

## Be—Benfield-Florence complex, 5 to 30 percent slopes

### Map Unit Composition

Benfield: 42 percent  
 Florence: 28 percent  
 Minor components: 30 percent

### Component Descriptions

#### Benfield

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Clayey pedisidiment derived from limestone and shale over clayey residuum  
 weathered from calcareous shale  
*Slope:* 5 to 30 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 5.7 inches)  
*Shrink-swell potential:* High (About 8.9 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

#### Typical Profile:

A1—0 to 5 inches; silty clay loam  
 A2—5 to 10 inches; silty clay loam  
 Bt1—10 to 19 inches; gravelly silty clay  
 Bt2—19 to 34 inches; silty clay  
 2Btk—34 to 38 inches; silty clay  
 2Cr—38 to 56 inches; weathered bedrock

#### Florence

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Gravelly residuum weathered from cherty limestone  
*Slope:* 5 to 15 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* Low (About 4.6 inches)  
*Shrink-swell potential:* Very high (About 9.2 LEP)

*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

#### Typical Profile:

A1—0 to 5 inches; gravelly silt loam  
 A2—5 to 14 inches; very gravelly silty clay  
 Bt—14 to 48 inches; very cobbly clay  
 Btk—48 to 56 inches; extremely cobbly silty clay  
 R—56 to 60 inches; unweathered bedrock

### Minor Components

#### Clime

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 20 to 40 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

#### Konza

*Composition:* About 10 percent  
*Geomorphic Position:* ridge on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

#### Labette

*Composition:* About 3 percent  
*Slope:* 0 to 4 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

#### Irwin

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-36)

#### Tully

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 8 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

#### Kahola

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

### Calcareous, Fine-Loamy, Cumulic Hapludolls

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Rock outcrop**

*Composition:* About 1 percent

## **Cc—Clime silty clay loam, 20 to 40 percent slopes, very stony**

### **Map Unit Composition**

Clime: 75 percent  
 Minor components: 25 percent

### **Component Descriptions**

**Clime**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Silty and clayey residuum weathered from shale, calcareous  
*Slope:* 20 to 40 percent  
*Surface fragments:* About 0 to 3 percent angular (shape or size unspecified)  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 5.3 inches)  
*Shrink-swell potential:* High (About 8.4 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Limy Upland (pe30-36)  
*Land capability (nonirrigated):* 7e

*Typical Profile:*

A1—0 to 2 inches; silty clay loam  
 A2—2 to 9 inches; silty clay  
 Bw—9 to 27 inches; silty clay  
 C—27 to 33 inches; silty clay  
 Cr—33 to 37 inches; weathered bedrock

**Minor Components****Tuttle**

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 20 to 40 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

**Tully**

*Composition:* About 8 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 8 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Rock outcrop**

*Composition:* About 4 percent

**Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Sogn**

*Composition:* About 1 percent  
*Slope:* 1 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-36)

**Kahola**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

## **Cf—Clime-Sogn silty clay loams, 5 to 20 percent slopes**

### **Map Unit Composition**

Clime: 60 percent  
 Sogn: 20 percent  
 Minor components: 20 percent

### **Component Descriptions**

**Clime**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from shale, calcareous  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 5.2 inches)  
*Shrink-swell potential:* High (About 8.4 LEP)

*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Limy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*

A—0 to 12 inches; silty clay loam  
 Bw—12 to 26 inches; silty clay  
 C—26 to 30 inches; silty clay  
 Cr—30 to 34 inches; weathered bedrock

**Sogn**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Upland, hillslope  
*Parent material:* Loamy residuum weathered from limestone, unspecified  
*Slope:* 1 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 2.0 inches)  
*Shrink-swell potential:* Moderate (About 4.9 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Shallow Limy (pe30-36)  
*Land capability (nonirrigated):* 6s

*Typical Profile:*

A—0 to 9 inches; silty clay loam  
 R—9 to 13 inches; unweathered bedrock

**Minor Components**

**Tully**

*Composition:* About 12 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 8 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Tuttle**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 20 to 40 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (paralithic)  
*Drainage class:* Somewhat excessively drained

