

990—Abbyville loam, 0 to 1 percent slopes**Map Unit Composition**

Abbyville: 95 percent
 Minor components: 5 percent

Component Descriptions**Abbyville**

MLRA: 79 - Great Bend Sand Plains
Landform: Terrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 7.2 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Saline Subirrigated (pe21-28)
Land capability (irrigated): 3s
Land capability (nonirrigated): 3s

Typical Profile:

A—0 to 8 inches; loam
 Btknz1—8 to 15 inches; sandy clay loam
 Btknz2—15 to 24 inches; clay loam
 Btknz3—24 to 35 inches; clay loam
 Btknz4—35 to 49 inches; clay loam
 Btkn1—49 to 61 inches; sandy clay loam
 Btkn2—61 to 69 inches; loam
 Btkn3—69 to 80 inches; clay loam

Minor Components**Kisiwa**

Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Saline Subirrigated (pe21-28)

General Considerations: This map unit is poorly suited to the commonly grown crops due to the sodic conditions and wetness. Most areas are used for pasture or range. For areas that are cropped, the hazard of wind or water erosion is slight. Maintaining soil tilth and soil crusting are problems, but they can be improved by adding organic matter. The high sodium content, pH, soluble salts, and water table limit the engineering uses of these soils.

991—Abbyville-Kisiwa complex, 0 to 2 percent slopes, flooded**Map Unit Composition**

Abbyville: 45 percent
 Kisiwa: 40 percent
 Minor components: 15 percent

Component Descriptions**Abbyville**

MLRA: 79 - Great Bend Sand Plains
Landform: Terrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 7.1 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Saline Subirrigated (pe21-28)
Land capability (irrigated): 3s
Land capability (nonirrigated): 3s

Typical Profile:

A—0 to 8 inches; fine sandy loam
 Btknz1—8 to 15 inches; sandy clay loam
 Btknz2—15 to 24 inches; clay loam
 Btknz3—24 to 35 inches; clay loam
 Btknz4—35 to 49 inches; clay loam
 Btkn1—49 to 61 inches; sandy clay loam
 Btkn2—61 to 69 inches; loam
 Btkn3—69 to 80 inches; clay loam

Kisiwa

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley, terrace on river valley
Parent material: Loamy alluvium over 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 8.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Ponding hazard: Occasional

Depth to seasonal water saturation: About 0 to 0 inches

Runoff class: Very low

Ecological site: Saline Subirrigated (pe21-28)

Land capability (nonirrigated): 4s

Typical Profile:

Ap1—0 to 4 inches; loam
 Ap2—4 to 7 inches; loam
 Btkn—7 to 14 inches; clay loam
 Btknssg1—14 to 23 inches; clay loam
 Btknssg2—23 to 31 inches; clay
 Btknssg3—31 to 40 inches; clay
 Btknssg4—40 to 46 inches; loam
 Btkg—46 to 52 inches; fine sandy loam
 BCg—52 to 58 inches; fine sandy loam
 Cg—58 to 65 inches; stratified coarse sand to fine sandy loam
 2C—65 to 80 inches; stratified coarse sand

Minor Components

Saxman

Composition: About 10 percent

Slope: 0 to 2 percent

Drainage class: Moderately well drained

Ecological site: Sandy Lowland (pe21-28)

Darlow

Composition: About 5 percent

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Ecological site: Clay Pan (pe21-28)

General Considerations: This map unit is poorly suited to the commonly grown crops due to the sodic conditions, wetness, and potential flooding. Most areas are used for pasture or range. For areas that are cropped, The hazard of wind erosion is severe on the Abbyville and Saxman soils. Maintaining soil tilth and soil crusting are problems, but they can be improved by adding organic matter. Ephemeral gully erosion potential is high on the Abbyville and Kisiwa soils. The high sodium content, pH, soluble salts, water tables, and flooding limit the engineering of these soils.

1004—Albion sandy loam, 0 to 1 percent slopes

Map Unit Composition

Albion: 90 percent

Minor components: 10 percent

Component Descriptions

Albion

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderately rapid (About 2.00 in/hr)

Available water capacity: Moderate (About 7.3 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 9 inches; sandy loam
 Bt1—9 to 16 inches; sandy loam
 Bt2—16 to 27 inches; sandy loam
 BC—27 to 48 inches; loamy coarse sand
 C—48 to 80 inches; sand

Minor Components

Shellabarger

Composition: About 10 percent

Slope: 0 to 1 percent

Drainage class: Well drained

Ecological site: Sandy (pe21-28)

General Considerations: Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is slight. Wind erosion can be controlled maintaining plant residue through the use of a conservation tillage system. The moderate water holding capacity can hurt production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of this soil.

1011—Albion-Shellabarger sandy loams, 1 to 3 percent slopes

Map Unit Composition

Albion: 70 percent
Shellabarger: 30 percent

Component Descriptions

Albion

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Moderate (About 7.3 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 9 inches; sandy loam
Bt1—9 to 16 inches; sandy loam
Bt2—16 to 27 inches; sandy loam
BC—27 to 48 inches; loamy coarse sand
C—48 to 80 inches; sand

Shellabarger

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 3 percent
Drainage class: Well 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: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 7 inches; sandy loam
Bt1—7 to 11 inches; sandy clay loam

Bt2—11 to 19 inches; sandy clay loam
Bt3—19 to 33 inches; sandy loam
BC—33 to 47 inches; coarse sandy loam
C1—47 to 59 inches; loamy sand
C2—59 to 73 inches; sand
C3—73 to 80 inches; sand

Minor Components Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of these soils.

1057—Aquests, Frequently Ponded

Map Unit Composition

Aquests: 100 percent

Component Descriptions

Aquests

MLRA: -
Landform: Depression on paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Poorly 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

Ponding hazard: Frequent

Depth to seasonal water saturation: About 8 to 8 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 5w

Typical Profile:

Ap—0 to 3 inches; silty clay loam

Bg—3 to 8 inches; sandy clay loam

3Cg—8 to 12 inches; stratified gravelly coarse sand

3C—12 to 80 inches; stratified gravelly coarse sand to sand

General Considerations: Most areas are used for recreation or wildlife habitat. This map unit is unsuited to most agricultural and engineering uses due to the potential high water table.

1061—Arents, Earthen Dam

1062—Arents, loamy

Map Unit Composition

Arents, Landfill: 100 percent

General Considerations: This area has been used for the county landfill for several years. This area is poorly suited for cropland and most engineering practices. An area of accumulated waste products of human habitation that can be above or below natural ground level.

1070—Avans loam, 0 to 1 percent slopes

Map Unit Composition

Avans: 100 percent

Component Descriptions

Avans

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy 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: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Loamy Upland (pe21-28)

Land capability (nonirrigated): 1

Typical Profile:

Ap1—0 to 5 inches; loam

Ap2—5 to 10 inches; loam

BA—10 to 14 inches; loam

Bt1—14 to 19 inches; clay loam

Bt2—19 to 30 inches; clay loam

Bt3—30 to 43 inches; loam

Bt4—43 to 53 inches; loam

Btk1—53 to 65 inches; silt loam

Btk2—65 to 80 inches; loam

Minor Components

Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using a conservation tillage and residue management. This mapunit is moderately well suited for most engineering uses.

1071—Avans loam, 1 to 3 percent slopes

Map Unit Composition

Avans: 85 percent

Minor components: 15 percent

Component Descriptions

Avans*MLRA:* 79 - Great Bend Sand Plains*Landform:* Paleoterrace on river valley*Parent material:* Loamy alluvium*Slope:* 1 to 3 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 11.8 inches)*Shrink-swell potential:* Moderate (About 4.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Low*Ecological site:* Loamy Upland (pe21-28)*Land capability (nonirrigated):* 1*Typical Profile:*

Ap1—0 to 5 inches; loam

Ap2—5 to 10 inches; loam

BA—10 to 14 inches; silt loam

Bt1—14 to 19 inches; clay loam

Bt2—19 to 30 inches; loam

Bt3—30 to 43 inches; loam

Bt4—43 to 53 inches; silt loam

Btk1—53 to 65 inches; silt loam

Btk2—65 to 80 inches; loam

Minor Components**Ost***Composition:* About 15 percent*Slope:* 1 to 3 percent*Drainage class:* Well drained*Ecological site:* Loamy Upland (pe24-32)**Unnamed Wet Soils**

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water and wind erosion is moderate. Ephemeral gully erosion potential is moderate in most areas. This problem can be overcome by using a conservation tillage system, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses.

1072—Avans loam, 3 to 7 percent slopes**Map Unit Composition**

Avans: 85 percent

Minor components: 15 percent

Component Descriptions**Avans***MLRA:* 79 - Great Bend Sand Plains*Landform:* Paleoterrace on river valley*Parent material:* Loamy alluvium*Slope:* 3 to 7 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 11.8 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:* Loamy Upland (pe21-28)*Land capability (nonirrigated):* 2e*Typical Profile:*

Ap1—0 to 5 inches; loam

Ap2—5 to 10 inches; loam

BA—10 to 14 inches; silt loam

Bt1—14 to 19 inches; clay loam

Bt2—19 to 30 inches; loam

Bt3—30 to 43 inches; loam

Bt4—43 to 53 inches; silt loam

Btk1—53 to 65 inches; silt loam

Btk2—65 to 80 inches; loam

Minor Components**Ost***Composition:* About 15 percent*Slope:* 3 to 6 percent*Drainage class:* Well drained*Ecological site:* Loamy Upland (pe24-32)**Unnamed Wet Soils**

General Considerations: Most areas are used as cropland, but some are used for pasture or range. This mapunit is moderately well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. The hazard of water erosion is severe and wind erosion is moderate. Ephemeral gully erosion potential is also severe. This problem can be overcome by using a conservation tillage, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is

moderately well suited for most engineering uses.

1191—Blazefork silty clay loam, 0 to 1 percent slopes, rarely flooded

Map Unit Composition

Blazefork: 90 percent
Minor components: 10 percent

Component Descriptions

Blazefork

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: 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 9.3 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: About 48 to 48 inches

Runoff class: Very low

Ecological site: Clay Lowland (pe25-34)

Land capability (irrigated): 2s

Land capability (nonirrigated): 2w

Typical Profile:

Ap1—0 to 3 inches; silty clay loam

Ap2—3 to 7 inches; silty clay loam

Bt—7 to 14 inches; silty clay

Btss—14 to 22 inches; silty clay

Bt1—22 to 29 inches; silty clay

Bt2—29 to 34 inches; silty clay

Bt3—34 to 40 inches; silty clay

Bt4—40 to 48 inches; silty clay loam

2Bt5—48 to 61 inches; clay loam

2Bt6—61 to 80 inches; loam

Minor Components

Tobin

Composition: About 10 percent

Slope: 0 to 1 percent

Drainage class: Well drained

Ecological site: Loamy Lowland (pe25-34)

Unnamed Wet Soils

General Considerations: This map unit is well suited for the commonly grown crops such as wheat and grain sorghum. Most areas are cropped. The hazard of wind and water erosion is slight. The water table and high

shrink-swell potential limit the engineering uses of this soil.

1192—Blazefork-Kaskan complex, 0 to 1 percent slopes, rarely flooded

Map Unit Composition

Blazefork: 60 percent
Kaskan: 40 percent

Component Descriptions

Blazefork

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: 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 9.3 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: About 48 to 48 inches

Runoff class: Very low

Ecological site: Clay Lowland (pe25-34)

Land capability (irrigated): 2s

Land capability (nonirrigated): 2s

Typical Profile:

Ap1—0 to 3 inches; silty clay loam

Ap2—3 to 7 inches; silty clay loam

Bt—7 to 14 inches; silty clay

Btss—14 to 22 inches; silty clay

Bt1—22 to 29 inches; silty clay

Bt2—29 to 34 inches; silty clay

Bt3—34 to 40 inches; silty clay

Bt4—40 to 48 inches; silty clay loam

2Bt5—48 to 61 inches; clay loam

2Bt6—61 to 80 inches; loam

Kaskan

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 8.7 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Rare
Depth to seasonal water saturation: About 60 to 60 inches
Runoff class: Very low
Ecological site: Loamy Lowland (pe21-28)
Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 7 inches; loam
 A—7 to 17 inches; clay loam
 Bw1—17 to 24 inches; loam
 Bw2—24 to 35 inches; fine sandy loam
 BC—35 to 41 inches; loamy fine sand
 C1—41 to 47 inches; fine sand
 C2—47 to 66 inches; sand
 C3—66 to 80 inches; stratified gravelly coarse sand to sand

Minor Components
Unnamed Wet Soils

General Considerations: Most areas are in cropland, but some are in pasture or range. This mapunit is moderately-well suited for the most commonly grown crops. Wheat and grain sorghum are the predominant crops grown. The hazard for wind and water erosion is slight. The presence of water tables and high shrink-swell potential will limit some of the engineering uses for this mapunit.

