigated):* 6e

##### *Typical Profile:*

H1—0 to 7 inches; silty clay loam

H2—7 to 17 inches; silty clay loam

Cr—17 to 21 inches; weathered bedrock

##### **Martin**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey colluvium derived from limestone and shale over silty and

clayey residuum weathered from limestone and shale

*Slope:* 7 to 11 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 9.7 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 22 to 26 inches

*Runoff class:* Very high

*Ecological site:* Loamy Upland (pe35-42)

*Land capability (nonirrigated):* 4e

##### *Typical Profile:*

H1—0 to 9 inches; silty clay loam

H2—9 to 14 inches; silty clay loam

H3—14 to 60 inches; silty clay

#### **Minor Components**

##### **Unnamed Soil**

*Composition:* About 20 percent

*Slope:* 3 to 7 percent

*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Loamy Upland (pe35-42)

##### **Sibleyville**

*Composition:* About 8 percent

*Slope:* 7 to 15 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe35-42)

##### **Sogn**

*Composition:* About 7 percent

*Slope:* 7 to 15 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Shallow Limy (pe30-37)

### **085MC—Martin-Vinland silty clay loams, 5 to 10 percent slopes**

#### **Map Unit Composition**

Martin: 48 percent

Vinland: 40 percent

Minor components: 12 percent

## Component Descriptions

### Martin

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey colluvium derived from limestone and shale over silty and

clayey residuum weathered from limestone and shale

*Slope:* 5 to 10 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 9.9 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 22 to 26 inches

*Runoff class:* Very high

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 4e

#### Typical Profile:

H1—0 to 11 inches; silty clay loam

H2—11 to 17 inches; silty clay loam

H3—17 to 60 inches; silty clay

### Vinland

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Sandy and silty residuum weathered from shale

*Slope:* 5 to 10 percent

*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Low (About 3.7 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Upland (pe30-37)

#### Typical Profile:

H1—0 to 11 inches; silty clay loam

H2—11 to 17 inches; silty clay loam

Cr—17 to 21 inches; weathered bedrock

### Minor Components

#### Sogn

*Composition:* About 3 percent

*Slope:* 5 to 15 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Shallow Limy (pe30-37)

### Pawnee

*Composition:* About 3 percent

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

### Clime

*Composition:* About 3 percent

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Ecological site:* Limy Upland (pe30-37)

### Rock outcrop

*Composition:* About 3 percent

*Slope:* 20 to 40 percent

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

## 085WB—Wymore silty clay loam, 1 to 3 percent slopes

### Map Unit Composition

Wymore: 85 percent

Minor components: 15 percent

### Component Descriptions

#### Wymore

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey loess

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 10.2 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 14 inches

*Runoff class:* High

*Ecological site:* Clay Upland (pe30-37)

*Land capability (irrigated):* 2e

*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 10 inches; silty clay loam  
 H2—10 to 32 inches; silty clay  
 H3—32 to 60 inches; silty clay loam

**Minor Components****Shelby**

*Composition:* About 5 percent  
*Slope:* 4 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 5 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

**Martin**

*Composition:* About 5 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**177SM—Shelby clay loam, 3 to 8 percent slopes****Map Unit Composition**

Shelby: 88 percent  
 Minor components: 12 percent

**Component Descriptions****Shelby**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-loamy drift

*Slope:* 3 to 8 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.0 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 17 inches; clay loam  
 H2—17 to 44 inches; clay loam  
 H3—44 to 60 inches; clay loam

**Minor Components****Morrill**

*Composition:* About 3 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Elmont**

*Composition:* About 3 percent  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe35-42)

**Martin**

*Composition:* About 3 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe35-42)

**Pawnee**

*Composition:* About 3 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

**601GT—Grundy silty clay loam, 1 to 3 percent slopes****Map Unit Composition**

Grundy: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Grundy**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey loess

*Slope:* 1 to 3 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 9.3 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 20 inches

*Runoff class:* High  
*Ecological site:* Clay Upland (pe30-37)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 11 inches; silty clay loam  
 H2—11 to 15 inches; silty clay loam  
 H3—15 to 43 inches; silty clay  
 H4—43 to 65 inches; silty clay loam

**Minor Components**

**Sharpsburg**

*Composition:* About 10 percent  
*Slope:* 1 to 4 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**601SH—Shelby loam, 4 to 8 percent slopes**

**Map Unit Composition**

Shelby: 80 percent  
 Minor components: 20 percent

**Component Descriptions**

**Shelby**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-loamy till

*Slope:* 4 to 8 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.3 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 7 inches; loam  
 H2—7 to 40 inches; clay loam  
 H3—40 to 75 inches; clay loam

**Minor Components**

**Oska**

*Composition:* About 5 percent

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sharpsburg**

*Composition:* About 5 percent  
*Slope:* 4 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe35-37)

**Elmont**

*Composition:* About 5 percent  
*Slope:* 7 to 12 percent  
*Depth to restrictive feature:* More than 60 inches to bedrock  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Phase:* Eroded  
*Composition:* About 5 percent  
*Slope:* 4 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

**601SM—Shelby loam, 8 to 12 percent slopes**

**Map Unit Composition**

Shelby: 90 percent  
 Minor components: 10 percent

**Component Descriptions**

**Shelby**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-loamy till

*Slope:* 8 to 12 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.2 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 5 inches; loam  
 H2—5 to 40 inches; clay loam  
 H3—40 to 75 inches; clay loam

**Minor Components****Pawnee**

*Composition:* About 5 percent  
*Slope:* 4 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

**Elmont**

*Composition:* About 5 percent  
*Slope:* 7 to 12 percent  
*Depth to restrictive feature:* More than 60 inches to bedrock  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**AED—Arents, Earthen Dam****Be—Bismarckgrove-Kimo complex, 1 to 3 percent slopes, rarely flooded**

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

**Map Unit Composition**

Bismarckgrove: 60 percent  
 Kimo: 20 percent  
 Minor components: 20 percent

**Component Descriptions****Bismarckgrove**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.1 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

Ap—0 to 7 inches; silt loam  
 A—7 to 20 inches; silty clay loam  
 Bw—20 to 29 inches; silty clay loam  
 C—29 to 58 inches; silt loam  
 2C—58 to 80 inches; loamy fine sand

**Kimo**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Meander scar on river valley

*Parent material:* Clayey alluvium over loamy alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Very high (About 15.0 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* About 24 to 72 inches

*Runoff class:* High

*Ecological site:* Clay Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

Ap—0 to 7 inches; silty clay loam  
 A1—7 to 15 inches; silty clay  
 A2—15 to 23 inches; silty clay  
 AC—23 to 26 inches; silty clay  
 2C1—26 to 60 inches; silt loam  
 2C2—41 to 80 inches; silt loam

*Component note:* The Kimo series is very deep and somewhat poorly drained.