**Irwin**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-36)

**Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Konza**

*Composition:* About 1 percent  
*Geomorphic Position:* ridge on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

**Kahola**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Cr—Crete silty clay loam, 0 to 1 percent slopes**

**Map Unit Composition**

Crete: 90 percent  
 Minor components: 10 percent

**Component Descriptions**

**Crete**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Ridge on upland  
*Hillslope position:* Shoulder, summit  
*Parent material:* Loess  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 10.3 inches)  
*Shrink-swell potential:* Very high (About 9.5 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium

*Ecological site:* Clay Upland (pe25-34)  
*Land capability (nonirrigated):* 2s

*Typical Profile:*

Ap—0 to 6 inches; silty clay loam  
 BA—6 to 14 inches; silty clay loam  
 Bt—14 to 30 inches; silty clay  
 Btk—30 to 42 inches; silty clay loam  
 BC—42 to 60 inches; silty clay loam

**Minor Components**

**Holder**

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Hastings**

*Composition:* About 5 percent  
*Geomorphic Position:* divide on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe26-30)

**Cs—Crete silty clay loam, 1 to 4 percent slopes**

**Map Unit Composition**

Crete: 90 percent  
 Minor components: 10 percent

**Component Descriptions**

**Crete**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope, shoulder  
*Parent material:* Loess  
*Slope:* 1 to 4 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 10.1 inches)  
*Shrink-swell potential:* Very high (About 9.5 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Clay Upland (pe25-34)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

Ap—0 to 6 inches; silty clay loam  
 BA—6 to 11 inches; silty clay loam  
 Bt—11 to 27 inches; silty clay  
 Btk—27 to 40 inches; silty clay loam  
 BC—40 to 60 inches; silty clay loam

**Minor Components**

**Holder**

*Composition:* About 4 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Hastings**

*Composition:* About 4 percent  
*Geomorphic Position:* divide on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe26-30)

**Clime**

*Composition:* About 2 percent  
*Slope:* 1 to 4 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Ct—Crete silty clay loam, 3 to 8 percent slopes**

**Map Unit Composition**

Crete: 90 percent  
 Minor components: 10 percent

**Component Descriptions**

**Crete**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Shoulder, backslope  
*Parent material:* Loess  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 9.8 inches)  
*Shrink-swell potential:* Very high (About 9.5 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Clay Upland (pe25-34)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

Ap—0 to 6 inches; silty clay loam  
Bt—6 to 16 inches; silty clay  
Btk—16 to 29 inches; silty clay loam  
BC—29 to 46 inches; silty clay loam  
C—46 to 60 inches; silt loam

**Minor Components**

**Hastings**

*Composition:* About 4 percent  
*Geomorphic Position:* divide on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe26-30)

**Holder**

*Composition:* About 4 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Clime**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches  
to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Eu—Eudora silt loam,  
occasionally flooded**

**Map Unit Composition**

Eudora: 85 percent  
Minor components: 15 percent

**Component Descriptions**

**Eudora**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60  
in/hr)  
*Available water capacity:* Very high (About 12.1  
inches)  
*Shrink-swell potential:* Low (About 2.4 LEP)  
*Flooding hazard:* Occasional  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6  
feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-36)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

Ap—0 to 7 inches; silt loam  
A1—7 to 14 inches; silt loam  
A2—14 to 19 inches; silt loam  
C1—19 to 26 inches; silt loam  
C2—26 to 60 inches; very fine sandy loam

**Minor Components**

**McCook**

*Composition:* About 10 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe25-34)

**Sarpy**

*Composition:* About 3 percent  
*Slope:* 0 to 4 percent  
*Drainage class:* Excessively drained  
*Ecological site:* Sandy Lowland (pe30-36)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Ge—Geary silt loam, 3 to 8 percent  
slopes**