1200—Buhler-Blazefork silty clay loams, 0 to 1 percent slopes, rarely flooded

Map Unit Composition

Buhler: 65 percent
 Blazefork: 30 percent
 Minor components: 5 percent

Component Descriptions

Buhler

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: 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 10.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: Rare

Depth to seasonal water saturation: About 60 to 60 inches
Runoff class: Very low
Ecological site: Saline Subirrigated (pe21-28)
Land capability (irrigated): 2w
Land capability (nonirrigated): 2w

Typical Profile:

Ay—0 to 3 inches; silty clay loam
 Anyz—3 to 8 inches; silty clay loam
 Eny—8 to 12 inches; silt loam
 Bt_{ny}1—12 to 16 inches; silt loam
 Bt_{ny}2—16 to 24 inches; clay loam
 Bt_{kny}—24 to 36 inches; silty clay loam
 Bt_{knyss}—36 to 42 inches; silty clay loam
 Bk_{nyss}—42 to 50 inches; clay
 2Bk_{ss}—50 to 58 inches; clay loam
 2C1—58 to 76 inches; fine sandy loam
 2C2—76 to 80 inches; loam

Blazefork

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: 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 9.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: About 48 to 48 inches
Runoff class: Very low
Ecological site: Clay Lowland (pe25-34)
Land capability (irrigated): 2s
Land capability (nonirrigated): 2s

Typical Profile:

Ap1—0 to 3 inches; silty clay loam
 Ap2—3 to 7 inches; silty clay loam
 Bt—7 to 14 inches; silty clay
 Bt_{ss}—14 to 22 inches; silty clay
 Bt1—22 to 29 inches; silty clay
 Bt2—29 to 34 inches; silty clay
 Bt3—34 to 40 inches; silty clay
 Bt4—40 to 48 inches; silty clay loam
 2Bt5—48 to 61 inches; clay loam
 2Bt6—61 to 80 inches; loam

Minor Components

Tobin

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

Unnamed Wet Soils

General Considerations: This map unit is somewhat poorly suited for the commonly grown crops such as wheat and grain sorghum, due to the sodic conditions and soluble salts. Most areas are cropped. The hazard of wind and water erosion is slight. Maintaining soil tilth and soil surface crusting are problems on the Buhler soils, but they can be improved by adding organic matter. the high sodium content, soluble salts, water tables, and high shrink-swell capacity limit most engineering uses, particularly in the area of the Buhler soils.

1324—Carway And Carbika Soils, 0 to 1 percent slopes

Map Unit Composition

Carway: 50 percent
Carbika: 30 percent
Minor components: 20 percent

Component Descriptions

Carway

MLRA: 79 - Great Bend Sand Plains
Landform: Interdune on depression on paleoterrace on river valley
Parent material: Loamy eolian deposits over 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 9.0 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Ponding hazard: Frequent
Depth to seasonal water saturation: About 0 to 0 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 7 inches; fine sandy loam
Bt1—7 to 10 inches; sandy clay loam
Bt2—10 to 15 inches; sandy clay loam
Bt3—15 to 22 inches; fine sandy loam
Bt4—22 to 35 inches; fine sandy loam
2Btb1—35 to 40 inches; clay loam
2Btb2—40 to 54 inches; clay loam
2Btb3—54 to 63 inches; clay loam
2Btb4—63 to 72 inches; clay loam

2Btkb—72 to 80 inches; clay loam

Carbika

MLRA: 79 - Great Bend Sand Plains
Landform: Interdune on depression on paleoterrace on river valley
Parent material: Loamy eolian deposits over alluvium
Slope: 0 to 1 percent
Drainage class: Poorly drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 9.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Ponding hazard: Frequent
Depth to seasonal water saturation: About 0 to 0 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 2w

Typical Profile:

A—0 to 11 inches; silt loam
Bt1—11 to 15 inches; clay
Bt2—15 to 22 inches; clay loam
Bt3—22 to 34 inches; clay loam
Bt4—34 to 41 inches; clay loam
Bt5—41 to 60 inches; clay loam
Btk—60 to 80 inches; clay loam

Minor Components

Solvay

Composition: About 20 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland but, some are in pasture or range. This mapunit is poorly suited for the most commonly grown crops. Wheat and grain sorghum are the predominant crops. The hazard for wind and water erosion is slight. The presence of water tables and potential for high shrink-swell limit most engineering uses for this mapunit.

1357—Carway-Dillhut-Solvay complex, 0 to 2 percent slopes

Map Unit Composition

Carway: 40 percent
Solvay: 30 percent

Dillhut: 30 percent

Component Descriptions

Carway

MLRA: 79 - Great Bend Sand Plains

Landform: Depression on interdune on paleoterrace on river valley

Parent material: Loamy eolian deposits over alluvium

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 8.6 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Ponding hazard: Frequent

Depth to seasonal water saturation: About 0 to 0 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 7 inches; loamy fine sand
Bt1—7 to 10 inches; sandy clay loam
Bt2—10 to 15 inches; sandy clay loam
Bt3—15 to 22 inches; fine sandy loam
Bt4—22 to 35 inches; fine sandy loam
2Btb1—35 to 40 inches; clay loam
2Btb2—40 to 54 inches; clay loam
2Btb3—54 to 63 inches; clay loam
2Btb4—63 to 72 inches; clay loam
2Btkb—72 to 80 inches; clay loam

Solvay

MLRA: 79 - Great Bend Sand Plains

Landform: Interdune on paleoterrace on river valley

Parent material: Loamy eolian deposits over alluvium

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: High (About 9.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

A—0 to 5 inches; loamy fine sand
2Bt1—5 to 14 inches; fine sandy loam
2Bt2—14 to 23 inches; fine sandy loam
2Bt3—23 to 37 inches; fine sandy loam
2BC1—37 to 58 inches; fine sandy loam
2BC2—58 to 76 inches; loamy fine sand
2BC3—76 to 80 inches; loamy fine sand

Dillhut

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Eolian deposits over alluvium

Slope: 0 to 2 percent

Drainage class: Moderately well drained

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

Available water capacity: Moderate (About 6.1 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 18 to 18 inches

Runoff class: Very low

Ecological site: Sands (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 10 inches; fine sand
C—10 to 29 inches; fine sand
2Btb1—29 to 35 inches; fine sandy loam
2Btb2—35 to 43 inches; fine sandy loam
3Btb3—43 to 54 inches; clay loam
3Btb4—54 to 66 inches; clay loam
3Btkb—66 to 80 inches; clay loam

Minor Components

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used for cropland. This mapunit is poorly suited for the most commonly grown crops. Wheat, grain sorghum and alfalfa are the predominant crops. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. The presence of high water tables will limit most engineering uses for this mapunit.

1359—Clark-Ost loams, 3 to 7 percent slopes

Map Unit Composition

Clark: 70 percent

Ost: 30 percent

Component Descriptions

Clark

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 3 to 7 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: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Limy Upland (pe21-28)

Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 11 inches; loam

Bw—11 to 16 inches; loam

Bk1—16 to 28 inches; loam

Bk2—28 to 45 inches; fine sandy loam

BCK1—45 to 65 inches; fine sandy loam

Ck2—65 to 80 inches; very fine sandy loam

Ost

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 3 to 6 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: Medium

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 8 inches; loam

Bt1—8 to 12 inches; loam

Bt2—12 to 18 inches; loam

Bk1—18 to 23 inches; clay loam

Bk2—23 to 38 inches; clay loam

BCK—38 to 54 inches; loam

C—54 to 80 inches; loam

Minor Components

Unnamed Wet Soils

General Considerations: Most areas are used as pasture or rangeland. Some areas are used as cropland. The hazard of wind and water erosion is moderately severe. This mapunit is well suited for most engineering practices. The slopes and amount of calcium carbonates can limit some practices.

1428—Crete silt loam, 0 to 1 percent slopes

Map Unit Composition

Crete: 100 percent

Component Descriptions

Crete

MLRA: 75 - Central Loess Plains

Landform: Upland

Parent material: Silty and clayey loess

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 10.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Clay Upland (pe25-34)

Land capability (irrigated): 2s

Land capability (nonirrigated): 2s

Typical Profile:

Ap—0 to 5 inches; silt loam

BA—5 to 9 inches; silty clay loam

Bt1—9 to 19 inches; silty clay loam

Bt2—19 to 27 inches; silty clay

Bt3—27 to 38 inches; silty clay

BC—38 to 48 inches; silty clay loam

C—48 to 80 inches; silty clay loam

Minor Components Unnamed Wet Soils

Phase: Clayey, Drainageway

Unnamed Wet Soils

Phase: Clayey, Depression

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using a conservation tillage and residue management. This mapunit is moderately well suited for most engineering uses.

1429—Crete silt loam, 1 to 3 percent slopes

Map Unit Composition

Crete: 100 percent

Component Descriptions

Crete

MLRA: 75 - Central Loess Plains

Landform: Hillslope on upland

Parent material: Silty and clayey loess

Slope: 1 to 3 percent

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 10.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Clay Upland (pe25-34)

Land capability (irrigated): 2e

Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 5 inches; silt loam
BA—5 to 9 inches; silty clay loam
Bt1—9 to 19 inches; silty clay
Bt2—19 to 27 inches; silty clay
Bt3—27 to 38 inches; silty clay
BC—38 to 48 inches; silty clay loam
C—48 to 80 inches; silt loam

Minor Components Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water and wind erosion is moderate. Ephemeral gully erosion potential is moderate in most areas. This problem can be overcome by using a conservation tillage, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses. The high clay content and shrink-swell may limit some practices.

1553—Darlow-Elmer complex, 0 to 2 percent slopes

Map Unit Composition

Darlow: 70 percent

Elmer: 20 percent

Minor components: 10 percent

Component Descriptions

Darlow

MLRA: 79 - Great Bend Sand Plains

Landform: Terrace on river valley

Parent material: Loamy alluvium

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 7.6 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Clay Pan (pe21-28)

Land capability (irrigated): 4s

Land capability (nonirrigated): 4s

Typical Profile:

Ap1—0 to 5 inches; loam
Ap2—5 to 8 inches; loam
Btn—8 to 14 inches; loam
Bt1n—14 to 20 inches; clay loam
Btknyz—20 to 26 inches; loam

Btzn1—26 to 33 inches; loam
 Btzn2—33 to 44 inches; loam
 Btn1—44 to 53 inches; loam
 Btn2—53 to 68 inches; loam
 2Btn3—68 to 80 inches; sandy loam

Elmer

MLRA: 79 - Great Bend Sand Plains

Landform: Terrace on river valley

Parent material: Loamy alluvium

Slope: 0 to 2 percent

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.1 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Loamy Terrace (pe21-28)

Land capability (irrigated): 3s

Land capability (nonirrigated): 3s

Typical Profile:

Ap1—0 to 6 inches; fine sandy loam
 Ap2—6 to 9 inches; fine sandy loam
 AB—9 to 19 inches; fine sandy loam
 Btn1—19 to 26 inches; fine sandy loam
 Btn2—26 to 37 inches; fine sandy loam
 Btnk1—37 to 43 inches; loam
 Btnk2—43 to 51 inches; clay loam
 Btnk3—51 to 61 inches; fine sandy loam
 Btn1'—61 to 72 inches; fine sandy loam
 Btn2'—72 to 80 inches; fine sandy loam

Minor Components

Punkin

Composition: About 10 percent

Slope: 0 to 2 percent

Drainage class: Moderately well drained

Ecological site: Clay Pan (pe21-28)

Carway

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland, but some are in pasture or range. This mapunit is moderately well suited for the most commonly grown crops. Wheat and grain sorghum are the major crops. The hazard for wind erosion is severe and water erosion is slight. Maintaining soil tilth and

soil crusting are problems but they can be improved by adding organic matter. The high sodium content, pH, and soluble salts can limit the engineering uses of this mapunit.

1554—Dillhut fine sand, 1 to 3 percent slopes

Map Unit Composition

Dillhut: 70 percent

Minor components: 30 percent

Component Descriptions

Dillhut

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Eolian deposits over alluvium

Slope: 1 to 3 percent

Drainage class: Moderately well drained

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

Available water capacity: Moderate (About 6.1 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 18 to 18 inches

Runoff class: Very low

Ecological site: Sands (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 10 inches; fine sand
 C—10 to 29 inches; fine sand
 2Btb1—29 to 35 inches; fine sandy loam
 2Btb2—35 to 43 inches; fine sandy loam
 3Btb3—43 to 54 inches; clay loam
 3Btb4—54 to 66 inches; clay loam
 3Btkb—66 to 80 inches; clay loam

Minor Components

Dillwyn

Composition: About 30 percent

Slope: 1 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in pasture or range. Some areas are in cropland. This mapunit is poorly suited for most commonly grown crops. The hazard for wind erosion is severe and water erosion

is slight. The presence of water tables and sandy textures limits many of the engineering uses of this soil.

1555—Dillhut-Plev complex, 0 to 2 percent slopes

Map Unit Composition

Dillhut: 35 percent
Plev: 35 percent
Minor components: 30 percent

Component Descriptions

Dillhut

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Eolian deposits over alluvium
Slope: 0 to 2 percent
Drainage class: Moderately well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 4 inches; fine sand
AC—4 to 9 inches; fine sand
C1—9 to 18 inches; fine sand
C2—18 to 26 inches; fine sand
2Btb1—26 to 41 inches; fine sandy loam
2Btb2—41 to 55 inches; fine sandy loam
2BCb1—55 to 65 inches; fine sandy loam
2BCb2—65 to 70 inches; fine sandy loam
2Cg—70 to 80 inches; fine sandy loam

Plev

MLRA: 79 - Great Bend Sand Plains
Landform: Interdune on paleoterrace on river valley, depression on paleoterrace on river valley
Parent material: Sandy eolian deposits over loamy alluvium
Slope: 0 to 1 percent
Drainage class: Poorly drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 3.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 6 to 6 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 5w

Typical Profile:

A1—0 to 4 inches; loamy fine sand
A2—4 to 12 inches; fine sand
Cg1—12 to 35 inches; fine sand
Cg2—35 to 46 inches; fine sand
2Btgb1—46 to 57 inches; fine sandy loam
2Btgb2—57 to 75 inches; fine sandy loam
2BCb—75 to 80 inches; loamy fine sand

Minor Components

Dillwyn

Composition: About 20 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Warnut

Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in pasture or range. This mapunit is poorly suited for most commonly grown crops. The hazard for wind erosion is severe and water erosion is slight. The presence of water tables and sandy textures limits many of the engineering uses of this soil.