**Minor Components****Eudora**

*Composition:* About 15 percent

*Slope:* 0 to 3 percent

*Drainage class:* Well drained

**Bourbonais**

*Composition:* About 3 percent

*Slope:* 0 to 3 percent

*Drainage class:* Somewhat excessively drained

*Ecological site:* Clay Lowland (pe30-37)

**Stonehouse**

*Composition:* About 2 percent

*Slope:* 0 to 3 percent

*Drainage class:* Excessively drained

*General Considerations:* Most areas of these soils are cultivated. These soils are suited to all major crops commonly grown in the valley. These soils have good potential for hay or tame grasses. Flooding limits the suitability of these soils for many engineering uses. The land capability classification is 1lw.

## **Bp—Belvue silt loam, Escarpment, 2 to 12 percent slopes**

*Mapunit Information:* The map unit does not meet the criteria for prime farmland.

### **Map Unit Composition**

Belvue: 75 percent  
Minor components: 25 percent

### **Component Descriptions**

#### **Belvue**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Coarse-silty alluvium

*Slope:* 2 to 12 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.2 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Land capability (irrigated):* 2w

*Land capability (nonirrigated):* 6e

#### *Typical Profile:*

Ap—0 to 6 inches; silt loam  
C1—6 to 20 inches; silt loam  
C2—20 to 28 inches; silt loam  
C3—28 to 42 inches; silt loam  
C4—42 to 57 inches; silt loam  
2C1—57 to 63 inches; sand  
2C2—63 to 80 inches; sand

#### **Minor Components**

##### **Kimo, Overwash**

*Composition:* About 20 percent

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Clay Lowland (pe30-37)

#### **Bourbonais**

*Composition:* About 5 percent

*Slope:* 0 to 3 percent

*Drainage class:* Somewhat excessively drained

*Ecological site:* Clay Lowland (pe30-37)

*General Considerations:* Most areas of this soil are cultivated. This soil is poorly suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding and slopes limits the suitability of this soil for many engineering uses. The land capability classification is VIe.

## **Bx—Bourbonais-Bismarckgrove complex, 0 to 2 percent slopes, rarely flooded**

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

### **Map Unit Composition**

Bourbonais: 60 percent  
Bismarckgrove: 20 percent  
Minor components: 20 percent

### **Component Descriptions**

#### **Bourbonais**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Coarse-silty alluvium over sandy alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Moderate (About 8.5 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* About 24 to 72 inches

*Runoff class:* Low

*Ecological site:* Clay Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

#### *Typical Profile:*

Ap—0 to 7 inches; silt loam  
A—7 to 12 inches; silt loam  
C—12 to 33 inches; silt loam  
2C1—33 to 57 inches; sand, fine sand



2C2—57 to 80 inches; sand

*Component note:* The Bourbonais series was formerly mapped as an unnamed inclusion in the Sarpy map unit in the Leavenworth County Soil Survey. The Bourbonais soils are very deep and somewhat excessively drained. Shrink-swell potential is low. In some areas the soil lacks a dark surface. In some places the dark surface is less than 10 inches thick. This soil is subject to occasional flooding. Also included are some areas that have slopes from 4 to 6 percent.

### **Bismarckgrove**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.1 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

#### *Typical Profile:*

Ap—0 to 7 inches; silt loam

A—7 to 20 inches; silty clay loam

Bw—20 to 29 inches; silty clay loam

C—29 to 58 inches; silt loam

2C—58 to 80 inches; loamy fine sand

*Component note:* The Bismarckgrove series was formerly mapped as Kahola in Riley County; Kimo in Jefferson County; Muir in the Pottawatomie, Riley, and Shawnee County Soil Surveys. The Bismarckgrove series is very deep, moderately well drained, moderately permeable and are derived from silty alluvium. The soils occur on floodplain levels below the Bourbonais soils and above the Kimo soils.

### **Minor Components**

#### **Eudora**

*Composition:* About 15 percent

*Slope:* 0 to 3 percent

*Drainage class:* Well drained

*Ecological site:* Clay Lowland (pe30-37)

### **Stonehouse**

*Composition:* About 5 percent

*Slope:* 0 to 3 percent

*Drainage class:* Excessively drained

*Ecological site:* Clay Lowland (pe30-37)

*General Considerations:* Most areas of these soils are cultivated. These soils are suited to all major crops commonly grown in the valley. These soils have good potential for hay or tame grasses. Flooding limits the suitability of these soils for many engineering uses. The land capability classification is 1lw.

## **By—Bourbonais-Bismarckgrove complex, 0 to 2 percent slopes, occasionally flooded**

*Mapunit Information:* The map unit does not meet the criteria for prime farmland.

### **Map Unit Composition**

Bourbonais: 45 percent

Bismarckgrove: 30 percent

Minor components: 25 percent

### **Component Descriptions**

#### **Bourbonais**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Coarse-silty over sandy alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Moderate (About 8.5 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 24 to 72 inches

*Runoff class:* Low

*Ecological site:* Clay Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

#### *Typical Profile:*

Ap—0 to 7 inches; silt loam

A—7 to 12 inches; silt loam

C—12 to 33 inches; silt loam

2C1—33 to 57 inches; fine sand, sand

2C2—57 to 80 inches; sand

*Component note:* The Bourbonais series was formerly mapped as an unnamed inclusion in the Sarpy map unit in the Leavenworth County Soil Survey. The Bourbonais soils are very deep and somewhat excessively drained. Shrink-swell potential is low. In some areas the soil lacks a dark surface. In some places the dark surface is less than 10 inches thick. This soil is subject to occasional flooding. Also included are some areas that have slopes from 4 to 6 percent.

### **Bismarckgrove**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* High (About 10.4 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

### *Typical Profile:*

Ap—0 to 7 inches; silty clay loam

A—7 to 33 inches; silty clay loam

Bw—33 to 52 inches; silt loam

2C—52 to 80 inches; loamy very fine sand

*Component note:* The Bismarckgrove series was formerly mapped as Kahola in Riley County; Kimo in Jefferson County; Muir in the Pottawatomie, Riley, and Shawnee County Soil Surveys. The Bismarckgrove series is very deep, moderately well drained, moderately permeable and are derived from silty alluvium. Shrink-swell potential is moderate. The soils occur on floodplain levels below the Bourbonais soils and above the Kimo soils.