**Map Unit Composition**

Geary: 85 percent  
Minor components: 15 percent

**Component Descriptions**

**Geary**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Footslope, backslope  
*Parent material:* Silty loess  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60  
in/hr)  
*Available water capacity:* High (About 11.3  
inches)

*Shrink-swell potential:* Moderate (About 5.6 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

A1—0 to 8 inches; silt loam  
 A2—8 to 18 inches; silt loam  
 Bt1—18 to 25 inches; silty clay loam  
 Bt2—25 to 48 inches; silty clay loam  
 Bt3—48 to 60 inches; silty clay loam

**Minor Components**

**Hastings**

*Composition:* About 4 percent  
*Geomorphic Position:* divide on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe26-30)

**Holder**

*Composition:* About 4 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Crete**

*Composition:* About 4 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

**Clime**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Sogn**

*Composition:* About 1 percent  
*Slope:* 6 to 12 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-36)

**Gf—Geary silt loam, 7 to 15 percent slopes**

**Map Unit Composition**

Geary: 85 percent  
 Minor components: 15 percent

**Component Descriptions**

**Geary**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Silty loess  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 11.0 inches)  
*Shrink-swell potential:* Moderate (About 5.6 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*

A1—0 to 6 inches; silt loam  
 A2—6 to 10 inches; silt loam  
 Bt1—10 to 16 inches; silty clay loam  
 Bt2—16 to 38 inches; silty clay loam  
 BC—38 to 60 inches; silt loam

**Minor Components**

**Holder**

*Composition:* About 9 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Clime**

*Composition:* About 5 percent  
*Slope:* 7 to 15 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Sogn**

*Composition:* About 1 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 (pe30-36)

## **He—Haynie silt loam, frequently flooded**

### **Map Unit Composition**

Haynie: 55 percent  
 Minor components: 45 percent

### **Component Descriptions**

#### **Haynie**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Flood plain 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 12.4 inches)  
*Shrink-swell potential:* Low (About 2.6 LEP)  
*Flooding hazard:* Frequent  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 5w

#### *Typical Profile:*

A—0 to 10 inches; silt loam  
 C—10 to 60 inches; very fine sandy loam

#### **Minor Components**

##### **Unnamed Stratified Soils (fine-Silty)**

*Composition:* About 33 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Moderately well drained

##### **Unnamed Stratified Soils (fine)**

*Composition:* About 9 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Moderately well drained

##### **Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

##### **Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

## **Unnamed Stratified Soils (sandy)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Excessively drained

## **Hf—Hobbs silt loam, channeled**

### **Map Unit Composition**

Hobbs: 89 percent  
 Minor components: 11 percent

### **Component Descriptions**

#### **Hobbs**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Flood plain on meander belt  
*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:* High (About 11.9 inches)  
*Shrink-swell potential:* Moderate (About 3.3 LEP)  
*Flooding hazard:* Frequent  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe25-34)  
*Land capability (nonirrigated):* 5w

#### *Typical Profile:*

A—0 to 8 inches; silt loam  
 C1—8 to 24 inches; silt loam  
 C2—24 to 44 inches; silt loam  
 C3—44 to 60 inches; silt loam

#### **Minor Components**

##### **Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

#### **Muir**

*Composition:* About 2 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Terrace (pe25-34)

**Crete**

*Composition:* About 1 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

**Geary**

*Composition:* About 1 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Hg—Hobbs silt loam, occasionally flooded**

**Map Unit Composition**

Hobbs: 89 percent  
 Minor components: 11 percent

**Component Descriptions**

**Hobbs**

*MLRA:* 75 - Central Loess Plains  
*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:* High (About 11.9 inches)  
*Shrink-swell potential:* Moderate (About 3.3 LEP)  
*Flooding hazard:* Occasional  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe25-34)  
*Land capability (nonirrigated):* 2w  
  
*Typical Profile:*  
     A—0 to 8 inches; silt loam  
     C1—8 to 24 inches; silt loam

C2—24 to 44 inches; silt loam  
 C3—44 to 60 inches; silt loam

**Minor Components**

**Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Muir**

*Composition:* About 2 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Terrace (pe25-34)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Geary**