1556—Dillhut-Solvay complex, 0 to 3 percent slopes

Map Unit Composition

Dillhut: 30 percent
Solvay: 30 percent
Minor components: 40 percent

Component Descriptions

Dillhut

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Eolian deposits over alluvium
Slope: 0 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 6.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 4 inches; fine sand
 AC—4 to 9 inches; fine sand
 C1—9 to 18 inches; fine sand
 C2—18 to 26 inches; fine sand
 2Btb1—26 to 41 inches; fine sandy loam
 2Btb2—41 to 55 inches; fine sandy loam
 2BCb1—55 to 65 inches; fine sandy loam
 2BCb2—65 to 70 inches; fine sandy loam
 2Cg—70 to 80 inches; fine sandy loam

Solvay

MLRA: 79 - Great Bend Sand Plains
Landform: Interdune on paleoterrace on river valley
Parent material: Loamy eolian deposits over alluvium
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 9.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 2e

Typical Profile:

A—0 to 5 inches; fine sandy loam
 2Bt1—5 to 14 inches; fine sandy loam
 2Bt2—14 to 23 inches; fine sandy loam
 2Bt3—23 to 37 inches; fine sandy loam
 2BC1—37 to 58 inches; fine sandy loam
 2BC2—58 to 76 inches; loamy fine sand
 2BC3—76 to 80 inches; loamy fine sand

Minor Components

Dillwyn

Composition: About 25 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Carway

Composition: About 15 percent

Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in pasture or range. This mapunit is poorly suited for most commonly grown crops. The hazard for wind erosion is severe and water erosion is slight. The presence of water tables and sandy textures limits many of the engineering uses of this soil.

1725—Farnum And Funmar loams, 0 to 1 percent slopes

Map Unit Composition

Funmar: 40 percent
 Farnum: 40 percent
 Minor components: 20 percent

Component Descriptions

Funmar

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium over alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe21-28)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 6 inches; loam
 A—6 to 12 inches; loam
 Bt1—12 to 17 inches; loam
 Bt2—17 to 26 inches; clay loam
 Bt3—26 to 32 inches; loam
 2Ab—32 to 38 inches; silty clay loam
 2Btb—38 to 54 inches; silty clay loam
 2Btkb1—54 to 66 inches; silty clay loam
 2Btkb2—66 to 80 inches; silty clay loam

Farnum

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Alluvium

Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe21-28)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 5 inches; loam
 A—5 to 15 inches; loam
 Bt1—15 to 21 inches; loam
 Bt2—21 to 34 inches; sandy clay loam
 Bt3—34 to 48 inches; loam
 Bt4—48 to 61 inches; clay loam
 Bt5—61 to 73 inches; clay loam
 Btk—73 to 80 inches; loam

Minor Components

Naron

Composition: About 20 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

Carway

Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Carbika

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for the most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the predominant crops grown. The hazard for wind and water erosion is slight. The potential for high shrink-swell may limit some of the engineering practices of this mapunit.

1727—Funmar-Taver loams, 0 to 2 percent slopes

Map Unit Composition

Funmar: 55 percent
 Taver: 45 percent

Component Descriptions

Funmar

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium over alluvium
Slope: 0 to 2 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: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe21-28)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 6 inches; loam
 A—6 to 12 inches; loam
 Bt1—12 to 17 inches; loam
 Bt2—17 to 26 inches; clay loam
 Bt3—26 to 32 inches; loam
 2Ab—32 to 38 inches; silty clay loam
 2Btb—38 to 54 inches; silty clay loam
 2Btkb1—54 to 66 inches; silty clay loam
 2Btkb2—66 to 80 inches; silty clay loam

Taver

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 9.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Clay Upland (pe21-28)
Land capability (nonirrigated): 2s

Typical Profile:

Ap—0 to 7 inches; loam
 2Bt1—7 to 17 inches; silty clay loam
 2Bt2—17 to 33 inches; silty clay

2Btk1—33 to 53 inches; silty clay loam
 2Btk2—53 to 64 inches; clay loam
 3Bt—64 to 80 inches; sandy clay loam

Minor Components

Carbika

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for the most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the predominant crops grown. The hazard for wind and water erosion is slight. The potential for high shrink-swell may limit some of the engineering practices of this mapunit.

1804—Geary silt loam, 1 to 3 percent slopes

Map Unit Composition

Geary: 100 percent

Component Descriptions

Geary

MLRA: 75 - Central Loess Plains
Landform: Hillslope on upland
Parent material: Loess
Slope: 1 to 3 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 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe21-28)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 6 inches; silt loam
 BA—6 to 14 inches; silt loam
 Bt1—14 to 25 inches; silty clay loam
 Bt2—25 to 37 inches; silty clay loam
 BC—37 to 51 inches; silty clay loam
 C—51 to 80 inches; silty clay loam

Minor Components Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water and wind erosion is moderate. Ephemeral gully erosion potential is moderate in most areas. This problem can be overcome by using a conservation tillage, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses. The high clay content and shrink swell may limit some practices.

1807—Geary silty clay loam, 3 to 7 percent slopes, moderately eroded

Map Unit Composition

Geary: 100 percent

Component Descriptions

Geary

MLRA: 75 - Central Loess Plains
Landform: Hillslope on upland
Parent material: Loess
Slope: 3 to 7 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 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe25-34)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 5 inches; silty clay loam
 Bt1—5 to 19 inches; silty clay loam
 Bt2—19 to 43 inches; silty clay loam
 BC—43 to 50 inches; silt loam
 C—50 to 80 inches; silt loam

Minor Components Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some are used for pasture or range. This mapunit is moderately well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. The hazard of water erosion is severe and wind erosion is moderate. Ephemeral gully erosion potential is also severe. This problem can be overcome by using a conservation tillage, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses, but is limited by high clay content and potential for shrink swell.

1985—Hayes fine sandy loam, 1 to 5 percent slopes

Map Unit Composition

Hayes: 60 percent
Minor components: 40 percent

Component Descriptions

Hayes

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Loamy eolian deposits over clayey alluvium
Slope: 1 to 5 percent
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 8.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sandy (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sandy loam
Bt1—8 to 14 inches; fine sandy loam
Bt2—14 to 23 inches; fine sandy loam
Bt3—23 to 34 inches; fine sandy loam
Bt4—34 to 42 inches; fine sandy loam
Ab—42 to 47 inches; fine sandy loam

2Btb1—47 to 56 inches; sandy clay loam
2Btb2—56 to 69 inches; silty clay
2Btb3—69 to 80 inches; clay loam

Minor Components

Attica

Composition: About 25 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

Saltcreek

Composition: About 15 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

General Considerations: Most areas are used for cropland, but some areas are in pasture or range. This mapunit is moderately well suited for most commonly grown crops. Wheat, grain sorghum, and irrigated corn are the predominant crops. The hazard for wind erosion is moderate and water erosion is slight. The high shrink-swell potential may limit some of the engineering uses of the soil.

1986—Hayes-Solvay loamy fine sands, 0 to 5 percent slopes

Map Unit Composition

Hayes: 55 percent
Solvay: 20 percent
Minor components: 25 percent

Component Descriptions

Hayes

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Loamy eolian deposits over clayey alluvium
Slope: 0 to 5 percent
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 7.8 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sandy (pe21-28)
Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; loamy fine sand
 Bt1—8 to 14 inches; fine sandy loam
 Bt2—14 to 23 inches; fine sandy loam
 Bt3—23 to 34 inches; fine sandy loam
 Bt4—34 to 42 inches; fine sandy loam
 Ab—42 to 47 inches; fine sandy loam
 2Btb1—47 to 56 inches; sandy clay loam
 2Btb2—56 to 69 inches; silty clay
 2Btb3—69 to 80 inches; clay loam

Solvay

MLRA: 79 - Great Bend Sand Plains

Landform: Interdune on paleoterrace on river valley

Parent material: Loamy eolian deposits over alluvium

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 9.0 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

A—0 to 5 inches; loamy fine sand
 2Bt1—5 to 14 inches; fine sandy loam
 2Bt2—14 to 23 inches; fine sandy loam
 2Bt3—23 to 37 inches; fine sandy loam
 2BC1—37 to 58 inches; fine sandy loam
 2BC2—58 to 76 inches; loamy fine sand
 2BC3—76 to 80 inches; loamy fine sand

Minor Components

Carway

Composition: About 15 percent

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Farnum

Composition: About 10 percent

Slope: 0 to 1 percent

Drainage class: Well drained

Ecological site: Loamy Upland (pe21-28)

General Considerations: Most areas are used for cropland, but some areas are in pasture or range. This mapunit is somewhat poorly suited for most commonly grown crops. Wheat and grain sorghum are the

predominant crops grown. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. The high water tables, high shrink-swell potential, and sandy textures will limit most engineering uses of this mapunit.

1987—Hayes-Turon complex, 0 to 5 percent slopes

Map Unit Composition

Hayes: 40 percent

Turon: 35 percent

Minor components: 25 percent

Component Descriptions

Hayes

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Loamy eolian deposits over clayey alluvium

Slope: 0 to 5 percent

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: Moderate (About 7.8 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; loamy fine sand
 Bt1—8 to 14 inches; fine sandy loam
 Bt2—14 to 23 inches; fine sandy loam
 Bt3—23 to 34 inches; fine sandy loam
 Bt4—34 to 42 inches; fine sandy loam
 Ab—42 to 47 inches; fine sandy loam
 2Btb1—47 to 56 inches; sandy clay loam
 2Btb2—56 to 69 inches; silty clay
 2Btb3—69 to 80 inches; clay loam

Turon

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits over alluvium

Slope: 0 to 5 percent

Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 7.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sand
 Bt—8 to 28 inches; loamy fine sand
 E&Bt—28 to 40 inches; stratified loamy fine sand to fine sandy loam
 2Btb1—40 to 58 inches; silty clay
 2Btb2—58 to 75 inches; silty clay
 2Btb3—75 to 80 inches; silty clay

Minor Components

Naron

Composition: About 15 percent
Slope: 0 to 2 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

Solvay

Composition: About 10 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Carway

Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for cropland, but some areas are in pasture or range. This mapunit is somewhat poorly suited for most commonly grown crops. Wheat and grain sorghum are the predominant crops grown. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. The high shrink-swell potential, and sandy textures will limit most engineering uses of this mapunit.

2204—Jamash-Piedmont clay loams, 0 to 1 percent slopes

Map Unit Composition

Jamash: 50 percent
 Piedmont: 50 percent

Component Descriptions

Jamash

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, unspecified
Slope: 0 to 1 percent
Depth to restrictive feature: 12 to 15 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 2.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Shallow Prairie (pe24-32)
Land capability (nonirrigated): 4e

Typical Profile:

Ap—0 to 4 inches; clay loam
 Bw—4 to 11 inches; silty clay loam
 BC—11 to 15 inches; silty clay loam
 Cr1—15 to 28 inches; weathered bedrock
 Cr2—28 to 80 inches; weathered bedrock

Piedmont

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, clayey
Slope: 0 to 1 percent
Depth to restrictive feature: 32 to 36 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 5.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Clay Upland (pe24-32)

Land capability (nonirrigated): 2e

Typical Profile:

Ap1—0 to 4 inches; clay loam
 Ap2—4 to 7 inches; clay loam
 Bt1—7 to 13 inches; clay
 Bt2—13 to 20 inches; clay
 Btk—20 to 24 inches; silty clay
 BCk—24 to 32 inches; silty clay
 Cr—32 to 80 inches; weathered bedrock

**Minor Components
 Unnamed Wet Soils**

General Considerations: Most areas are used as cropland, but some areas are used for pasture or range. This map unit is poorly suited for the commonly grown crops such as wheat and grain sorghum. The hazard of wind erosion is severe and water erosion is slight. Wind erosion can be controlled through conservation tillage practices. The shallow depth to bedrock and slow permeability can limit some engineering uses of this soil.

**2205—Jamash-Piedmont clay loams, 1 to 3 percent slopes
 Map Unit Composition**

Jamash: 60 percent
 Piedmont: 40 percent

Component Descriptions

Jamash

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, unspecified
Slope: 1 to 3 percent
Depth to restrictive feature: 12 to 15 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 2.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Shallow Prairie (pe24-32)
Land capability (nonirrigated): 4e

Typical Profile:

Ap—0 to 4 inches; clay loam
 Bw—4 to 11 inches; silty clay loam
 BC—11 to 15 inches; silty clay loam
 Cr1—15 to 28 inches; weathered bedrock
 Cr2—28 to 80 inches; weathered bedrock

Piedmont

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, clayey
Slope: 1 to 3 percent
Depth to restrictive feature: 32 to 36 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 5.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Clay Upland (pe24-32)
Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; clay loam
 Ap2—4 to 7 inches; clay loam
 Bt1—7 to 13 inches; clay
 Bt2—13 to 20 inches; clay
 Btk—20 to 24 inches; silty clay
 BCk—24 to 32 inches; silty clay
 Cr—32 to 80 inches; weathered bedrock

**Minor Components
 Unnamed Wet Soils**

General Considerations: Some areas are used as cropland, but most areas are used for pasture or range. Many areas of this map unit are also in the Conservation Reserve Program. This map unit is poorly suited for the commonly grown crops such as wheat and grain sorghum. The hazard of wind erosion is severe and water erosion is slight. Wind erosion can be controlled through conservation tillage practices. The shallow depth to bedrock and slow permeability can limit some engineering uses of this soil.