### **Minor Components**

#### **Eudora**

*Composition:* About 15 percent

*Slope:* 0 to 3 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-37)

#### **Stonehouse**

*Composition:* About 10 percent

*Slope:* 0 to 3 percent

*Drainage class:* Excessively drained

*Ecological site:* Sandy Lowland (pe30-37)

*General Considerations:* Most areas of this soil are cultivated. These soils are suited to all major crops commonly grown in the valley. The Bourbonais soil has potential for hay or tame grasses. The Bourbonais soil will tend get droughthy in late summer if not irrigated. The Bismarckgrove soil has good potential for most crops grown in the valley. Flooding limits the suitability of these soils for many engineering uses. The land capability classification is 1lw.

## **Eb—Eudora-Bismarckgrove silt loams, 0 to 3 percent slopes, occasionally flooded**

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

### **Map Unit Composition**

Eudora: 55 percent

Bismarckgrove: 25 percent

Minor components: 20 percent

### **Component Descriptions**

#### **Eudora**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Coarse-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.0 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Land capability (nonirrigated):* 2w

### *Typical Profile:*

Ap—0 to 6 inches; silt loam

A—6 to 12 inches; silt loam

AC—12 to 18 inches; silt loam

C1—18 to 25 inches; silt loam

C2—25 to 44 inches; silt loam

C3—44 to 60 inches; silt loam

### **Bismarckgrove**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* High (About 10.4 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

#### *Typical Profile:*

Ap—0 to 7 inches; silt loam

A—7 to 33 inches; silty clay loam

Bw—33 to 52 inches; silt loam

2C—52 to 80 inches; loamy fine sand

*Component note:* The Bismarckgrove series was formerly mapped as Muir in the Pottawatomie and Shawnee County Soil Surveys. The Bismarckgrove series is very deep and have moderate permeability.

### **Minor Components**

#### **Bourbonais**

*Composition:* About 10 percent

*Slope:* 0 to 3 percent

*Drainage class:* Somewhat excessively drained

*Ecological site:* Clay Lowland (pe30-37)

#### **Kimo**

*Composition:* About 5 percent

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Clay Lowland (pe30-37)

#### **Stonehouse**

*Composition:* About 5 percent

*Slope:* 0 to 3 percent

*Drainage class:* Excessively drained

*General Considerations:* Most areas of these soils are cultivated. These soils are well suited to all major crops commonly grown in the valley. These soils have good potential for hay or tame grasses. Flooding limits the

suitability of these soils for many engineering uses. The land capability classification is 1lw.

### **Ec—Eudora-Bismarckgrove fine sandy loam, 0 to 3 percent slopes, Overwash, occasionally flooded**

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

### **Map Unit Composition**

Eudora: 65 percent

Bismarckgrove: 20 percent

Minor components: 15 percent

### **Component Descriptions**

#### **Eudora**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Coarse-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* High (About 11.9 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

#### *Typical Profile:*

Ap—0 to 6 inches; fine sandy loam

A—6 to 12 inches; silt loam

AC—12 to 18 inches; silt loam

C1—18 to 25 inches; silt loam

C2—25 to 44 inches; silt loam

C3—44 to 60 inches; silt loam

#### **Bismarckgrove**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* High (About 10.4 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

Ap—0 to 7 inches; fine sandy loam

A—7 to 33 inches; silty clay loam

Bw—33 to 52 inches; silt loam

C—52 to 80 inches; loamy very fine sand

*Component note:* The Bismarckgrove series was formerly mapped as Muir in the Pottawatomie and Shawnee County Soil Surveys. The Bismarckgrove series is very deep and have moderate permeability.

### Minor Components

#### Kimo

*Composition:* About 5 percent

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Clay Lowland (pe30-37)

#### Stonehouse

*Composition:* About 5 percent

*Slope:* 0 to 3 percent

*Drainage class:* Excessively drained

#### Bourbonais

*Composition:* About 5 percent

*Slope:* 0 to 3 percent

*Drainage class:* Somewhat excessively drained

*Ecological site:* Clay Lowland (pe30-37)

*General Considerations:* Most areas of these soils are cultivated. These soils are suited to all major crops commonly grown in the valley. These soils have good potential for hay or tame grasses. Flooding limits the suitability of these soils for many engineering uses. The land capability classification is 1lw.

## Ed—Eudora silt loam, 0 to 2 percent slopes, occasionally flooded

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

### Map Unit Composition

Eudora: 90 percent

Minor components: 10 percent

### Component Descriptions

#### Eudora

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Coarse-silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.0 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

Ap—0 to 6 inches; silt loam

A—6 to 12 inches; silt loam

AC—12 to 18 inches; silt loam

C1—18 to 25 inches; silt loam

C2—25 to 44 inches; silt loam

C3—44 to 60 inches; silt loam

### Minor Components

#### Bismarckgrove

*Composition:* About 10 percent

*Slope:* 0 to 2 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Lowland (pe30-37)

*General Considerations:* Most areas of this soil are cultivated. This soil is suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding limits the suitability of this soil for many engineering uses. The land capability classification is 1lw.

## **Eg—Eudora silt loam, 0 to 2 percent slopes, rarely flooded**

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

### **Map Unit Composition**

Eudora: 85 percent  
Minor components: 15 percent

### **Component Descriptions**

#### **Eudora**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Coarse-silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.0 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 1

#### *Typical Profile:*

Ap—0 to 6 inches; silt loam

A—6 to 12 inches; silt loam

AC—12 to 18 inches; silt loam

C1—18 to 25 inches; silt loam

C2—25 to 44 inches; silt loam

C3—44 to 60 inches; silt loam

*Component note:* The Eudora series is very deep and well drained.

### **Minor Components**

#### **Bismarckgrove**

*Composition:* About 10 percent

*Slope:* 0 to 2 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Lowland (pe30-37)

#### **Bourbonais**

*Composition:* About 5 percent

*Slope:* 0 to 2 percent

*Drainage class:* Somewhat excessively drained

*Ecological site:* Clay Lowland (pe30-37)

*General Considerations:* Most areas of this soil are cultivated. This soil is well suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding limits the suitability of this soil for many engineering uses. The land capability classification is I.

## **Fu—Fluvaquents**

*Mapunit Information:* The map unit does not meet the criteria for prime farmland.