*Composition:* About 1 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Crete**

*Composition:* About 1 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

**Hm—Holder silt loam, 1 to 3 percent slopes**

**Map Unit Composition**

Holder: 95 percent  
 Minor components: 5 percent

**Component Descriptions**

**Holder**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Silty loess  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained



*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Very high (About 12.1 inches)  
*Shrink-swell potential:* Moderate (About 5.1 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 2e

**Typical Profile:**

A—0 to 8 inches; silt loam  
 BA—8 to 14 inches; silt loam  
 Bt—14 to 45 inches; silty clay loam  
 BC—45 to 58 inches; silty clay loam  
 Ck—58 to 60 inches; silt loam

**Minor Components****Crete**

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 4 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

**Ho—Holder silt loam, 3 to 7 percent slopes****Map Unit Composition**

Holder: 75 percent  
 Minor components: 25 percent

**Component Descriptions****Holder**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Silty loess  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Very high (About 12.1 inches)  
*Shrink-swell potential:* Moderate (About 5.1 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 3e

**Typical Profile:**

A—0 to 8 inches; silt loam  
 BA—8 to 14 inches; silt loam  
 Bt—14 to 45 inches; silty clay loam  
 BC—45 to 58 inches; silty clay loam  
 Ck—58 to 60 inches; silt loam

**Minor Components****Crete**

*Composition:* About 13 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

**Geary**

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Clime**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Id—Irwin silty clay loam, 3 to 7 percent slopes****Map Unit Composition**

Irwin: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Irwin**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Silty and clayey alluvium over clayey residuum weathered from limestone and shale  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained

*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 8.7 inches)  
*Shrink-swell potential:* High (About 8.9 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Clay Upland (pe30-36)  
*Land capability (nonirrigated):* 4e

*Typical Profile:*

A—0 to 6 inches; silty clay loam  
 BA—6 to 13 inches; silty clay loam  
 Bt1—13 to 30 inches; silty clay  
 Btk—30 to 41 inches; silty clay  
 2Bt2—41 to 72 inches; silty clay

**Minor Components**

**Konza**

*Composition:* About 10 percent  
*Geomorphic Position:* ridge on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

**Florence**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 5 to 10 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Clime**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Ka—Kahola silt loam, channeled**

**Map Unit Composition**

Kahola: 75 percent  
 Minor components: 25 percent

**Component Descriptions**

**Kahola**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Flood plain on meander belt  
*Parent material:* 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 4.0 LEP)  
*Flooding hazard:* Frequent  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 5w

*Typical Profile:*

A1—0 to 24 inches; silt loam  
 A2—24 to 36 inches; silt loam  
 AC—36 to 44 inches; silt loam  
 C—44 to 60 inches; silt loam

**Minor Components**

**Tully**

*Composition:* About 13 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Kb—Kahola silt loam, occasionally flooded****Map Unit Composition**

Kahola: 75 percent  
 Minor components: 25 percent

**Component Descriptions****Kahola**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Flood plain on valley  
*Parent material:* 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 4.0 LEP)  
*Flooding hazard:* Occasional  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 2w

**Typical Profile:**

A1—0 to 24 inches; silt loam  
 A2—24 to 36 inches; silt loam  
 AC—36 to 44 inches; silt loam  
 C—44 to 60 inches; silt loam

**Minor Components****Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Tully**

*Composition:* About 8 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Reading**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Ko—Konza silty clay loam, 1 to 3 percent slopes****Map Unit Composition**

Konza: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Konza**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Ridge on upland  
*Hillslope position:* Summit, shoulder  
*Parent material:* Silty and clayey loess over silty and clayey pedisegment over clayey residuum  
 weathered from limestone and shale  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 8.8 inches)  
*Shrink-swell potential:* Very high (About 10.0 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Clay Pan (pe30-36)  
*Land capability (nonirrigated):* 3e