2206—Jamash-Piedmont clay loams, 3 to 12 percent slopes

Map Unit Composition

Jamash: 60 percent
Piedmont: 40 percent

Component Descriptions

Jamash

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, unspecified
Slope: 3 to 12 percent
Depth to restrictive feature: 12 to 15 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 2.5 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: Shallow Prairie (pe24-32)
Land capability (nonirrigated): 6e

Typical Profile:

Ap—0 to 4 inches; clay loam
Bw—4 to 11 inches; silty clay loam
BC—11 to 15 inches; silty clay loam
Cr1—15 to 28 inches; weathered bedrock
Cr2—28 to 80 inches; weathered bedrock

Piedmont

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, clayey
Slope: 3 to 12 percent
Depth to restrictive feature: 32 to 36 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 5.4 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: Clay Upland (pe24-32)

Land capability (nonirrigated): 4e

Typical Profile:

Ap1—0 to 4 inches; clay loam
Ap2—4 to 7 inches; clay loam
Bt1—7 to 13 inches; clay
Bt2—13 to 20 inches; clay
Btk—20 to 24 inches; silty clay
BCk—24 to 32 inches; silty clay
Cr—32 to 80 inches; weathered bedrock

Minor Components Unnamed Wet Soils

General Considerations: Most areas are used as pasture or range, but some areas are used for cropland. This map unit is poorly suited for the commonly grown crops such as wheat and grain sorghum. The hazard of wind and water erosion is severe. The shallow depth to bedrock, slow permeability, and steep slopes severely limit most engineering uses of this soil.

2207—Jamash clay loam, 0 to 8 percent slopes

Map Unit Composition

Jamash: 80 percent
Minor components: 20 percent

Component Descriptions

Jamash

MLRA: 80A - Central Rolling Red Prairies
Landform: Pediment on upland
Parent material: Residuum weathered from shale, unspecified
Slope: 0 to 8 percent
Depth to restrictive feature: 12 to 15 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 2.5 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Prairie (pe24-32)
Land capability (nonirrigated): 6e

Typical Profile:

Ap—0 to 4 inches; clay loam
 Bw—4 to 11 inches; silty clay loam
 BC—11 to 15 inches; silty clay loam
 Cr1—15 to 28 inches; weathered bedrock
 Cr2—28 to 80 inches; weathered bedrock

Minor Components

Piedmont

Composition: About 20 percent
Slope: 0 to 8 percent
Depth to restrictive feature: 32 to 36 inches
 to bedrock (paralithic)
Drainage class: Well drained
Ecological site: Clay Upland (pe24-32)

Unnamed Wet Soils

General Considerations: Most areas are used for pasture or range. This map unit is poorly suited for the commonly grown crops such as wheat and grain sorghum. The hazard of wind erosion is severe and water erosion is moderately severe. The shallow depth to bedrock and slow permeability can limit most engineering uses of this soil.

2381—Kanza-Ninnescah sandy loams, 0 to 2 percent slopes, Commonly flooded

Map Unit Composition

Kanza: 50 percent
 Ninnescah: 50 percent

Component Descriptions

Kanza

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Alluvium
Slope: 0 to 2 percent
Drainage class: Poorly drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: About 0 to 36 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 5w

Typical Profile:

A1—0 to 4 inches; sandy loam
 A2—4 to 9 inches; loamy fine sand
 AC—9 to 17 inches; loamy fine sand
 C1—17 to 33 inches; loamy fine sand
 C2—33 to 80 inches; sand

Ninnescah

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium
Slope: 0 to 2 percent
Drainage class: Poorly drained
Slowest permeability: Moderately rapid (About 1.98 in/hr)
Available water capacity: Moderate (About 7.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 24 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 5w

Typical Profile:

Ak1—0 to 6 inches; sandy loam
 Ak2—6 to 14 inches; sandy loam
 Ak3—14 to 19 inches; sandy loam
 Bkg1—19 to 30 inches; sandy loam
 Bkg2—30 to 37 inches; sandy loam
 Cg1—37 to 52 inches; sandy loam
 Cg2—52 to 80 inches; loamy sand

General Considerations: Most areas are in pasture or range. This map unit is poorly suited for the most commonly grown crops. The hazard for wind and water erosion is slight. The water tables, flooding, and depth to sand limit most engineering uses for this mapunit.

2390—Kaskan loam, 0 to 1 percent slopes, rarely flooded

Map Unit Composition

Kaskan: 85 percent
 Minor components: 15 percent

Component Descriptions

Kaskan

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent

Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 8.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: About 60 to 60 inches
Runoff class: Very low
Ecological site: Loamy Lowland (pe21-28)
Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 7 inches; loam
 A—7 to 17 inches; clay loam
 Bw1—17 to 24 inches; loam
 Bw2—24 to 35 inches; fine sandy loam
 BC—35 to 41 inches; loamy fine sand
 C1—41 to 47 inches; fine sand
 C2—47 to 66 inches; sand
 C3—66 to 80 inches; stratified gravelly coarse sand to sand

Minor Components

Tobin

Composition: About 15 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe25-34)

General Considerations: Most areas are in cropland, but some are in pasture or range. This map unit is moderately well suited for most commonly grown crops. Wheat and grain sorghum are the predominant crops. The hazard for wind and water erosion is slight. The water table and rare chance of flooding may limit some of the engineering practices.

2391—Kaskan silty clay loam, 0 to 1 percent slopes, Frequently flooded, channeled

Map Unit Composition

Kaskan: 75 percent
 Minor components: 25 percent

Component Descriptions

Kaskan

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley

Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: Moderate (About 7.8 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: About 60 to 60 inches
Runoff class: Very low
Ecological site: Loamy Lowland (pe21-28)
Land capability (nonirrigated): 5w

Typical Profile:

A1—0 to 9 inches; silty clay loam
 A2—9 to 13 inches; silty clay loam
 Bw1—13 to 17 inches; fine sandy loam
 Bw2—17 to 21 inches; fine sandy loam
 Bw3—21 to 27 inches; fine sandy loam
 C1—27 to 43 inches; stratified fine sand to loamy fine sand
 C2—43 to 57 inches; stratified fine sand to fine sandy loam
 C3—57 to 80 inches; stratified fine sand to fine sandy loam

Minor Components

Tobin

Composition: About 25 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Lowland (pe25-34)

Unnamed Wet Soils

General Considerations: Most areas are in pasture or range. This map unit is poorly suited for most commonly grown crops. The hazard for wind and water erosion is slight. The water table and occasional chance of flooding may limit some of the engineering practices.

2395—Kisiwa loam, 0 to 1 percent slopes

Map Unit Composition

Kisiwa: 90 percent
 Minor components: 10 percent

Component Descriptions

Kisiwa

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley, terrace on river valley

Parent material: Loamy alluvium over 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 8.7 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Ponding hazard: Occasional

Depth to seasonal water saturation: About 0 to 0 inches

Runoff class: Very low

Ecological site: Saline Subirrigated (pe21-28)

Land capability (nonirrigated): 4s

Typical Profile:

Ap1—0 to 4 inches; loam

Ap2—4 to 7 inches; loam

Btkn—7 to 14 inches; clay loam

Btknssg1—14 to 23 inches; clay loam

Btknssg2—23 to 31 inches; clay

Btknssg3—31 to 40 inches; clay

Btknssg4—40 to 46 inches; loam

Btkg—46 to 52 inches; fine sandy loam

BCg—52 to 58 inches; fine sandy loam

Cg—58 to 65 inches; stratified coarse sand to fine sandy loam

2C—65 to 80 inches; stratified coarse sand

Minor Components

Punkin

Composition: About 10 percent

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Clay Pan (pe21-28)

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: This map unit is poorly suited to the commonly grown crops due to the sodic conditions and wetness. Most areas are used for pasture or range. For areas that are cropped, the hazard of wind or water erosion is slight. Maintaining soil tilth and soil crusting are problems, but they can be improved by adding organic matter. The high sodium content, pH, soluble salts, high shrink-swell, and water table limit the engineering uses of these soils.

2509—Ladysmith silty clay loam, 0 to 1 percent slopes

Map Unit Composition

Ladysmith: 100 percent

Component Descriptions

Ladysmith

MLRA: 75 - Central Loess Plains

Landform: Paleoterrace on upland

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 8.9 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 30 to 30 inches

Runoff class: Very low

Ecological site: Clay Upland (pe25-34)

Land capability (nonirrigated): 2s

Typical Profile:

Ap—0 to 8 inches; silty clay loam

Bt1—8 to 21 inches; silty clay

Bt2—21 to 31 inches; silty clay

BC—31 to 45 inches; silty clay

C—45 to 80 inches; silty clay loam

Minor Components

Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using a conservation tillage and residue management. This mapunit is somewhat poorly suited for most engineering uses, due to the high water table, and high shrink-swell potential.

2556—Langdon fine sand, 0 to 15 percent slopes

Map Unit Composition

Langdon: 50 percent
Minor components: 50 percent

Component Descriptions

Langdon

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits

Slope: 0 to 15 percent

Drainage class: Somewhat excessively drained

Slowest permeability: Rapid (About 6.00 in/hr)

Available water capacity: Low (About 3.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Ponding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Choppy Sands (pe21-28)

Land capability (nonirrigated): 6e

Typical Profile:

A—0 to 8 inches; fine sand

E&Bt—8 to 47 inches; stratified sand to loamy sand

C—47 to 64 inches; fine sand

E&Btb—64 to 80 inches; stratified sand to loamy sand

Minor Components

Turon

Composition: About 25 percent

Slope: 0 to 10 percent

Drainage class: Well drained

Ecological site: Sands (pe21-28)

Tivin

Composition: About 25 percent

Slope: 1 to 15 percent

Drainage class: Somewhat excessively drained

Ecological site: Choppy Sands (pe21-28)

Carway

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Warnut

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in pasture or range. This mapunit is poorly suited for the most commonly grown crops. The hazard for wind erosion is severe and water erosion is moderate. The sandy textures limit most engineering practices.

2587—Imano clay loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Composition

Imano: 85 percent
Minor components: 15 percent

Component Descriptions

Imano

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium over sandy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 6.6 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Occasional

Ponding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 3w

Typical Profile:

Ap—0 to 10 inches; clay loam

Bw—10 to 25 inches; loam

2C1—25 to 55 inches; stratified fine sand to sand

2C2—55 to 80 inches; coarse sand

Minor Components

Willowbrook

Composition: About 15 percent

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Kanza

Slope: 0 to 2 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. Wheat and alfalfa are the predominant crops. The hazard for water erosion is slight and wind erosion is severe. Wind erosion can be controlled by conservation tillage and residue management. Depth to sand and water tables can limit most engineering uses for this map unit.

2588—Longford silty clay loam, 3 to 7 percent slopes, moderately eroded

Map Unit Composition

Longford: 90 percent

Minor components: 10 percent

Component Descriptions

Longford

MLRA: 75 - Central Loess Plains

Landform: Hillslope on upland

Parent material: Silty alluvium or loess

Slope: 3 to 7 percent

Drainage class: Well drained

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

Available water capacity: High (About 10.3 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding 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:

Ap—0 to 6 inches; silty clay loam

Bt1—6 to 11 inches; silty clay loam

Bt2—11 to 28 inches; silty clay

Bt3—28 to 43 inches; silty clay

BC1—43 to 60 inches; silty clay loam

BC2—60 to 80 inches; silty clay loam

Minor Components

Geary

Phase: Moderately Eroded

Composition: About 10 percent

Slope: 3 to 7 percent

Drainage class: Well drained

Ecological site: Loamy Upland (pe25-34)

General Considerations: Most areas are used as cropland, but some are used for pasture or range. This mapunit is moderately well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. The hazard of water erosion is severe and wind erosion is moderate. Ephemeral gully erosion potential is also severe. This problem can be overcome by using a conservation tillage, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses, but has some limits due to high clay content and potential for shrink-swell.

2812—Mahone loamy fine sand, 0 to 2 percent slopes, rarely flooded

Map Unit Composition

Mahone: 95 percent

Minor components: 5 percent

Component Descriptions

Mahone

MLRA: 79 - Great Bend Sand 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: Moderate (About 8.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: About 60 to 60 inches

Runoff class: Very low

Ecological site: Loamy Lowland (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 8 inches; loamy fine sand

A—8 to 14 inches; fine sandy loam

Bw1—14 to 20 inches; fine sandy loam

Bw2—20 to 25 inches; very fine sandy loam
 Bw3—25 to 33 inches; silt loam
 2C—33 to 39 inches; stratified silt loam to fine sandy loam
 2Ab1—39 to 42 inches; clay loam
 2Ab2—42 to 48 inches; fine sandy loam
 2Bwb1—48 to 54 inches; very fine sandy loam
 2Bwb2—54 to 61 inches; fine sandy loam
 2Ab—61 to 66 inches; fine sandy loam
 2Bwb—66 to 71 inches; fine sandy loam
 3BC—71 to 78 inches; loamy fine sand
 3C—78 to 80 inches; coarse sand

Minor Components

Yaggy

Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Sandy Lowland (pe21-28)

General Considerations: Most areas are in cropland, but some are in pasture or range. Some areas are also in the Conservation Reserve Program. This map unit is somewhat poorly suited for most commonly grown crops. Wheat and grain sorghum are major crops. The hazard for wind erosion is severe and water erosion is slight. The high water tables and depth to sand will many engineering practices.

2948—Nalim loam, 0 to 1 percent slopes

Map Unit Composition

Nalim: 80 percent
 Minor components: 20 percent

Component Descriptions

Nalim

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.4 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low
Ecological site: Loamy Upland (pe24-32)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 6 inches; loam
 Bt1—6 to 9 inches; loam
 Bt2—9 to 13 inches; clay loam
 Bt3—13 to 21 inches; clay loam
 Bt4—21 to 31 inches; clay loam
 Bt5—31 to 39 inches; sandy clay loam
 Bt6—39 to 44 inches; gravelly sandy clay loam
 Bt7—44 to 52 inches; sandy clay loam
 BC—52 to 62 inches; loamy coarse sand
 C1—62 to 72 inches; gravelly loamy coarse sand
 C2—72 to 80 inches; stratified sand to gravelly loamy coarse sand

Minor Components

Farnum

Composition: About 20 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe21-28)

Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using conservation tillage and residue management. This mapunit is moderately well suited for most engineering uses.