### **Map Unit Composition**

Fluvaquents: 95 percent

### **Component Descriptions**

#### **Fluvaquents**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood plain

*Parent material:* Coarse-silty alluvium

*Slope:* 0 to 5 percent

*Drainage class:* Moderately well drained

*Flooding hazard:* Frequent

*Depth to seasonal water saturation:* About 18 to 36 inches

*Land capability (nonirrigated):* 5w

#### *Typical Profile:*

*Component note:* Fluvaquents were originally mapped as Kimo, Paxico, Riverwash, and Sarpy soils. The Fluvaquents map unit occupies the lowest floodplain surface along the valley. This surface is dissected and subject to frequent flooding. The soils are predominantly silty textured, stratified, and range from acid to calcareous. Other soils can be from sandy to clayey. This map unit is typically wooded with small areas of cropland.

*General Considerations:* Most areas of this soil are cultivated. This soil is suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding limits the suitability of this soil for many engineering uses. The land capability classification is IIw.

**Gb—Grundy silty clay loam, 0 to 2 percent slopes****Map Unit Composition**

Grundy: 85 percent  
Minor components: 15 percent

**Component Descriptions****Grundy**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey loess

*Slope:* 0 to 2 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Moderate (About 8.4 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 14 inches

*Runoff class:* High

*Ecological site:* Clay Upland (pe30-37)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

H1—0 to 15 inches; silty clay loam

H2—15 to 55 inches; silty clay

H3—55 to 88 inches; silty clay loam

**Minor Components****Oska**

*Composition:* About 5 percent

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 5 percent

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

**Shelby**

*Composition:* About 5 percent

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

**Gc—Grundy silty clay loam, 2 to 5 percent slopes****Map Unit Composition**

Grundy: 85 percent  
Minor components: 15 percent

**Component Descriptions****Grundy**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey loess

*Slope:* 2 to 5 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Moderate (About 8.4 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 14 inches

*Runoff class:* High

*Ecological site:* Clay Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 15 inches; silty clay loam

H2—15 to 55 inches; silty clay

H3—55 to 88 inches; silty clay loam

**Minor Components****Oska**

*Composition:* About 5 percent

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 5 percent

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

**Shelby**

*Composition:* About 5 percent

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

**GRP—Gravel Pit****Gy—Gymer silt loam, 3 to 7 percent slopes****Map Unit Composition**

Gymer: 85 percent  
Minor components: 15 percent

**Component Descriptions****Gymer**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-silty alluvium

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 11.3 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 3e

**Typical Profile:**

H1—0 to 17 inches; silt loam

H2—17 to 37 inches; silty clay loam

H3—37 to 60 inches; silty clay loam

**Minor Components****Konawa**

*Composition:* About 5 percent

*Slope:* 4 to 10 percent

*Drainage class:* Well drained

*Ecological site:* Savannah (pe30-37)

**Morrill**

*Composition:* About 5 percent

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Composition:* About 5 percent

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

**Hc—Haig silty clay loam, 0 to 2 percent slopes****Map Unit Composition**

Haig: 85 percent  
Minor components: 15 percent

**Component Descriptions****Haig**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey loess

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 10.2 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 2 to 9 inches

*Runoff class:* High

*Ecological site:* Clay Upland (pe30-37)

*Land capability (nonirrigated):* 2w

**Typical Profile:**

H1—0 to 9 inches; silty clay loam

H2—9 to 31 inches; silty clay

H3—31 to 77 inches; silty clay loam

**Minor Components****Martin**

*Composition:* About 5 percent

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 5 percent

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

**Grundy**

*Composition:* About 5 percent

*Slope:* 0 to 2 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Clay Upland (pe30-37)

## **Kb—Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded**

### **Map Unit Composition**

Kennebec: 85 percent  
Minor components: 15 percent

### **Component Descriptions**

#### **Kennebec**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood plain on river valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 13.2 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 40 to 44 inches

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

#### *Typical Profile:*

H1—0 to 42 inches; silt loam

H2—42 to 90 inches; silt loam

### **Minor Components**

#### **Reading**

*Composition:* About 8 percent

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-37)

#### **Wabash**

*Composition:* About 7 percent

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Ecological site:* Clay Lowland (pe30-37)

## **Kc—Kennebec Soils, 0 to 5 percent slopes, channeled**

### **Map Unit Composition**

Kennebec: 85 percent  
Minor components: 15 percent

### **Component Descriptions**

#### **Kennebec**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood plain on river valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 13.2 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Frequent

*Depth to seasonal water saturation:* About 40 to 44 inches

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 5w

#### *Typical Profile:*

H1—0 to 42 inches; silt loam

H2—42 to 90 inches; silt loam

### **Minor Components**

#### **Wabash**

*Composition:* About 4 percent

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Ecological site:* Clay Lowland (pe30-37)

#### **Martin**

*Composition:* About 4 percent

*Slope:* 3 to 6 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

#### **Sogn**

*Composition:* About 4 percent

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Shallow Limy (pe30-37)

#### **Vinland**



*Composition:* About 3 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 10 to 20 inches  
 to bedrock (paralithic)  
*Drainage class:* Somewhat excessively  
 drained  
*Ecological site:* Loamy Upland (pe30-37)

### **Ki—Kimo silty clay loam, 0 to 1 percent slopes, occasionally flooded**

*Mapunit Information:* The map unit does not meet the criteria for prime farmland.

#### **Map Unit Composition**

Kimo: 85 percent  
 Minor components: 15 percent

#### **Component Descriptions**

##### **Kimo**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Clayey alluvium over loamy alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 11.3 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 24 to 72 inches

*Runoff class:* High

*Land capability (nonirrigated):* 2w

##### *Typical Profile:*

Ap—0 to 7 inches; silty clay loam  
 A1—7 to 15 inches; silty clay  
 A2—15 to 23 inches; silty clay loam  
 AC—23 to 27 inches; silty clay loam  
 2C1—27 to 42 inches; silt loam  
 2C2—42 to 60 inches; silt loam

##### **Minor Components**

##### **Bismarckgrove**

*Composition:* About 10 percent

*Slope:* 0 to 3 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Lowland (pe30-37)

##### **Eudora**

*Composition:* About 5 percent  
*Slope:* 0 to 3 percent  
*Drainage class:* Well drained

*General Considerations:* Most areas of this soil are cultivated. This soil is suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding limits the suitability of this soil for many engineering uses. The land capability classification is 1lw.

### **Km—Kimo silty clay loam, 0 to 1 percent slopes, rarely flooded**

*Mapunit Information:* The map unit does not meet the criteria for prime farmland.