**Typical Profile:**

A—0 to 6 inches; silty clay loam  
 Bt1—6 to 28 inches; silty clay  
 Bt2—28 to 42 inches; silty clay  
 Bt3—42 to 50 inches; silty clay loam  
 2Bt4—50 to 70 inches; silty clay loam  
 3Bt5—70 to 89 inches; clay

**Minor Components****Irwin**

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-36)

**Ladysmith**

*Composition:* About 3 percent  
*Geomorphic Position:* ridge on upland  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe30-36)

**Labette**

*Composition:* About 3 percent  
*Slope:* 0 to 4 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Clime**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Florence**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 5 to 10 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Lm—Ladysmith silty clay loam, 0 to 2 percent slopes****Map Unit Composition**

Ladysmith: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Ladysmith**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Ridge on upland  
*Hillslope position:* Summit, shoulder  
*Parent material:* Clayey alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Slowest permeability:* Impermeable (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 8.7 inches)  
*Shrink-swell potential:* Very high (About 9.0 LEP)

*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very high  
*Ecological site:* Clay Upland (pe30-36)  
*Land capability (nonirrigated):* 2s

*Typical Profile:*

A—0 to 7 inches; silty clay loam  
 Bt1—7 to 15 inches; silty clay  
 Bt2—15 to 30 inches; clay  
 BCk—30 to 38 inches; clay  
 C—38 to 60 inches; silty clay

**Minor Components****Konza**

*Composition:* About 10 percent  
*Geomorphic Position:* ridge on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

**Lo—Longford loam, 1 to 3 percent slopes****Map Unit Composition**

Longford: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Longford**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Loamy alluvium  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 10.6 inches)  
*Shrink-swell potential:* High (About 6.4 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

A—0 to 11 inches; loam  
 BA—11 to 16 inches; clay loam  
 Bt—16 to 46 inches; clay loam

BC—46 to 54 inches; clay loam  
C—54 to 60 inches; loam

### Minor Components

#### Crete

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 4 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

#### Wells

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

#### Ortello

*Composition:* About 5 percent  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe25-34)

## M-W—Miscellaneous Water

### Mb—McCook silt loam, occasionally flooded

#### Map Unit Composition

McCook: 85 percent  
Minor components: 15 percent

#### Component Descriptions

##### McCook

*MLRA:* 75 - Central Loess Plains  
*Landform:* Stream terrace on river valley  
*Parent material:* Weakly stratified calcareous coarse-silty alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 11.8 inches)  
*Shrink-swell potential:* Low (About 2.1 LEP)  
*Flooding hazard:* Occasional  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe25-34)  
*Land capability (nonirrigated):* 2w

#### Typical Profile:

A—0 to 16 inches; silt loam  
AC—16 to 25 inches; silt loam  
C—25 to 60 inches; very fine sandy loam

### Minor Components

#### Eudora

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

#### Smokyhill

*Composition:* About 3 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Lowland (pe30-36)

### Unnamed Hydric Soil (saturation)

*Composition:* About 1 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained

#### Solomon

*Composition:* About 1 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Clay Lowland (pe30-36)

### Mc—McCook silt loam, rarely flooded

#### Map Unit Composition

McCook: 85 percent  
Minor components: 15 percent

#### Component Descriptions

##### McCook

*MLRA:* 75 - Central Loess Plains  
*Landform:* Stream terrace on river valley  
*Parent material:* Weakly stratified calcareous coarse-silty alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 11.8 inches)  
*Shrink-swell potential:* Low (About 2.1 LEP)  
*Flooding hazard:* Rare  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe25-34)

*Land capability (nonirrigated):* 1

*Typical Profile:*

A—0 to 16 inches; silt loam

AC—16 to 25 inches; silt loam

C—25 to 60 inches; very fine sandy loam

### **Minor Components**

#### **Eudora**

*Composition:* About 10 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-36)

#### **Smokyhill**

*Composition:* About 3 percent

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Lowland (pe30-36)