2949—Naron fine sandy loam, 3 to 7 percent slopes, moderately eroded

Map Unit Composition

Naron: 85 percent
 Minor components: 15 percent

Component Descriptions

Naron

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Loamy eolian deposits

Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 9.8 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: Sandy (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sandy loam
 Bt1—8 to 28 inches; sandy clay loam
 Bt2—28 to 39 inches; sandy clay loam
 Bt3—39 to 55 inches; sandy clay loam
 BC—55 to 66 inches; fine sandy loam
 C—66 to 80 inches; loamy fine sand

Minor Components

Saltcreek

Composition: About 15 percent
Slope: 3 to 6 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

General Considerations: Most areas are in cropland, but some are in pasture or range. This mapunit is moderately well suited for most commonly grown crops. Wheat and grain sorghum are the predominant crops grown. The hazard for wind and water erosion is moderate. Erosion can be controlled by terraces, plant residue management, conservation tillage, and tall grass barriers. The slope of this mapunit may limit some of the engineering practices for this mapunit.

2950—Naron fine sandy loam, 7 to 15 percent slopes, moderately eroded

Map Unit Composition

Naron: 85 percent
 Minor components: 15 percent

Component Descriptions

Naron

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley
Parent material: Loamy eolian deposits
Slope: 7 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 9.8 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Sandy (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sandy loam
 Bt1—8 to 28 inches; sandy clay loam
 Bt2—28 to 39 inches; sandy clay loam
 Bt3—39 to 55 inches; sandy clay loam
 BC—55 to 66 inches; fine sandy loam
 C—66 to 80 inches; loamy fine sand

Minor Components

Avans

Composition: About 15 percent
Slope: 6 to 9 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe21-28)

General Considerations: Most areas are in range or pasture with some areas in cropland. This mapunit is somewhat poorly suited for most commonly grown crops. Wheat and grain sorghum are the commonly grown crops. The hazard for wind erosion and water erosion is severe. Erosion can be controlled by building terraces, managing plant residue, conservation tillage, and planting tall grass barriers. The slope of this mapunit may limit some of the engineering practices for this mapunit.

2951—Nash silt loam, 1 to 3 percent slopes

Map Unit Composition

Nash: 90 percent
 Minor components: 10 percent

Component Descriptions

Nash

MLRA: -

Landform: Interfluvium on upland

Parent material: Residuum weathered from sandstone and siltstone

Slope: 1 to 3 percent

Depth to restrictive feature: 25 to 32 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Low (About 5.3 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; silt loam

Bw—8 to 19 inches; silt loam

BC—19 to 28 inches; silt loam

Cr—28 to 80 inches; weathered bedrock

Minor Components

Lucien

Composition: About 10 percent

Slope: 1 to 3 percent

Depth to restrictive feature: 12 to 16 inches to bedrock (paralithic)

Drainage class: Well drained

Ecological site: Shallow Prairie (pe24-32)

Unnamed Wet Soils

General Considerations: Most areas are used for cropland, but some areas are in pasture or range. This map unit is somewhat poorly suited to commonly grown crops such as wheat and grain sorghum. The hazard for wind and water erosion is severe. Ephemeral gully erosion potential is severe for these soils. Wind and water erosion can be controlled by maintaining plant residue through the use of conservation tillage systems, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces, and grassed waterways. The shallow depth to bedrock material can limit some of the engineering uses of these soils.

2952—Nash-Lucien silt loams, 3 to 7 percent slopes

Map Unit Composition

Nash: 60 percent

Lucien: 30 percent

Minor components: 10 percent

Component Descriptions

Nash

MLRA: -

Landform: Hillslope on upland

Parent material: Residuum weathered from sandstone and siltstone

Slope: 3 to 7 percent

Depth to restrictive feature: 25 to 32 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Low (About 5.3 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 (pe24-32)

Land capability (nonirrigated): 4e

Typical Profile:

Ap—0 to 8 inches; silt loam

Bw—8 to 19 inches; silt loam

BC—19 to 28 inches; silt loam

Cr—28 to 80 inches; weathered bedrock

Lucien

MLRA: -

Landform: Hillslope on upland

Parent material: Residuum weathered from sandstone-siltstone

Slope: 3 to 7 percent

Depth to restrictive feature: 12 to 16 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very low (About 2.2 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: Shallow Prairie (pe24-32)

Land capability (nonirrigated): 6e

Typical Profile:

Ap—0 to 6 inches; silt loam
 Bw—6 to 12 inches; loam
 Cr—12 to 80 inches; weathered bedrock

Minor Components**Ost**

Composition: About 10 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe24-32)

Unnamed Wet Soils

General Considerations: Most areas are used for pasture or range, but some areas are in the Conservation Reserve Program and cropland. This map unit is poorly suited to commonly grown crops such as wheat and grain sorghum. The hazard for wind and water erosion is severe. Ephemeral gully erosion potential is severe for these soils. Wind and water erosion can be controlled by maintaining plant residue through the use of conservation tillage systems, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces, and grassed waterways. The shallow depth to bedrock material and steeper slopes can limit some of the engineering uses of these soils.

2953—Nash-Lucien silt loams, 7 to 15 percent slopes, moderately eroded

Map Unit Composition

Nash: 70 percent
 Lucien: 20 percent
 Minor components: 10 percent

Component Descriptions**Nash**

MLRA: -
Landform: Hillslope on upland
Parent material: Residuum weathered from sandstone and siltstone
Slope: 7 to 15 percent
Depth to restrictive feature: 25 to 32 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.3 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Ecological site: Loamy Upland (pe24-32)

Land capability (nonirrigated): 4e

Typical Profile:

Ap—0 to 8 inches; silt loam
 Bw—8 to 19 inches; silt loam
 BC—19 to 28 inches; silt loam
 Cr—28 to 80 inches; weathered bedrock

Lucien

MLRA: -

Landform: Hillslope on upland

Parent material: Residuum weathered from sandstone-siltstone

Slope: 8 to 15 percent

Depth to restrictive feature: 12 to 16 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very low (About 2.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Ecological site: Shallow Prairie (pe24-32)

Land capability (nonirrigated): 6e

Typical Profile:

Ap—0 to 6 inches; silt loam
 Bw—6 to 12 inches; loam
 Cr—12 to 80 inches; weathered bedrock

Minor Components**Clark**

Composition: About 10 percent
Slope: 8 to 15 percent
Drainage class: Well drained
Ecological site: Limy Upland (pe21-28)

Unnamed Wet Soils

General Considerations: Most areas are used for pasture or range. The shallow depth to bedrock material and steeper slopes limit most engineering uses of these soils.

2955—Nickerson fine sandy loam, 0 to 1 percent slopes

suited for most engineering practices due to depth of sand and water tables.

Map Unit Composition

Nickerson: 100 percent

Component Descriptions

Nickerson

MLRA: 79 - Great Bend Sand Plains

Landform: Terrace on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 7.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 6 inches; fine sandy loam
A—6 to 12 inches; loamy fine sand
BA—12 to 18 inches; fine sandy loam
Bt—18 to 29 inches; sandy clay loam
Btk1—29 to 34 inches; loam
Btk2—34 to 38 inches; very fine sandy loam
BC—38 to 45 inches; loamy fine sand
C1—45 to 53 inches; fine sand
C2—53 to 57 inches; fine sand
C3—57 to 80 inches; sand

Minor Components

Carway

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland, some are in pasture or range. This mapunit is moderately well suited for the most commonly grown crops. Wheat, grain sorghum and irrigated corn are the major crops. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by conservation tillage, plant residue management, and tall grass barriers. This mapunit is somewhat poorly

2956—Nickerson loamy fine sand, 0 to 2 percent slopes

Map Unit Composition

Nickerson: 85 percent

Minor components: 15 percent

Component Descriptions

Nickerson

MLRA: 79 - Great Bend Sand Plains

Landform: Terrace on river valley

Parent material: Alluvium

Slope: 0 to 2 percent

Drainage class: Moderately well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 7.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 6 inches; loamy fine sand
A—6 to 12 inches; loamy fine sand
BA—12 to 18 inches; fine sandy loam
Bt—18 to 29 inches; sandy clay loam
Btk1—29 to 34 inches; loam
Btk2—34 to 38 inches; very fine sandy loam
BC—38 to 45 inches; loamy fine sand
C1—45 to 53 inches; fine sand
C2—53 to 57 inches; fine sand
C3—57 to 80 inches; sand

Minor Components

Carway

Composition: About 15 percent

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland, some are in pasture or range. This mapunit is moderately well suited for the most commonly grown crops. Wheat, grain sorghum and irrigated corn are the major crops. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by conservation tillage, plant residue management, and tall grass barriers. This mapunit is somewhat poorly suited for most engineering practices due to depth of sand and water tables.

2957—Nickerson-Punkin fine sandy loams, 0 to 2 percent slopes

Map Unit Composition

Nickerson: 50 percent
Punkin: 50 percent

Component Descriptions

Nickerson

MLRA: 79 - Great Bend Sand Plains

Landform: Terrace on river valley

Parent material: Alluvium

Slope: 0 to 2 percent

Drainage class: Moderately well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 7.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 6 inches; fine sandy loam
A—6 to 12 inches; loamy fine sand
BA—12 to 18 inches; fine sandy loam
Bt—18 to 29 inches; sandy clay loam
Btk1—29 to 34 inches; loam
Btk2—34 to 38 inches; very fine sandy loam
BC—38 to 45 inches; loamy fine sand
C1—45 to 53 inches; fine sand
C2—53 to 57 inches; fine sand
C3—57 to 80 inches; sand

Punkin

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Clayey alluvium over sandy alluvium

Slope: 0 to 1 percent

Drainage class: Moderately well drained

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

Available water capacity: Moderate (About 8.0 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Saline Subirrigated (pe21-28)

Land capability (irrigated): 3s

Land capability (nonirrigated): 3s

Typical Profile:

Ap—0 to 6 inches; fine sandy loam
An—6 to 14 inches; fine sandy loam
2Btknz1—14 to 22 inches; clay loam
2Btknz2—22 to 32 inches; clay
2Btkn1—32 to 41 inches; sandy clay loam
2Btkn2—41 to 51 inches; sandy clay loam
3BC—51 to 63 inches; sand
3C—63 to 80 inches; stratified coarse sand to sand

Minor Components

Carway

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland, some are in pasture or range. This mapunit is moderately well suited for the most commonly grown crops. Wheat, grain sorghum and irrigated corn are the major crops. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by conservation tillage, plant residue management, and tall grass barriers. This mapunit is somewhat poorly suited for most engineering practices due to depth of sand, water tables, potential for shrink-swell, and soluble salt content.

2958—Ninnescah fine sandy loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Composition

Ninnescah: 85 percent
Minor components: 15 percent

Component Descriptions

Ninnescah

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Poorly drained
Slowest permeability: Moderately rapid (About 1.98 in/hr)
Available water capacity: Moderate (About 7.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 24 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 5w

Typical Profile:

Ak1—0 to 6 inches; fine sandy loam
Ak2—6 to 14 inches; sandy loam
Ak3—14 to 19 inches; sandy loam
Bkg1—19 to 30 inches; sandy loam
Bkg2—30 to 37 inches; sandy loam
Cg1—37 to 52 inches; sandy loam
Cg2—52 to 80 inches; loamy sand

Minor Components

Kanza

Composition: About 15 percent
Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in pasture or range. This map unit is poorly suited for the most commonly grown crops. The hazard for wind and water erosion is slight. The water tables, flooding, and depth to sand limit most engineering uses for this mapunit.

2959—Ninnescah fine sandy loam, 0 to 1 percent slopes, occasionally flooded, Saline

Map Unit Composition

Ninnescah: 100 percent

Component Descriptions

Ninnescah

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Slope: 0 to 1 percent
Drainage class: Poorly drained
Slowest permeability: Moderately rapid (About 1.98 in/hr)
Available water capacity: Moderate (About 6.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 0 to 24 inches
Runoff class: Very low
Ecological site: Saline Subirrigated (pe21-28)
Land capability (nonirrigated): 5s

Typical Profile:

Ak1—0 to 6 inches; fine sandy loam
Ak2—6 to 14 inches; sandy loam
Ak3—14 to 19 inches; sandy loam
Bkg1—19 to 30 inches; sandy loam
Bkg2—30 to 37 inches; sandy loam
Cg1—37 to 52 inches; loamy sand
Cg2—52 to 80 inches; loamy sand

General Considerations: This map unit is poorly suited to the commonly grown crops due to the sodic conditions and wetness. Most areas are used for pasture or range. For areas that are cropped, the hazard of wind or water erosion is slight. Maintaining soil tilth and soil crusting are problems, but they can be improved by adding organic matter. The high sodium content, pH, soluble salts, and water table limit the engineering uses of these soils.

3051—Ost loam, 0 to 1 percent slope**Map Unit Composition**

Ost: 90 percent
 Minor components: 10 percent

Component Descriptions**Ost**

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 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: Very low
Ecological site: Loamy Upland (pe24-32)
Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 8 inches; loam
 Bt1—8 to 12 inches; loam
 Bt2—12 to 18 inches; loam
 Bk1—18 to 23 inches; clay loam
 Bk2—23 to 38 inches; clay loam
 BCk—38 to 54 inches; loam
 C—54 to 80 inches; loam

Minor Components**Clark**

Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Limy Upland (pe21-28)

Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the predominant crops. The hazard of wind and water erosion is slight. This mapunit is well suited for most engineering practices.