#### **Map Unit Composition**

Kimo: 90 percent  
 Minor components: 10 percent

#### **Component Descriptions**

##### **Kimo**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Meander scar on river valley

*Parent material:* Clayey alluvium over loamy alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Very high (About 15.0 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* About 24 to 72 inches

*Runoff class:* High

*Ecological site:* Clay Lowland (pe30-37)

*Land capability (nonirrigated):* 2w

##### *Typical Profile:*

Ap—0 to 7 inches; silty clay loam  
 A1—7 to 15 inches; silty clay  
 A2—15 to 23 inches; silty clay loam  
 AC—23 to 26 inches; silty clay loam  
 2C1—26 to 60 inches; silt loam  
 2C2—41 to 80 inches; silt loam

*Component note:* The Kimo series is very deep and somewhat poorly drained.

##### **Minor Components**

##### **Bismarckgrove**

*Composition:* About 10 percent  
*Slope:* 0 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Lowland (pe30-37)

*General Considerations:* Most areas of this soil are cultivated. This soil is suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding limits the suitability of this soil for many engineering uses. The land capability classification is IIw.

*Ecological site:* Shallow Limy (pe30-37)

#### **Morrill**

*Composition:* About 3 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

#### **Gymer**

*Composition:* About 3 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

### **Kv—Konawa complex, 4 to 10 percent slopes**

#### **Map Unit Composition**

Konawa: 91 percent  
 Minor components: 9 percent

#### **Component Descriptions**

##### **Konawa**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-loamy eolian deposits

*Slope:* 4 to 10 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.57 in/hr)

*Available water capacity:* Moderate (About 7.8 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Savannah (pe30-37)

*Land capability (nonirrigated):* 4e

##### *Typical Profile:*

H1—0 to 13 inches; fine sandy loam  
 H2—13 to 44 inches; sandy clay loam  
 H3—44 to 60 inches; fine sandy loam

#### **Minor Components**

##### **Sogn**

*Composition:* About 3 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained

### **M-W—Miscellaneous Water**

### **Mb—Martin silty clay loam, 1 to 3 percent slopes**

#### **Map Unit Composition**

Martin: 90 percent  
 Minor components: 10 percent

#### **Component Descriptions**

##### **Martin**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey colluvium derived from limestone and shale over silty and

clayey residuum weathered from limestone and shale

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 9.7 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 22 to 26 inches

*Runoff class:* High

*Ecological site:* Loamy Upland (pe35-42)

*Land capability (nonirrigated):* 2e

##### *Typical Profile:*

H1—0 to 9 inches; silty clay loam  
 H2—9 to 14 inches; silty clay loam  
 H3—14 to 60 inches; silty clay

**Minor Components****Pawnee**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

**Woodson**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe35-42)

**Mc—Martin silty clay loam, 3 to 8 percent slopes****Map Unit Composition**

Martin: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Martin**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey colluvium derived from limestone and shale over silty and

clayey residuum weathered from limestone and shale

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 9.7 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 22 to 26 inches

*Runoff class:* Very high

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 12 inches; silty clay loam  
 H2—12 to 71 inches; silty clay

**Minor Components****Oska**

*Composition:* About 3 percent  
*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 3 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

**Sogn**

*Composition:* About 3 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-37)

**Vinland**

*Composition:* About 3 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Loamy Upland (pe30-37)

**Gymer**

*Composition:* About 2 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sibleyville**

*Composition:* About 1 percent  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe35-42)

**Mh—Martin Soils, 3 to 8 percent slopes, eroded****Map Unit Composition**

Martin: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Martin**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey colluvium derived from limestone and shale over silty and clayey residuum weathered from limestone and shale

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 9.7 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 22 to 26 inches

*Runoff class:* Very high

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 12 inches; silty clay loam

H2—12 to 71 inches; silty clay

### Minor Components

#### Pawnee

*Composition:* About 5 percent

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

#### Sogn

*Composition:* About 5 percent

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Shallow Limy (pe30-37)

#### Sibleyville

*Composition:* About 3 percent

*Slope:* 3 to 7 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe35-42)

#### Vinland

*Composition:* About 2 percent

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Loamy Upland (pe30-37)

## Mo—Martin-Oska silty clay loams, 3 to 6 percent slopes

### Map Unit Composition

Martin: 40 percent

Oska: 30 percent

Minor components: 30 percent

### Component Descriptions

#### Martin

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey colluvium derived from limestone and shale over silty and

clayey residuum weathered from limestone and shale

*Slope:* 3 to 6 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* High (About 9.7 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 22 to 26 inches

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 12 inches; silty clay loam

H2—12 to 71 inches; silty clay

#### Oska

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey residuum weathered from limestone and shale

*Slope:* 3 to 6 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Moderate (About 6.4 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 11 inches; silty clay loam

H2—11 to 38 inches; silty clay

R—38 to 42 inches; unweathered bedrock

**Minor Components**

**Martin**

*Phase:* Moderately Deep

*Composition:* About 25 percent

*Slope:* 3 to 6 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

**Sogn**

*Composition:* About 3 percent

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Shallow Limy (pe30-37)

**Vinland**

*Composition:* About 2 percent

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Loamy Upland (pe30-37)

**MR—Morrill clay loam, 3 to 7 percent slopes**

**Map Unit Composition**

Morrill: 90 percent

Minor components: 10 percent

**Component Descriptions**

**Morrill**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-loamy glaciofluvial deposits

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.1 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 10 inches; clay loam

H2—10 to 56 inches; clay loam

H3—56 to 66 inches; clay loam

**Minor Components**

**Oska**

*Composition:* About 5 percent

*Slope:* 3 to 6 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe35-42)

**Pawnee**

*Composition:* About 5 percent

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

**Mu—Muscotah silty clay loam, 0 to 1 percent slopes, very rarely flooded**

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

**Map Unit Composition**

Muscotah: 85 percent

Minor components: 15 percent

**Component Descriptions**

**Muscotah**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Terrace on river valley

*Parent material:* Clayey alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Very slow (About 0.00 in/hr)

*Available water capacity:* High (About 9.3 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* Very Rare  
*Depth to seasonal water saturation:* About 18 to 36 inches  
*Runoff class:* Very high  
*Land capability (irrigated):* 2w  
*Land capability (nonirrigated):* 2w

**Typical Profile:**

Ap—0 to 6 inches; silty clay loam  
 A—6 to 11 inches; silty clay loam  
 Bw—11 to 24 inches; silty clay  
 Bg1—24 to 47 inches; silty clay  
 Bg2—47 to 60 inches; silty clay

**Minor Components**

**Reading**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Moderately well drained

**Wabash**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Rossville**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-37)

**Unspecified**

*General Considerations:* Most areas of this soil are cultivated. This soil is suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding and ponding limits the suitability of this soil for many engineering uses. The land capability classification is Ilw.