#### **Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

#### **Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

## **Mk—McCook-Smokyhill silt loams, occasionally flooded**

### **Map Unit Composition**

McCook: 63 percent

Smokyhill: 25 percent

Minor components: 12 percent

### **Component Descriptions**

#### **McCook**

*MLRA:* 75 - Central Loess Plains

*Landform:* Stream terrace on river valley

*Parent material:* Weakly stratified calcareous coarse-silty alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 11.7 inches)

*Shrink-swell potential:* Low (About 2.1 LEP)

*Flooding hazard:* Occasional

*Ponding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe25-34)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

A—0 to 12 inches; silt loam

AC—12 to 23 inches; silt loam

C—23 to 60 inches; silt loam, very fine sandy loam

#### **Smokyhill**

*MLRA:* 75 - Central Loess Plains

*Landform:* Depression on flood plain on river valley

*Parent material:* Clayey alluvium over silty alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

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

*Available water capacity:* High (About 10.7 inches)

*Shrink-swell potential:* High (About 6.8 LEP)

*Flooding hazard:* Occasional

*Ponding hazard:* Rare

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

*Runoff class:* Negligible

*Ecological site:* Clay Lowland (pe30-36)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

Ap—0 to 6 inches; silt loam

A—6 to 14 inches; silty clay loam

AC—14 to 30 inches; silty clay loam

2C—30 to 72 inches; silt loam

### **Minor Components**

#### **McCook Sandy Substratum**

*Composition:* About 5 percent

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe25-34)

#### **Sutphen**

*Composition:* About 5 percent

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Clay Lowland (pe30-36)

#### **Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

#### **Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

## **Mu—Muir silt loam, rarely flooded**

### **Map Unit Composition**

Muir: 94 percent  
Minor components: 6 percent

### **Component Descriptions**

#### **Muir**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Flood plain on alluvial plain  
*Parent material:* 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 12.3 inches)  
*Shrink-swell potential:* Moderate (About 3.0 LEP)  
*Flooding hazard:* Rare  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Terrace (pe25-34)  
*Land capability (nonirrigated):* 1

#### *Typical Profile:*

Ap—0 to 4 inches; silt loam  
A—4 to 16 inches; silt loam  
Bw1—16 to 24 inches; silt loam  
Bw2—24 to 44 inches; silt loam  
C—44 to 60 inches; silt loam

#### **Minor Components**

##### **Sutphen**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Lowland (pe30-36)

##### **Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

## **Oc—Orthents**

## **Or—Orthents, Earthen Dam**

## **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.

## **Ra—Reading silt loam, 0 to 1 percent slopes**

### **Map Unit Composition**

Reading: 85 percent  
Minor components: 15 percent

### **Component Descriptions**

#### **Reading**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Flood plain on valley  
*Parent material:* Silty alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 11.8 inches)  
*Shrink-swell potential:* Moderate (About 5.1 LEP)  
*Flooding hazard:* Rare  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 1

#### *Typical Profile:*

Ap—0 to 8 inches; silt loam  
A—8 to 20 inches; silty clay loam  
Bt1—20 to 52 inches; silty clay loam  
Bt2—52 to 60 inches; silty clay loam

#### **Minor Components**

##### **Tully**

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 4 percent

*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Kahola**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Re—Reading silty clay loam, 0 to 2 percent slopes****Map Unit Composition**

Reading: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Reading**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Flood plain on valley  
*Parent material:* Silty alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 11.7 inches)  
*Shrink-swell potential:* Moderate (About 5.1 LEP)  
*Flooding hazard:* Rare  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 1

*Typical Profile:*

Ap—0 to 8 inches; silty clay loam  
 A—8 to 20 inches; silty clay loam  
 Bt1—20 to 52 inches; silty clay loam  
 Bt2—52 to 60 inches; silty clay loam

**Minor Components****Tully**

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Kahola**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent

*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Sa—Sarpy loamy fine sand, 0 to 4 percent slopes****Map Unit Composition**

Sarpy: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Sarpy**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Sandy alluvium  
*Slope:* 0 to 4 percent  
*Drainage class:* Excessively drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Low (About 4.5 inches)  
*Shrink-swell potential:* Low (About 0.0 LEP)  
*Flooding hazard:* Occasional  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Negligible  
*Ecological site:* Sandy Lowland (pe30-36)  
*Land capability (nonirrigated):* 4s