3052—Ost-Clark loams, 1 to 3 percent slopes**Map Unit Composition**

Ost: 55 percent
 Clark: 45 percent

Component Descriptions**Ost**

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 3 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: Low
Ecological site: Loamy Upland (pe24-32)
Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 8 inches; loam
 Bt1—8 to 12 inches; loam
 Bt2—12 to 18 inches; loam
 Bk1—18 to 23 inches; clay loam
 Bk2—23 to 38 inches; clay loam
 BCk—38 to 54 inches; loam
 C—54 to 80 inches; loam

Clark

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 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: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe21-28)
Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 11 inches; loam
 Bw—11 to 16 inches; loam
 Bk1—16 to 28 inches; loam
 Bk2—28 to 45 inches; fine sandy loam
 Bck1—45 to 65 inches; fine sandy loam
 Ck2—65 to 80 inches; very fine sandy loam

Minor Components**Unnamed Wet Soils**

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the predominant crops. The hazard of wind erosion is moderate and water erosion is slight. This mapunit is well suited for most engineering practices.

2Btkssb2—61 to 71 inches; silty clay loam
 2Btkssb3—71 to 80 inches; clay loam

Minor Components**Carbika**

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for cropland but some areas are in pasture. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans and irrigated corn are the predominant crops in the area. The hazard of wind and water erosion is slight. The slow permeability and high shrink-swell can limit the engineering uses of the soil.

3170—Penalosa silt loam, 0 to 1 percent slopes**Map Unit Composition**

Penalosa: 100 percent

Component Descriptions**Penalosa**

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Loamy Upland (pe21-28)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:

Ap1—0 to 5 inches; silt loam
 Ap2—5 to 10 inches; silt loam
 Bt1—10 to 14 inches; silty clay loam
 Bt2—14 to 22 inches; silty clay loam
 Btss1—22 to 28 inches; silty clay loam
 Btss2—28 to 34 inches; silty clay loam
 Btss3—34 to 39 inches; silty clay loam
 BC—39 to 48 inches; silt loam
 2Btkssb1—48 to 61 inches; silty clay loam

3171—Penalosa silt loam, 1 to 3 percent slopes**Map Unit Composition**

Penalosa: 100 percent

Component Descriptions**Penalosa**

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 3 percent
Drainage class: Moderately well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe21-28)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:

Ap1—0 to 5 inches; silt loam
 Ap2—5 to 10 inches; silty clay loam
 Bt1—10 to 14 inches; silty clay loam
 Bt2—14 to 22 inches; silty clay loam
 Btss1—22 to 28 inches; silty clay loam
 Btss2—28 to 34 inches; silty clay loam
 Btss3—34 to 39 inches; silty clay loam
 BC—39 to 48 inches; silt loam
 2Btkssb1—48 to 61 inches; silty clay loam

2Btkssb2—61 to 71 inches; silty clay loam
2Btkssb3—71 to 80 inches; clay loam

Minor Components Unnamed Wet Soils

General Considerations: Most areas are used for cropland but some areas are in pasture. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans and irrigated corn are the predominant crops in the area. The hazard of wind and water erosion is slight. The slow permeability and high shrink-swell can limit the engineering uses of the soil.

3180—Pratt fine sand, 5 to 10 percent slopes

Map Unit Composition

Pratt: 85 percent
Minor components: 15 percent

Component Descriptions

Pratt

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits
Slope: 5 to 10 percent
Drainage class: Well drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Moderate (About 6.3 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sand
Bt—8 to 24 inches; loamy fine sand
E&Bt—24 to 64 inches; stratified fine sand to loamy fine sand
C—64 to 80 inches; fine sand

Minor Components

Attica

Composition: About 15 percent
Slope: 5 to 10 percent
Drainage class: Well drained

Ecological site: Sandy (pe21-28)

General Considerations: Most areas are in pasture or range, but some are in cropland. This mapunit is poorly suited for the most commonly grown crops. The hazard for wind erosion is severe and water erosion is moderate. This mapunit is poorly suited for most engineering practices due to the sandy textures.

3181—Pratt-Turon fine sands, 1 to 5 percent slopes

Map Unit Composition

Pratt: 45 percent
Turon: 30 percent
Minor components: 25 percent

Component Descriptions

Pratt

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits
Slope: 1 to 5 percent
Drainage class: Well drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Moderate (About 6.3 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sand
Bt—8 to 24 inches; loamy fine sand
E&Bt—24 to 64 inches; stratified fine sand to loamy fine sand
C—64 to 80 inches; fine sand

Turon

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits over alluvium
Slope: 1 to 5 percent
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)

Available water capacity: Moderate (About 7.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sand
 Bt—8 to 28 inches; loamy fine sand
 E&Bt—28 to 40 inches; stratified loamy fine sand to fine sandy loam
 2Btb1—40 to 58 inches; silty clay
 2Btb2—58 to 75 inches; silty clay
 2Btb3—75 to 80 inches; silty clay

Minor Components

Hayes

Composition: About 25 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

Carway

Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Warnut

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland, but some are in pasture and range. Some areas are also in the Conservation Reserve Program. This mapunit is somewhat poorly suited for the most commonly grown crops. Wheat, grain sorghum, and irrigated corn are the predominant crops. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. This mapunit is moderately well suited for most engineering practices.

3190—Punkin silt loam, 0 to 1 percent slopes

Map Unit Composition

Punkin: 90 percent
 Minor components: 10 percent

Component Descriptions

Punkin

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 7.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Clay Pan (pe21-28)
Land capability (irrigated): 3s
Land capability (nonirrigated): 3s

Typical Profile:

Ap—0 to 4 inches; silt loam
 Btn—4 to 8 inches; silty clay
 Btnz1—8 to 15 inches; silty clay loam
 Btnz2—15 to 21 inches; silty clay loam
 Btnkz1—21 to 39 inches; silty clay loam
 Btnkz2—39 to 47 inches; silty clay loam
 Btnkz3—47 to 64 inches; silty clay loam
 BC1—64 to 78 inches; sandy clay loam
 BC2—78 to 80 inches; sandy clay loam

Minor Components

Darlow

Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Pan (pe21-28)

Carbika

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Kisiwa

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Saline Subirrigated (pe21-28)

General Considerations: Most areas are used for cropland, but some areas are used for pasture or range. This mapunit is moderately well suited for the most commonly grown crops such as wheat and grain sorghum. The hazard for wind erosion is severe and water erosion is slight. Maintaining soil tilth and soil crusting are problems but they can be improved by organic matter. The high sodium content, pH, soluble salts, and high shrink-swell potential can limit the uses of many engineering practices.

3191—Punkin-Taver complex, 0 to 1 percent slopes

Map Unit Composition

Punkin: 70 percent
Taver: 20 percent
Minor components: 10 percent

Component Descriptions

Punkin

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 7.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Clay Pan (pe21-28)
Land capability (irrigated): 3s
Land capability (nonirrigated): 3s

Typical Profile:

Ap—0 to 4 inches; silt loam
Btn—4 to 8 inches; silty clay
Btnz1—8 to 15 inches; silty clay loam
Btnz2—15 to 21 inches; silty clay loam
Btnkz1—21 to 39 inches; silty clay loam
Btnkz2—39 to 47 inches; silty clay loam
Btnkz3—47 to 64 inches; silty clay loam
BC1—64 to 78 inches; sandy clay loam
BC2—78 to 80 inches; sandy clay loam

Taver

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 9.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Clay Upland (pe21-28)
Land capability (nonirrigated): 2s

Typical Profile:

Ap—0 to 7 inches; loam
2Bt1—7 to 17 inches; silty clay loam
2Bt2—17 to 33 inches; silty clay
2Btk1—33 to 53 inches; silty clay loam
2Btk2—53 to 64 inches; clay loam
3Bt—64 to 80 inches; sandy clay loam

Minor Components

Darlow

Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Clay Pan (pe21-28)

Carbika

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Kisiwa

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Saline Subirrigated (pe21-28)

General Considerations: Most areas are used for cropland, but some areas are used for pasture or range. This mapunit is moderately well suited for the most commonly grown crops such as wheat and grain sorghum. The hazard for wind erosion is severe and water erosion is slight. Maintaining soil tilth and soil crusting are problems but they can be improved by organic matter. The high sodium content, pH, soluble salts, and high shrink-swell potential can limit the uses of many engineering practices.

3403—sand Pits

Map Unit Composition

Sand Pit: 100 percent

Component Descriptions

Sand Pit

MLRA: 79 - Great Bend Sand Plains

Depth to seasonal water saturation: More than 6 feet

3469—Smolan silty clay loam, 1 to 3 percent slopes

Map Unit Composition

Smolan: 90 percent

Minor components: 10 percent

Component Descriptions

Smolan

MLRA: 75 - Central Loess Plains

Landform: Hillslope on upland

Parent material: Loess

Slope: 1 to 3 percent

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 10.4 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe25-34)

Land capability (irrigated): 2e

Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 5 inches; silty clay loam

A—5 to 8 inches; silty clay loam

BA—8 to 15 inches; silt loam

Bt1—15 to 29 inches; silty clay loam

Bt2—29 to 38 inches; silty clay loam

BC1—38 to 49 inches; silty clay loam

BC2—49 to 80 inches; silty clay loam

Minor Components

Longford

Phase: Moderately Eroded

Composition: About 10 percent

Slope: 1 to 3 percent

Drainage class: Well drained

Ecological site: Loamy Upland (pe25-34)

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water and wind erosion is moderate. Ephemeral gully erosion potential is moderate in most areas. This problem can be overcome by using a conservation tillage, tall grass barriers, contour farming, terraces and waterways, and residue management. This mapunit is moderately well suited for most engineering uses. The high clay content and shrinkswell may limit some practices.

3510—Saltcreek-Funmar-Farnum complex, 1 to 3 percent slopes

Map Unit Composition

Saltcreek: 50 percent

Funmar: 30 percent

Farnum: 20 percent

Component Descriptions

Saltcreek

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Loamy eolian deposits over alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.0 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 5 inches; fine sandy loam

Bt1—5 to 10 inches; sandy clay loam

Bt2—10 to 26 inches; sandy clay loam

Bt3—26 to 39 inches; fine sandy loam

2Btb—39 to 56 inches; silty clay

2Btkb1—56 to 66 inches; silty clay loam

2Btkb2—66 to 80 inches; silty clay loam

Funmar

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium over alluvium

Slope: 1 to 3 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: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 6 inches; loam

A—6 to 12 inches; loam

Bt1—12 to 17 inches; loam

Bt2—17 to 26 inches; clay loam

Bt3—26 to 32 inches; loam

2Ab—32 to 38 inches; silty clay loam

2Btb—38 to 54 inches; silty clay loam

2Btkb1—54 to 66 inches; silty clay loam

2Btkb2—66 to 80 inches; silty clay loam

Farnum

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 10.7 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 2c

Typical Profile:

Ap—0 to 5 inches; loam

A—5 to 15 inches; loam

Bt1—15 to 21 inches; loam

Bt2—21 to 34 inches; sandy clay loam

Bt3—34 to 48 inches; loam

Bt4—48 to 61 inches; clay loam

Bt5—61 to 73 inches; clay loam

Btk—73 to 80 inches; loam

Minor Components

Carway

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn. The hazard for wind and water erosion is slight. The potential for high shrink-swell may limit some engineering practices for this mapunit.

3511—Saltcreek And Naron fine sandy loams, 0 to 1 percent slopes

Map Unit Composition

Saltcreek: 70 percent

Naron: 30 percent

Component Descriptions

Saltcreek

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Loamy eolian deposits over alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.0 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 5 inches; fine sandy loam

Bt1—5 to 10 inches; sandy clay loam

Bt2—10 to 26 inches; sandy clay loam
 Bt3—26 to 39 inches; fine sandy loam
 2Btb—39 to 56 inches; silty clay
 2Btkb1—56 to 66 inches; silty clay loam
 2Btkb2—66 to 80 inches; silty clay loam

Naron

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Loamy eolian deposits

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 9.1 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 2e

Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 7 inches; fine sandy loam
 A—7 to 19 inches; fine sandy loam
 Bt1—19 to 34 inches; loam
 Bt2—34 to 41 inches; sandy clay loam
 Ck—41 to 61 inches; stratified loam to loamy fine sand to fine sandy loam
 C—61 to 80 inches; coarse sand

General Considerations: Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn. The hazard for wind and water erosion is slight. The depth to sand and potential for high shrink-swell may limit some engineering practices for this mapunit.

3512—Saltcreek And Naron fine sandy loams, 1 to 3 percent slopes

Map Unit Composition

Saltcreek: 50 percent

Naron: 50 percent

Minor components: 10 percent

Component Descriptions

Saltcreek

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Loamy eolian deposits over alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.0 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 5 inches; fine sandy loam
 Bt1—5 to 10 inches; sandy clay loam
 Bt2—10 to 26 inches; sandy clay loam
 Bt3—26 to 39 inches; fine sandy loam
 2Btb—39 to 56 inches; silty clay
 2Btkb1—56 to 66 inches; silty clay loam
 2Btkb2—66 to 80 inches; silty clay loam

Naron

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Loamy eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 9.7 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sandy loam
 A—8 to 14 inches; fine sandy loam
 Bt1—14 to 28 inches; sandy clay loam
 Bt2—28 to 39 inches; sandy clay loam
 Bt3—39 to 55 inches; sandy clay loam
 BC—55 to 66 inches; fine sandy loam
 C—66 to 80 inches; loamy fine sand

Minor Components

Funmar

Composition: About 10 percent

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Loamy Upland (pe21-28)

Carway

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

Taver

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Clay Upland (pe21-28)

General Considerations: Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn. The hazard for wind and water erosion is slight. The depth to sand and potential for high shrink-swell may limit some engineering practices for this mapunit.