**Mv—Morrill loam, 3 to 7 percent slopes**

**Map Unit Composition**

Morrill: 90 percent  
 Minor components: 10 percent

**Component Descriptions**

**Morrill**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland  
*Parent material:* Fine-loamy till  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 10.2 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Upland (pe30-37)  
*Land capability (nonirrigated):* 3e

**Typical Profile:**

H1—0 to 14 inches; loam  
 H2—14 to 45 inches; sandy clay loam  
 H3—45 to 72 inches; clay loam

**Minor Components**

**Oska**

*Composition:* About 5 percent  
*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 5 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

**Oc—Oska silty clay loam, 2 to 6 percent slopes**

**Map Unit Composition**

Oska: 90 percent  
 Minor components: 10 percent

**Component Descriptions**

**Oska**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from limestone and shale  
*Slope:* 2 to 6 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 6.4 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-37)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 11 inches; silty clay loam  
 H2—11 to 38 inches; silty clay  
 R—38 to 42 inches; unweathered bedrock

**Minor Components**

**Gymer**

*Composition:* About 2 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sogn**

*Composition:* About 2 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-37)

**Vinland**

*Composition:* About 2 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Grundy**

*Composition:* About 2 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe30-37)

**Pb—Pawnee clay loam, 1 to 3 percent slopes**

**Map Unit Composition**

Pawnee: 90 percent  
 Minor components: 10 percent

**Component Descriptions**

**Pawnee**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Hillslope position:* Shoulder, backslope

*Parent material:* Clayey drift

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Moderate (About 8.3 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 14 inches

*Runoff class:* High

*Ecological site:* Clay Upland (pe30-37)

*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 14 inches; clay loam  
 H2—14 to 34 inches; clay  
 H3—34 to 72 inches; sandy clay loam

**Minor Components**

**Martin**

*Composition:* About 5 percent  
*Slope:* 3 to 6 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe35-42)

**Woodson**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe35-42)

**Pc—Pawnee clay loam, 3 to 7 percent slopes****Map Unit Composition**

Pawnee: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Pawnee**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Hillslope position:* Backslope

*Parent material:* Clayey drift

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Moderate (About 8.3 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 14 inches

*Runoff class:* High

*Ecological site:* Clay Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 14 inches; clay loam

H2—14 to 34 inches; clay

H3—34 to 72 inches; sandy clay loam

**Minor Components****Oska**

*Composition:* About 5 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 6 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe35-42)

**Morrill**

*Composition:* About 5 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Composition:* About 5 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe35-42)

**PE—Pawnee clay loam, 3 to 7 percent slopes, eroded****Map Unit Composition**

Pawnee: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Pawnee**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Hillslope position:* Backslope

*Parent material:* Clayey drift

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Moderate (About 8.3 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 14 inches

*Runoff class:* High

*Ecological site:* Clay Upland (pe30-37)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 14 inches; clay loam

H2—14 to 34 inches; clay

H3—34 to 72 inches; sandy clay loam

**Minor Components****Morrill**

*Phase:* Eroded

*Composition:* About 5 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Phase:* Eroded

*Composition:* About 5 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe35-42)



## Ph—Pawnee Soils, 3 to 7 percent slopes, eroded

*Composition:* About 3 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

### Map Unit Composition

Pawnee: 85 percent  
 Minor components: 15 percent

### Component Descriptions

#### Pawnee

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills  
*Landform:* Hillslope on upland  
*Parent material:* Clayey till  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 5.9 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* About 9 to 14 inches  
*Runoff class:* High  
*Ecological site:* Clay Upland (pe30-37)  
*Land capability (nonirrigated):* 4e

#### Typical Profile:

H1—0 to 7 inches; clay  
 H2—7 to 60 inches; clay

### Minor Components

#### Morrill

*Composition:* About 3 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

#### Pawnee

*Composition:* About 3 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

#### Martin

*Composition:* About 3 percent  
*Slope:* 3 to 6 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

#### Grundy

*Composition:* About 3 percent  
*Slope:* 2 to 5 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe30-37)

#### Shelby

## Pt—Pits, Quarries

*General Considerations:* Pits are open excavations from which soil and commonly underlying material have been removed, exposing either rock or other material. Kinds include Pits, mine; Pits, gravel; and Pits, quarry. Commonly, pits are closely associated with Dumps.

## QUA—Quarries, Borrow Areas, Etc.

## Re—Reading silt loam, 0 to 2 percent slopes, very rarely flooded, moderately Wet

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

### Map Unit Composition

Reading: 85 percent  
 Minor components: 15 percent

### Component Descriptions

#### Reading

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills  
*Landform:* Terrace on river valley  
*Parent material:* Fine-silty alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 10.6 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* Very Rare  
*Depth to seasonal water saturation:* About 42 to 72 inches  
*Runoff class:* Medium  
*Land capability (nonirrigated):* 2w

**Typical Profile:**

Ap—0 to 8 inches; silt loam  
 A—8 to 14 inches; silt loam  
 BA—14 to 21 inches; silty clay loam  
 Bt1—21 to 29 inches; silty clay loam  
 Bt2—29 to 42 inches; silty clay loam  
 Bt3—42 to 60 inches; silty clay loam  
 BC—60 to 72 inches; silty clay loam

**Minor Components****Muscotah**

*Composition:* About 10 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained

**Rossville**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-37)

Unspecified

*General Considerations:* Most areas of this soil are cultivated. This soil is well suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding limits the suitability of this soil for many engineering uses. The land capability classification is 1lw.

## **Rs—Rossville silt loam, 0 to 2 percent slopes, very rarely flooded**

*Mapunit Information:* The map unit does meet the criteria for prime farmland.

### **Map Unit Composition**

Rossville: 85 percent  
 Minor components: 15 percent

### **Component Descriptions**

**Rossville**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Terrace on river valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.9 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Very Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-37)

*Land capability (nonirrigated):* 1

**Typical Profile:**

Ap—0 to 7 inches; silt loam  
 A1—7 to 14 inches; silt loam  
 A2—14 to 21 inches; silt loam  
 Bw1—21 to 26 inches; silt loam  
 Bw2—26 to 39 inches; silt loam  
 Bw3—39 to 57 inches; silt loam  
 BC—57 to 80 inches; silt loam

**Minor Components****Reading**

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Moderately well drained

**Muscotah**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained

*General Considerations:* Most areas of this soil are cultivated. This soil is well suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding limits the suitability of this soil for many engineering uses. The land capability classification is 1.

## **Sa—Stonehouse-Eudora complex, 1 to 5 percent slopes, occasionally flooded, Overwash**

*Mapunit Information:* The map unit does not meet the criteria for prime farmland.