*Typical Profile:*

Ap—0 to 9 inches; loamy fine sand  
 C—9 to 60 inches; fine sand

**Minor Components****Eudora**

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Sc—Sarpy gravelly loamy sand, 0 to 4 percent slopes, occasionally flooded****Map Unit Composition**

Sarpy: 90 percent  
 Minor components: 10 percent

**Component Descriptions**



**Sarpy**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Sandy alluvium  
*Slope:* 0 to 4 percent  
*Drainage class:* Excessively drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Very low (About 2.1 inches)  
*Shrink-swell potential:* Low (About 0.0 LEP)  
*Flooding hazard:* Occasional  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Negligible  
*Ecological site:* Sandy Lowland (pe30-36)  
*Land capability (nonirrigated):* 6s

*Typical Profile:*

A—0 to 4 inches; gravelly loamy coarse sand  
 C1—4 to 10 inches; sand  
 C2—10 to 60 inches; coarse sand

**Minor Components****Eudora**

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Sh—Solomon silty clay, occasionally flooded****Map Unit Composition**

Solomon: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Solomon**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Ephemeral oxbow lake on flood plain 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 6.5 inches)  
*Shrink-swell potential:* Very high (About 10.4 LEP)  
*Flooding hazard:* Occasional

*Ponding hazard:* Frequent

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

*Runoff class:* Negligible

*Ecological site:* Clay Lowland (pe30-36)

*Land capability (nonirrigated):* 3w

*Typical Profile:*

Ap—0 to 8 inches; silty clay  
 A—8 to 19 inches; silty clay  
 Bg1—19 to 36 inches; clay  
 Bg2—36 to 50 inches; clay  
 Bg3—50 to 60 inches; clay

**Minor Components****Sutphen**

*Composition:* About 10 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Lowland (pe30-36)

**McCook**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe25-34)

**St—Sutphen silty clay, occasionally flooded****Map Unit Composition**

Sutphen: 80 percent  
 Minor components: 20 percent

**Component Descriptions****Sutphen**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Flood plain 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:* Moderate (About 7.9 inches)  
*Shrink-swell potential:* Very high (About 9.7 LEP)  
*Flooding hazard:* Occasional  
*Ponding hazard:* Occasional  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Clay Lowland (pe30-36)  
*Land capability (nonirrigated):* 3w

*Typical Profile:*

Ap—0 to 6 inches; silty clay  
 A1—6 to 11 inches; silty clay  
 A2—11 to 21 inches; silty clay  
 AC—21 to 30 inches; silty clay  
 C1—30 to 40 inches; silty clay  
 C2—40 to 60 inches; silty clay

**Minor Components****Muir**

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Terrace (pe25-34)

**McCook**

*Composition:* About 8 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe25-34)

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Solomon**

*Composition:* About 1 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Clay Lowland (pe30-36)

**Tn—Tully silty clay loam, 1 to 4 percent slopes****Map Unit Composition**

Tully: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Tully**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Footslope  
*Parent material:* Clayey colluvium  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 9.1 inches)  
*Shrink-swell potential:* High (About 8.0 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None

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

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-36)

*Land capability (nonirrigated):* 2e

*Typical Profile:*

A—0 to 12 inches; silty clay loam  
 BA—12 to 21 inches; silty clay loam  
 Bt1—21 to 31 inches; silty clay  
 Bt2—31 to 40 inches; silty clay  
 Bt3—40 to 52 inches; silty clay  
 BC—52 to 60 inches; silty clay

**Minor Components****Kahola**

*Composition:* About 6 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Reading**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Florence**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 5 to 8 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Clime**

*Composition:* About 2 percent  
*Slope:* 1 to 4 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**To—Tully silty clay loam, 3 to 8 percent slopes****Map Unit Composition**

Tully: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Tully**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Footslope