3520—Saxman loamy sand, 0 to 1 percent slopes

Map Unit Composition

Saxman: 85 percent

Minor components: 15 percent

Component Descriptions

Saxman

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Sandy alluvium

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability: Rapid (About 5.95 in/hr)

Available water capacity: Low (About 4.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: About 24 to 36 inches

Runoff class: Very low

Ecological site: Sandy Lowland (pe21-28)

Land capability (irrigated): 2e

Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; loamy sand

Ap2—4 to 8 inches; loamy sand

A—8 to 13 inches; loamy sand

AC—13 to 22 inches; loamy sand

C1—22 to 30 inches; sand

C2—30 to 37 inches; sand

C3—37 to 48 inches; sand

C4—48 to 54 inches; fine sand

C5—54 to 80 inches; stratified gravelly coarse sand

Minor Components

Willowbrook

Composition: About 15 percent

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit. Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit.

3530—Shellabarger, eroded And Albion Soils, 7 to 15 percent slopes

Map Unit Composition

Shellabarger: 45 percent

Albion: 40 percent

Minor components: 15 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 7 to 15 percent

Drainage class: Well 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: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 5 inches; sandy loam
 Bt1—5 to 11 inches; sandy clay loam
 Bt2—11 to 19 inches; sandy clay loam
 Bt3—19 to 33 inches; sandy loam
 BC—33 to 47 inches; coarse sandy loam
 C1—47 to 59 inches; loamy sand
 C2—59 to 73 inches; sand
 C3—73 to 80 inches; sand

Albion

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 7 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Moderate (About 7.3 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 9 inches; sandy loam
 Bt1—9 to 16 inches; sandy loam
 Bt2—16 to 27 inches; sandy loam
 BC—27 to 48 inches; loamy coarse sand
 C—48 to 80 inches; sand

Minor Components

Clark

Composition: About 15 percent
Slope: 7 to 15 percent
Drainage class: Well drained
Ecological site: Limy Upland (pe21-28)

Unnamed Wet Soils

General Considerations: Most areas are used for pasture or range. This map unit is poorly suited for cropland. The steep slopes of this map unit will limit most engineering practices for this soil.

3531—Shellabarger And Nalim Soils, 3 to 7 percent slopes

Map Unit Composition

Shellabarger: 50 percent
 Nalim: 50 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 3 to 7 percent
Drainage class: Well 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: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 6 inches; sandy loam
 Bt1—6 to 11 inches; sandy clay loam
 Bt2—11 to 19 inches; sandy clay loam
 Bt3—19 to 33 inches; sandy loam
 BC—33 to 47 inches; coarse sandy loam
 C1—47 to 59 inches; loamy sand
 C2—59 to 73 inches; sand
 C3—73 to 80 inches; sand

Nalim

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.4 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 (pe24-32)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 6 inches; loam
 Bt1—6 to 9 inches; loam

Bt2—9 to 13 inches; clay loam
 Bt3—13 to 21 inches; clay loam
 Bt4—21 to 31 inches; clay loam
 Bt5—31 to 39 inches; sandy clay loam
 Bt6—39 to 44 inches; gravelly sandy clay loam
 Bt7—44 to 52 inches; sandy clay loam
 BC—52 to 62 inches; loamy coarse sand
 C1—62 to 72 inches; gravelly loamy coarse sand
 C2—72 to 80 inches; stratified sand to gravelly loamy coarse sand

General Considerations: Most areas are used as cropland or hayland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is slight and water erosion is severe for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled by maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. These soils are moderately well suited for most engineering uses of these soils, except where steep slopes can limit the practice.

3532—Shellabarger loamy sand, 0 to 3 percent slopes

Map Unit Composition

Shellabarger: 80 percent
 Minor components: 20 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 8.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

A—0 to 6 inches; loamy sand
 Bt1—6 to 11 inches; sandy clay loam
 Bt2—11 to 19 inches; sandy clay loam
 Bt3—19 to 33 inches; sandy loam
 BC—33 to 47 inches; coarse sandy loam
 C1—47 to 59 inches; loamy sand
 C2—59 to 73 inches; sand
 C3—73 to 80 inches; sand

Minor Components

Albion

Composition: About 20 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

General Considerations: Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of these soils.

3533—Shellabarger sandy loam, 0 to 1 percent slopes

Map Unit Composition

Shellabarger: 85 percent
Minor components: 15 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Well 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: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 7 inches; sandy loam
Bt1—7 to 11 inches; sandy clay loam
Bt2—11 to 19 inches; sandy clay loam
Bt3—19 to 33 inches; sandy loam
BC—33 to 47 inches; coarse sandy loam
C1—47 to 59 inches; loamy sand
C2—59 to 73 inches; sand
C3—73 to 80 inches; sand

Minor Components

Nalim

Composition: About 15 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy Upland (pe24-32)

Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is slight. Wind erosion can be controlled by maintaining plant residue through the use of a conservation tillage system. The moderate water holding capacity can hurt production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range.

Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of this soil.

3534—Shellabarger sandy loam, 1 to 3 percent slopes

Map Unit Composition

Shellabarger: 85 percent
Minor components: 15 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 1 to 3 percent
Drainage class: Well 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: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 7 inches; sandy loam
Bt1—7 to 11 inches; sandy clay loam
Bt2—11 to 19 inches; sandy clay loam
Bt3—19 to 33 inches; sandy loam
BC—33 to 47 inches; coarse sandy loam
C1—47 to 59 inches; loamy sand
C2—59 to 73 inches; sand
C3—73 to 80 inches; sand

Minor Components

Albion

Composition: About 15 percent
Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops.

Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled by maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of these soils.

3535—Shellabarger-Nalim complex, 1 to 3 percent slopes

Map Unit Composition

Shellabarger: 55 percent
Nalim: 45 percent

Component Descriptions

Shellabarger

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 1 to 3 percent

Drainage class: Well 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: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 7 inches; sandy loam

Bt1—7 to 11 inches; sandy clay loam
Bt2—11 to 19 inches; sandy clay loam
Bt3—19 to 33 inches; sandy loam
BC—33 to 47 inches; coarse sandy loam
C1—47 to 59 inches; loamy sand
C2—59 to 73 inches; sand
C3—73 to 80 inches; sand

Nalim

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace on river valley

Parent material: Loamy alluvium

Slope: 1 to 3 percent

Drainage class: Well drained

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

Available water capacity: High (About 10.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Upland (pe24-32)

Land capability (irrigated): 2e

Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 6 inches; loam
Bt1—6 to 9 inches; loam
Bt2—9 to 13 inches; clay loam
Bt3—13 to 21 inches; clay loam
Bt4—21 to 31 inches; clay loam
Bt5—31 to 39 inches; sandy clay loam
Bt6—39 to 44 inches; gravelly sandy clay loam
Bt7—44 to 52 inches; sandy clay loam
BC—52 to 62 inches; loamy coarse sand
C1—62 to 72 inches; gravelly loamy coarse sand
C2—72 to 80 inches; stratified sand to gravelly loamy coarse sand

Minor Components

Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind and water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled by maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass

barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. These soils are moderately well suited for most engineering uses of these soils.

3540—Solvay loamy fine sand, 0 to 2 percent slopes

Map Unit Composition

Solvay: 90 percent
Minor components: 10 percent

Component Descriptions

Solvay

MLRA: 79 - Great Bend Sand Plains

Landform: Interdune on paleoterrace on river valley

Parent material: Loamy eolian deposits over alluvium

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 9.0 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

A—0 to 5 inches; loamy fine sand
2Bt1—5 to 14 inches; fine sandy loam
2Bt2—14 to 23 inches; fine sandy loam
2Bt3—23 to 37 inches; fine sandy loam
2BC1—37 to 58 inches; fine sandy loam
2BC2—58 to 76 inches; loamy fine sand
2BC3—76 to 80 inches; loamy fine sand

Minor Components

Hayes

Composition: About 10 percent

Slope: 0 to 2 percent

Drainage class: Well drained

Ecological site: Sandy (pe21-28)

Carway

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in gropland, but some areas are used for pasture and range. Many areas are in the Conservation Reserve Program. This mapunit is somewhat poorly suited for the most commonly grown crops. Wheat, grain sorghum and irrigated corn are the predominant crops. The hazard for wind erosion is severe and water erosion is slight. Conservation tillage, residue management, and tall grass barriers are ways to control wind erosion. The depth to water tables will limit many engineering practices.

3550—Spelvin loamy sand, 0 to 1 percent slopes

Map Unit Composition

Spelvin: 100 percent

Component Descriptions

Spelvin

MLRA: 79 - Great Bend Sand Plains

Landform: Interdune on paleoterrace on river valley

Parent material: Eolian deposits over alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 8.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 5 inches; loamy sand
2Bt1—5 to 23 inches; sandy clay loam
2Bt2—23 to 34 inches; sandy clay loam
2Bt3—34 to 50 inches; sandy loam

2BC—50 to 58 inches; loamy sand
2C—58 to 80 inches; sand

General Considerations: Most areas are in cropland, but some areas are used for pasture and range. Many areas are in the Conservation Reserve Program. This mapunit is somewhat poorly suited for the most commonly grown crops. Wheat, grain sorghum and irrigated corn are the predominant crops. The hazard for wind erosion is severe and water erosion is slight. Conservation tillage, residue management, and tall grass barriers are ways to control wind erosion. This map unit is moderately well suited for most engineering practices.

3639—Taver loam, 0 to 1 percent slopes

Map Unit Composition

Taver: 90 percent
Minor components: 10 percent

Component Descriptions

Taver

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace on river valley
Parent material: Clayey alluvium
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: High (About 9.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Clay Upland (pe21-28)
Land capability (nonirrigated): 2s

Typical Profile:

Ap—0 to 7 inches; loam
2Bt1—7 to 17 inches; silty clay loam
2Bt2—17 to 33 inches; silty clay
2Btk1—33 to 53 inches; silty clay loam
2Btk2—53 to 64 inches; clay loam
3Bt—64 to 80 inches; sandy clay loam

Minor Components

Saltcreek

Composition: About 10 percent

Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Sandy (pe21-28)

Carbika

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for cropland, but some areas are in pasture or range. This mapunit is well suited for the most commonly grown crops such as wheat, grain sorghum, soybeans, and irrigated corn. The hazard for wind and water erosion is slight. This mapunit is moderately well suited for most engineering practices. The potential for high shrink-swell may limit some practices.

3640—Tivin fine sand, 10 to 30 percent slopes

Map Unit Composition

Tivin: 95 percent
Minor components: 5 percent

Component Descriptions

Tivin

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits
Slope: 10 to 30 percent
Drainage class: Somewhat excessively drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Low (About 3.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Ponding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Choppy Sands (pe21-28)
Land capability (nonirrigated): 6e

Typical Profile:

A—0 to 7 inches; fine sand
AC—7 to 18 inches; fine sand
C—18 to 80 inches; fine sand

Minor Components

Langdon

Composition: About 5 percent
Slope: 10 to 30 percent

Drainage class: Somewhat excessively drained
Ecological site: Choppy Sands (pe21-28)

Plev

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in pasture or range. This mapunit is poorly suited for the most commonly grown crops. The hazard for wind erosion is severe and water erosion is moderate. The sandy textures will limit most engineering practices.

3641—Tivin-Dillhut fine sands, 0 to 15 percent slopes

Map Unit Composition

Tivin: 45 percent
 Dillhut: 40 percent
 Minor components: 15 percent

Component Descriptions

Tivin

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits
Slope: 1 to 15 percent
Drainage class: Somewhat excessively drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Low (About 3.2 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Ponding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Choppy Sands (pe21-28)
Land capability (nonirrigated): 6e

Typical Profile:

A—0 to 7 inches; fine sand
 AC—7 to 18 inches; fine sand
 C—18 to 80 inches; fine sand

Dillhut

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Eolian deposits over alluvium
Slope: 0 to 7 percent
Drainage class: Moderately well drained

Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.0 inches)

Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 4 inches; fine sand
 AC—4 to 9 inches; fine sand
 C1—9 to 18 inches; fine sand
 C2—18 to 26 inches; fine sand
 2Btb1—26 to 41 inches; fine sandy loam
 2Btb2—41 to 55 inches; fine sandy loam
 2BCb1—55 to 65 inches; fine sandy loam
 2BCb2—65 to 70 inches; fine sandy loam
 2Cg—70 to 80 inches; fine sandy loam

Minor Components**Solvay**

Composition: About 15 percent
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Carway

Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Warnut

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Plev

Slope: 0 to 1 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in pasture or range. This mapunit is poorly suited for most commonly grown crops. The hazard for wind erosion is severe and water erosion is slight. This mapunit is poorly suited for most engineering practices.