### **Map Unit Composition**

Stonehouse: 40 percent  
 Eudora: 25 percent  
 Minor components: 35 percent

### **Component Descriptions**

**Stonehouse**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley

*Parent material:* Stratified sandy alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Excessively drained  
*Slowest permeability:* Moderately rapid (About 1.98 in/hr)  
*Available water capacity:* Low (About 4.8 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* Occasional  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Negligible  
*Land capability (irrigated):* 3s  
*Land capability (nonirrigated):* 4s

*Typical Profile:*

Ap—0 to 8 inches; loamy fine sand  
 C1—8 to 22 inches; fine sand  
 C2—22 to 38 inches; fine sand  
 C3—38 to 46 inches; fine sand  
 C4—46 to 59 inches; very fine sandy loam  
 C5—59 to 80 inches; sand

**Eudora**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Flood-plain step on river valley  
*Parent material:* Coarse-silty alluvium  
*Slope:* 0 to 3 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 11.9 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* Occasional  
*Depth to seasonal water saturation:* About 24 to 72 inches  
*Runoff class:* Low  
*Land capability (nonirrigated):* 1

*Typical Profile:*

Ap—0 to 6 inches; silt loam  
 A—6 to 12 inches; silt loam  
 AC—12 to 18 inches; silt loam  
 C1—18 to 25 inches; silt loam  
 C2—25 to 44 inches; silt loam  
 C3—44 to 60 inches; silt loam

**Minor Components**

**Bourbonais**

*Composition:* About 15 percent  
*Slope:* 0 to 3 percent  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Clay Lowland (pe30-37)

**Kimo**

*Composition:* About 10 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Lowland (pe30-37)

**Bismarckgrove**

*Composition:* About 10 percent  
*Slope:* 0 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Lowland (pe30-37)

*General Considerations:* Most areas of these soils are cultivated. These soils are suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding limits the suitability of these soils for many engineering uses. The land capability classification is IVw.

**Sc—Shelby-Pawnee complex, 3 to 8 percent slopes**

**Map Unit Composition**

Shelby: 55 percent  
 Pawnee: 30 percent  
 Minor components: 15 percent

**Component Descriptions**

**Shelby**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland  
*Parent material:* Fine-loamy till  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 10.5 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-37)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 12 inches; loam  
 H2—12 to 48 inches; clay loam  
 H3—48 to 60 inches; clay loam

**Pawnee**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Clayey till  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 7.0 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* About 9 to 14 inches  
*Runoff class:* Very high  
*Ecological site:* Clay Upland (pe30-37)  
*Land capability (nonirrigated):* 3e

**Typical Profile:**

H1—0 to 14 inches; clay loam  
 H2—14 to 60 inches; clay

**Minor Components****Grundy**

*Composition:* About 3 percent  
*Slope:* 2 to 5 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe30-37)

**Morrill**

*Composition:* About 3 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Composition:* About 3 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Oska**

*Composition:* About 2 percent  
*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sogn**

*Composition:* About 2 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-37)

**Vinland**

*Composition:* About 2 percent  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained  
*Ecological site:* Loamy Upland (pe30-37)

**So—Shelby-Pawnee complex, 8 to 12 percent slopes****Map Unit Composition**

Shelby: 65 percent  
 Pawnee: 25 percent  
 Minor components: 15 percent

**Component Descriptions****Shelby**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Fine-loamy till

*Slope:* 8 to 12 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.5 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 4e

**Typical Profile:**

H1—0 to 12 inches; loam  
 H2—12 to 48 inches; clay loam  
 H3—48 to 60 inches; clay loam

**Pawnee**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Clayey till

*Slope:* 8 to 12 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Moderate (About 7.0 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 9 to 14 inches

*Runoff class:* Very high

*Ecological site:* Clay Upland (pe30-37)  
*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 14 inches; clay loam  
 H2—14 to 60 inches; clay

**Minor Components**

**Vinland**

*Composition:* About 3 percent  
*Slope:* 7 to 15 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sogn**

*Composition:* About 3 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-37)

**Oska**

*Composition:* About 3 percent  
*Slope:* 3 to 6 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe35-42)

**Morrill**

*Composition:* About 3 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Composition:* About 3 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Ss—Sibleyville complex, 3 to 7 percent slopes**

**Map Unit Composition**

Sibleyville: 60 percent  
 Minor components: 40 percent

**Component Descriptions**

**Sibleyville**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Sandy and silty residuum weathered from sandstone and shale

*Slope:* 3 to 7 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Low (About 5.0 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Upland (pe35-42)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 10 inches; loam  
 H2—10 to 18 inches; loam  
 H3—18 to 29 inches; channery loam  
 Cr—29 to 33 inches; weathered bedrock

**Minor Components**

**Sibleyville-Like**

*Phase:* Shallow  
*Composition:* About 20 percent  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sibleyville-Like**

*Phase:* Deep  
*Composition:* About 10 percent  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Vinland**

*Composition:* About 2 percent  
*Slope:* 7 to 15 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Gymer**

*Composition:* About 2 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Shelby**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 2 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

## **Sv—Sibleyville complex, 7 to 12 percent slopes**

### **Map Unit Composition**

Sibleyville: 50 percent  
 Minor components: 50 percent

### **Component Descriptions**

**Sibleyville**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland

*Parent material:* Sandy and silty residuum weathered from sandstone and shale

*Slope:* 7 to 12 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Low (About 5.0 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Upland (pe30-37)

*Land capability (nonirrigated):* 6e

*Typical Profile:*

H1—0 to 10 inches; loam  
 H2—10 to 18 inches; loam  
 H3—18 to 29 inches; channery loam  
 Cr—29 to 33 inches; weathered bedrock

**Minor Components****Sibleyville**

*Phase:* Shallow

*Composition:* About 25 percent

*Slope:* 7 to 12 percent

*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Sibleyville**

*Phase:* Deep

*Composition:* About 15 percent

*Slope:* 7 to 12 percent

*Depth to restrictive feature:* 40 to 60 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Gymer**

*Composition:* About 3 percent

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Composition:* About 3 percent

*Slope:* 3 to 8 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 2 percent

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-37)

**Vinland**

*Composition:* About 2 percent

*Slope:* 7 to 15 percent

*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-37)

## **Sw—Sogn-Vinland complex, 5 to 20 percent slopes**

### **Map Unit Composition**

Sogn: 55 percent

Vinland: 30 percent

Minor components: 15 percent

### **Component Descriptions**

**Sogn**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Hillslope on upland  
*Parent material:* Loamy residuum weathered from limestone  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Very low (About 2.6 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Shallow Limy (pe30-37)  
*Land capability (nonirrigated):* 7s