*Parent material:* Clayey colluvium  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 9.1 inches)  
*Shrink-swell potential:* High (About 8.0 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

A—0 to 12 inches; silty clay loam  
 BA—12 to 21 inches; silty clay loam  
 Bt1—21 to 31 inches; silty clay  
 Bt2—31 to 40 inches; silty clay  
 Bt3—40 to 52 inches; silty clay  
 BC—52 to 60 inches; silty clay

**Minor Components**

**Kahola**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Reading**

*Composition:* About 3 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Benfield**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 5 to 15 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Florence**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 5 to 15 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Clime**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Vc—Valentine loamy fine sand, 5 to 15 percent slopes**

**Map Unit Composition**

Valentine: 85 percent  
 Minor components: 15 percent

**Component Descriptions**

**Valentine**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Dune on upland  
*Parent material:* Sandy eolian sands  
*Slope:* 5 to 15 percent  
*Drainage class:* Excessively drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Low (About 5.6 inches)  
*Shrink-swell potential:* Low (About 0.0 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Sandy (pe25-34)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*

A—0 to 5 inches; loamy fine sand  
 C1—5 to 50 inches; loamy sand  
 C2—50 to 60 inches; sand

**Minor Components**

**Ortello**

*Composition:* About 5 percent  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe25-34)

**Wells**

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Longford**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland

*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Clime**

*Composition:* About 1 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches  
to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**W—Water**

**We—Wells-Ortello complex, 1 to 4 percent slopes**

**Map Unit Composition**

Wells: 50 percent  
Ortello: 30 percent  
Minor components: 15 percent

**Component Descriptions**

**Wells**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Fine-loamy residuum  
*Slope:* 1 to 4 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 4.9 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

A—0 to 12 inches; loam  
BA—12 to 19 inches; clay loam  
Bt1—19 to 37 inches; clay loam  
Bt2—37 to 51 inches; sandy clay loam  
BC—51 to 63 inches; clay loam

**Ortello**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Parent material:* Loamy alluvium and/or loamy eolian deposits  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately rapid (About 2.00 in/hr)  
*Available water capacity:* High (About 9.0 inches)  
*Shrink-swell potential:* Low (About 0.5 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Sandy (pe25-34)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

Ap—0 to 6 inches; sandy loam  
A—6 to 15 inches; sandy loam  
Bw—15 to 34 inches; sandy loam  
C—34 to 60 inches; sandy loam

**Minor Components**

**Longford**

*Composition:* About 12 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Clime**

*Composition:* About 1 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches  
to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Valentine**

*Composition:* About 1 percent  
*Slope:* 5 to 15 percent  
*Drainage class:* Excessively drained  
*Ecological site:* Sandy (pe25-34)

**Crete**

*Composition:* About 1 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 4 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

## Wf—Wells-Ortello complex, 4 to 8 percent slopes

### Map Unit Composition

Wells: 50 percent  
Ortello: 30 percent  
Minor components: 15 percent

### Component Descriptions

#### Wells

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Fine-loamy residuum  
*Slope:* 4 to 8 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 4.9 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 4e

#### Typical Profile:

A—0 to 12 inches; loam  
BA—12 to 19 inches; clay loam  
Bt1—19 to 37 inches; clay loam  
Bt2—37 to 51 inches; sandy clay loam  
BC—51 to 63 inches; clay loam

#### Ortello

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Parent material:* Loamy alluvium and/or loamy eolian deposits  
*Slope:* 4 to 8 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately rapid (About 2.00 in/hr)  
*Available water capacity:* High (About 9.0 inches)  
*Shrink-swell potential:* Low (About 0.5 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sandy (pe25-34)  
*Land capability (nonirrigated):* 4e

#### Typical Profile:

Ap—0 to 6 inches; sandy loam  
A—6 to 15 inches; sandy loam  
Bw—15 to 34 inches; sandy loam  
C—34 to 60 inches; sandy loam

### Minor Components

#### Longford

*Composition:* About 14 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

#### Clime

*Composition:* About 1 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)