*Typical Profile:*

H1—0 to 13 inches; silty clay loam  
 R—13 to 17 inches;

**Vinland**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills  
*Landform:* Hillslope on upland  
*Parent material:* Sandy and silty residuum weathered from shale  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Low (About 3.5 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Upland (pe30-37)  
*Land capability (nonirrigated):* 6s

*Typical Profile:*

H1—0 to 12 inches; silty clay loam  
 H2—12 to 16 inches; silty clay loam  
 Cr—16 to 20 inches; weathered bedrock

**Minor Components**

**Martin**

*Composition:* About 5 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Oska**

*Composition:* About 5 percent  
*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sibleyville**

*Composition:* About 5 percent  
*Slope:* 7 to 12 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Vc—Vinland complex, 3 to 7 percent slopes**

**Map Unit Composition**

Vinland: 50 percent  
 Minor components: 50 percent

**Component Descriptions**

**Vinland**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills  
*Landform:* Hillslope on upland  
*Parent material:* Sandy and silty residuum weathered from shale  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Low (About 3.5 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Upland (pe30-37)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*

H1—0 to 12 inches; silty clay loam  
 H2—12 to 16 inches; silty clay loam  
 Cr—16 to 20 inches; weathered bedrock

**Minor Components**

**Vinland**

*Composition:* About 30 percent  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Martin**

*Composition:* About 10 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sibleyville**

*Composition:* About 2 percent  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe35-42)

**Shelby**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-37)

**Sogn**

*Composition:* About 2 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-37)

**Oska**

*Composition:* About 2 percent  
*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Vo—Vinland complex, 7 to 15 percent slopes****Map Unit Composition**

Vinland: 55 percent

Minor components: 45 percent

**Component Descriptions****Vinland**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills  
*Landform:* Hillslope on upland  
*Parent material:* Sandy and silty residuum weathered from shale  
*Slope:* 7 to 15 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Low (About 3.5 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Upland (pe30-37)  
*Land capability (nonirrigated):* 6e

**Typical Profile:**

H1—0 to 12 inches; silty clay loam  
H2—12 to 16 inches; silty clay loam  
Cr—16 to 20 inches; weathered bedrock

**Minor Components****Vinland**

*Phase:* Moderately Deep  
*Composition:* About 30 percent  
*Slope:* 7 to 15 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Sogn**

*Composition:* About 5 percent  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-37)

**Martin**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe30-37)

**Pawnee**

*Composition:* About 2 percent  
*Slope:* 8 to 12 percent  
*Drainage class:* Moderately well drained



*Ecological site:* Clay Upland (pe30-37)

#### **Gymer**

*Composition:* About 2 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

#### **Shelby**

*Composition:* About 2 percent  
*Slope:* 8 to 12 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

#### **Sibleyville**

*Composition:* About 2 percent  
*Slope:* 7 to 12 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-37)

### **Vx—Vinland-Rock outcrop complex, 20 to 40 percent slopes**

#### **Map Unit Composition**

Rock outcrop: 60 percent  
 Vinland: 26 percent  
 Minor components: 14 percent

#### **Component Descriptions**

##### **Rock outcrop**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills  
*Landform:* Hillslope on upland  
*Slope:* 20 to 40 percent  
*Depth to restrictive feature:* 0 inches to bedrock (lithic)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Land capability (nonirrigated):* 8

##### **Vinland**

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills  
*Landform:* Hillslope on upland  
*Parent material:* Sandy and silty residuum weathered from shale  
*Slope:* 20 to 30 percent  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Low (About 3.5 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe35-42)  
*Land capability (nonirrigated):* 6e

#### *Typical Profile:*

H1—0 to 7 inches; silty clay loam  
 H2—7 to 17 inches; silty clay loam  
 Cr—17 to 21 inches; weathered bedrock

#### **Minor Components**

##### **Sogn**

*Composition:* About 10 percent  
*Slope:* 15 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-37)

##### **Martin**

*Composition:* About 2 percent  
*Slope:* 7 to 11 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe35-42)

##### **Oska**

*Composition:* About 2 percent  
*Slope:* 3 to 6 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe35-42)

### **W—Water**

### **Wc—Wabash silty clay loam, 0 to 1 percent slopes, occasionally flooded**

#### **Map Unit Composition**

Wabash: 94 percent  
 Minor components: 6 percent

## Component Descriptions

### Wabash

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills

*Landform:* Terrace on river valley

*Parent material:* Clayey alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Slowest permeability:* Very slow (About 0.00 in/hr)

*Available water capacity:* Moderate (About 8.4 inches)

*Shrink-swell potential:* Very high (About 17.0 LEP)

*Flooding hazard:* Very Rare

*Depth to seasonal water saturation:* About 2 to 9 inches

*Runoff class:* Very high

*Ecological site:* Clay Lowland (pe30-37)

*Land capability (nonirrigated):* 3w

#### Typical Profile:

H1—0 to 19 inches; silty clay loam

H2—19 to 60 inches; silty clay

### Minor Components

#### Kennebec

*Composition:* About 3 percent

*Slope:* 0 to 2 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Lowland (pe30-37)

#### Reading

*Composition:* About 3 percent

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-37)

*Landform:* Terrace on river valley

*Parent material:* Clayey alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

*Slowest permeability:* Very slow (About 0.00 in/hr)

*Available water capacity:* Moderate (About 6.0 inches)

*Shrink-swell potential:* Very high (About 17.0 LEP)

*Flooding hazard:* Very Rare

*Ponding hazard:* Occasional

*Depth to seasonal water saturation:* About 0 to 12 inches

*Runoff class:* Very high

*Land capability (nonirrigated):* 3w

#### Typical Profile:

Ap—0 to 5 inches; silty clay

A1—5 to 10 inches; silty clay

A2—10 to 16 inches; silty clay

Bg1—16 to 28 inches; silty clay

Bg2—28 to 52 inches; silty clay

Cg—52 to 69 inches; silty clay

### Minor Components

#### Muscotah

*Composition:* About 15 percent

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*General Considerations:* Most areas of this soil are cultivated. This soil is suited to all major crops commonly grown in the valley. This soil has good potential for hay or tame grasses. Flooding and wetness limits the suitability of this soil for many engineering uses. The land capability classification is IIIw.

## Wh—Wabash silty clay, 0 to 2 percent slopes, occasionally flooded

*Mapunit Information:* The map unit does not meet the criteria for prime farmland.

## Map Unit Composition

Wabash: 85 percent

Minor components: 15 percent

## Component Descriptions

### Wabash

*MLRA:* 106 - Nebraska and Kansas Loess-Drift Hills