3642—Tivin-Willowbrook, occasionally flooded, complex, 0 to 12 percent slopes

Map Unit Composition

Tivin: 70 percent
Willowbrook: 30 percent

Component Descriptions

Tivin

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on flood plain on river valley

Parent material: Sandy eolian deposits

Slope: 1 to 12 percent

Drainage class: Somewhat excessively drained

Slowest permeability: Moderately rapid (About 2.00 in/hr)

Available water capacity: Low (About 4.1 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Ponding hazard: None

Depth to seasonal water saturation: About 60 to 80 inches

Runoff class: Very low

Ecological site: Choppy Sands (pe21-28)

Land capability (nonirrigated): 6e

Typical Profile:

A—0 to 11 inches; fine sand

C1—11 to 53 inches; fine sand

2C2—53 to 63 inches; silt loam

2C3—63 to 80 inches; sand

Willowbrook

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium over sandy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Moderately rapid (About 2.00 in/hr)

Available water capacity: Low (About 5.7 inches)

Shrink-swell potential: Low (About 1.7 LEP)

Flooding hazard: Occasional

Ponding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (irrigated): 2e

Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; fine sandy loam

Ap2—4 to 9 inches; fine sandy loam

AB—9 to 13 inches; fine sandy loam

Bw—13 to 17 inches; fine sandy loam

Bk1—17 to 19 inches; loam

Bk2—19 to 26 inches; fine sandy loam

2C1—26 to 45 inches; coarse sand

2C2—45 to 51 inches; coarse sand

2C3—51 to 80 inches; stratified gravelly coarse sand to sand

General Considerations: Most areas are in pasture or range. This mapunit is poorly suited for most commonly grown crops. The hazard for wind erosion is severe and water erosion is slight. The sandy textures and water tables limit most engineering uses of this mapunit.

3643—Tobin silt loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Composition

Tobin: 100 percent

Component Descriptions

Tobin

MLRA: 75 - Central Loess Plains

Landform: Flood plain on river valley

Parent material: Silty alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.9 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Loamy Lowland (pe25-34)

Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 6 inches; silt loam

A1—6 to 15 inches; silty clay loam

A2—15 to 34 inches; silt loam

C—34 to 47 inches; silt loam

Ab—47 to 80 inches; silty clay loam

Minor Components Unnamed Wet Soils

General Considerations: Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops.

A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using a conservation tillage and residue management. This mapunit is poorly suited for most engineering uses due to the flooding hazard.

3644—Turon-Carway complex, 0 to 5 percent slopes

Map Unit Composition

Turon: 65 percent
Carway: 20 percent
Minor components: 15 percent

Component Descriptions

Turon

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits over alluvium
Slope: 0 to 5 percent
Drainage class: Well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Moderate (About 7.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 8 inches; fine sand
Bt—8 to 28 inches; loamy fine sand
E&Bt—28 to 40 inches; stratified loamy fine sand to fine sandy loam
2Btb1—40 to 58 inches; silty clay
2Btb2—58 to 75 inches; silty clay
2Btb3—75 to 80 inches; silty clay

Carway

MLRA: 79 - Great Bend Sand Plains
Landform: Interdune on depression on paleoterrace on river valley
Parent material: Loamy eolian deposits over 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 8.6 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Ponding hazard: Frequent

Depth to seasonal water saturation: About 0 to 0 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 7 inches; loamy fine sand
Bt1—7 to 10 inches; sandy clay loam
Bt2—10 to 15 inches; sandy clay loam
Bt3—15 to 22 inches; fine sandy loam
Bt4—22 to 35 inches; fine sandy loam
2Btb1—35 to 40 inches; clay loam
2Btb2—40 to 54 inches; clay loam
2Btb3—54 to 63 inches; clay loam
2Btb4—63 to 72 inches; clay loam
2Btkb—72 to 80 inches; clay loam

Minor Components

Solvay

Composition: About 15 percent

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for cropland, but some areas are in pasture or range. This mapunit is somewhat poorly suited for most commonly grown crops. Wheat and grain sorghum are the predominant crops grown. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. The high water tables, high shrink-swell potential, and sandy textures will limit most engineering uses of this mapunit.

3760—Urban land-Blazefork-Kaskan complex, 0 to 1 percent slopes, Protected

Map Unit Composition

Urban land: 50 percent
Blazefork: 25 percent
Kaskan: 25 percent

Component Descriptions

Urban land

MLRA: 79 - Great Bend Sand Plains

Slope: 0 to 1 percent

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Blazefork

MLRA: 79 - Great Bend Sand Plains

Landform: Stream terrace on river valley

Parent material: 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 9.3 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 48 to 48 inches

Runoff class: Very low

Ecological site: Clay Lowland (pe25-34)

Land capability (irrigated): 2s

Land capability (nonirrigated): 2s

Typical Profile:

Ap1—0 to 3 inches; silty clay loam

Ap2—3 to 7 inches; silty clay loam

Bt—7 to 14 inches; silty clay

Btss—14 to 22 inches; silty clay

Bt1—22 to 29 inches; silty clay

Bt2—29 to 34 inches; silty clay

Bt3—34 to 40 inches; silty clay

Bt4—40 to 48 inches; silty clay loam

2Bt5—48 to 61 inches; clay loam

2Bt6—61 to 80 inches; loam

Kaskan

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 8.7 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 60 to 60 inches

Runoff class: Very low

Ecological site: Loamy Lowland (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 7 inches; loam

A—7 to 17 inches; clay loam

Bw1—17 to 24 inches; loam

Bw2—24 to 35 inches; fine sandy loam

BC—35 to 41 inches; loamy fine sand

C1—41 to 47 inches; fine sand

C2—47 to 66 inches; sand

C3—66 to 80 inches; stratified gravelly coarse sand to sand

Minor Components

Unnamed Wet Soils

General Considerations: All of the area within the mapunit has been used for development within the city of Hutchinson. Some areas on the edge of the city limits are used for cropland production.

3762—Urban land-Darlow-Elmer complex, 0 to 1 percent slopes

Map Unit Composition

Urban land: 50 percent

Darlow: 25 percent

Elmer: 15 percent

Minor components: 10 percent

Component Descriptions

Urban land

MLRA: 79 - Great Bend Sand Plains

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Darlow

MLRA: 79 - Great Bend Sand Plains

Landform: Terrace on river valley

Parent material: Loamy 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 7.6 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Clay Pan (pe21-28)

Land capability (irrigated): 4s

Land capability (nonirrigated): 4s

Typical Profile:

Ap1—0 to 5 inches; loam
 Ap2—5 to 8 inches; loam
 Btn—8 to 14 inches; loam
 Btny—14 to 20 inches; clay loam
 Btknyz—20 to 26 inches; loam
 Btnz1—26 to 33 inches; loam
 Btnz2—33 to 44 inches; loam
 Btn1—44 to 53 inches; loam
 Btn2—53 to 68 inches; loam
 2Btn3—68 to 80 inches; sandy loam

Elmer

MLRA: 79 - Great Bend Sand Plains

Landform: Terrace on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.1 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Loamy Terrace (pe21-28)

Land capability (irrigated): 3s

Land capability (nonirrigated): 3s

Typical Profile:

Ap1—0 to 6 inches; fine sandy loam
 Ap2—6 to 9 inches; fine sandy loam
 AB—9 to 19 inches; fine sandy loam
 Btn1—19 to 26 inches; fine sandy loam
 Btn2—26 to 37 inches; fine sandy loam
 Btnk1—37 to 41 inches; loam
 Btnk2—41 to 51 inches; clay loam
 Btnk3—51 to 61 inches; fine sandy loam
 Btn1'—61 to 72 inches; fine sandy loam
 Btn2'—72 to 80 inches; fine sandy loam

Minor Components

Punkin

Composition: About 10 percent

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Clay Pan (pe21-28)

Carbika

Slope: 0 to 1 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: All of the area within the mapunit has been used for development within the city of Hutchinson. Some areas on the edge of the city limits are used for cropland production.

**3763—Urban land-Imano complex,
0 to 1 percent slopes, Protected**

Map Unit Composition

Urban land: 50 percent

Imano: 40 percent

Minor components: 10 percent

Component Descriptions

Urban land

MLRA: 79 - Great Bend Sand Plains

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Imano

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium over sandy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 6.6 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Ponding hazard: None

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 3w

Typical Profile:

Ap—0 to 10 inches; clay loam
 Bw—10 to 25 inches; loam
 2C1—25 to 55 inches; stratified fine sand to sand
 2C2—55 to 80 inches; coarse sand

Minor Components

Willowbrook

Phase: Protected

Composition: About 10 percent

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Kanza

Slope: 0 to 2 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: All of the area within the mapunit has been used for development within the city of Hutchinson. Some areas on the edge of the city limits are used for cropland production.

3764—Urban land-Mahone complex, 0 to 1 percent slopes, Protected

Map Unit Composition

Urban land: 60 percent

Mahone: 35 percent

Minor components: 5 percent

Component Descriptions

Urban land

MLRA: 79 - Great Bend Sand Plains

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Mahone

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Moderate (About 8.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 60 to 60 inches

Ecological site: Loamy Lowland (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

Ap—0 to 8 inches; loamy fine sand

A—8 to 14 inches; fine sandy loam

Bw1—14 to 20 inches; fine sandy loam

Bw2—20 to 25 inches; very fine sandy loam

Bw3—25 to 33 inches; silt loam

2C—33 to 39 inches; stratified silt loam to fine sandy loam

2Ab1—39 to 42 inches; clay loam

2Ab2—42 to 48 inches; fine sandy loam

2Bwb1—48 to 54 inches; very fine sandy loam

2Bwb2—54 to 61 inches; fine sandy loam

2Ab—61 to 66 inches; fine sandy loam

2Bwb—66 to 71 inches; fine sandy loam

3BC—71 to 78 inches; loamy fine sand

3C—78 to 80 inches; coarse sand

Minor Components

Yaggy

Phase: Protected

Composition: About 5 percent

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Ecological site: Sandy Lowland (pe21-28)

General Considerations: All of the area within the mapunit has been used for development within the city of Hutchinson. Some areas on the edge of the city limits are used for cropland production.

3765—Urban land-Saltcreek-Naron complex, 0 to 1 percent slopes

Map Unit Composition

Urban land: 50 percent

Saltcreek: 35 percent

Naron: 15 percent

Component Descriptions

Urban land

MLRA: 79 - Great Bend Sand Plains

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Saltcreek

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Loamy eolian deposits over alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.0 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 5 inches; fine sandy loam
 Bt1—5 to 10 inches; sandy clay loam
 Bt2—10 to 26 inches; sandy clay loam
 Bt3—26 to 39 inches; fine sandy loam
 2Btb—39 to 56 inches; silty clay
 2Btkb1—56 to 66 inches; silty clay loam
 2Btkb2—66 to 80 inches; silty clay loam

Naron

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Loamy eolian deposits

Slope: 0 to 1 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 9.1 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (irrigated): 2e

Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 7 inches; fine sandy loam
 A—7 to 19 inches; fine sandy loam
 Bt1—19 to 34 inches; loam
 Bt2—34 to 41 inches; sandy clay loam
 Ck—41 to 61 inches; stratified loam to loamy fine sand to fine sandy loam
 C—61 to 80 inches; coarse sand

General Considerations: All of the area within the mapunit has been used for development within the city of Hutchinson. Some areas on the edge of the city limits are used for cropland production.

3766—Urban land-Saxman complex, 0 to 1 percent slopes, Protected

Map Unit Composition

Urban land: 50 percent

Saxman: 45 percent

Minor components: 5 percent

Component Descriptions

Urban land

MLRA: 79 - Great Bend Sand Plains

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very high

Saxman

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Sandy alluvium

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability: Rapid (About 5.95 in/hr)

Available water capacity: Low (About 4.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 36 inches

Runoff class: Very low

Ecological site: Sandy Lowland (pe21-28)

Land capability (irrigated): 2e

Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; loamy sand
 Ap2—4 to 8 inches; loamy sand
 A—8 to 13 inches; loamy sand
 AC—13 to 22 inches; loamy sand
 C1—22 to 30 inches; sand
 C2—30 to 37 inches; sand
 C3—37 to 48 inches; sand
 C4—48 to 54 inches; fine sand
 C5—54 to 80 inches; stratified gravelly coarse sand

Minor Components

Willowbrook

Phase: Protected

Composition: About 5 percent

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: All of the area within the mapunit has been used for development within the city of Hutchinson. Some areas on the edge of the city limits are used for cropland production.

3767—Urban land-Willowbrook complex, 0 to 1 percent slopes, Protected

Map Unit Composition

Urban land: 50 percent
Willowbrook: 45 percent
Minor components: 5 percent

Component Descriptions

Urban land

MLRA: 79 - Great Bend Sand Plains
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high

Willowbrook

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium over sandy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Low (About 5.7 inches)
Shrink-swell potential: Low (About 1.7 LEP)
Flooding hazard: None
Ponding hazard: None
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (irrigated): 2e
Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; fine sandy loam
Ap2—4 to 9 inches; fine sandy loam
AB—9 to 13 inches; fine sandy loam
Bw—13 to 17 inches; fine sandy loam
Bk1—17 to 19 inches; loam
Bk2—19 to 26 inches; fine sandy loam
2C1—26 to 45 inches; coarse sand
2C2—45 to 51 inches; coarse sand
2C3—51 to 80 inches; stratified gravelly coarse sand to sand

Minor Components

Nickerson

Phase: Protected
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Ecological site: Sandy (pe21-28)

Kanza

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent

Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: All of the area within the mapunit has been used for development within the city of Hutchinson. Some areas on the edge of the city limits are used for cropland production.

3768—Urban land-Yaggy complex, 0 to 1 percent slopes, Protected

Map Unit Composition

Urban land: 50 percent
Yaggy: 45 percent
Minor components: 5 percent

Component Descriptions

Urban land

MLRA: 79 - Great Bend Sand Plains
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high

Yaggy

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium over sandy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 4.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Sandy Lowland (pe21-28)
Land capability (irrigated): 2e
Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 5 inches; fine sandy loam
Ap2—5 to 11 inches; fine sandy loam
2C1—11 to 14 inches; stratified very fine sandy loam to silt loam
3C2—14 to 24 inches; fine sand
3C3—24 to 31 inches; fine sand
3C4—31 to 42 inches; fine sand
3C5—42 to 53 inches; stratified gravelly coarse sand
3C6—53 to 69 inches; stratified gravelly coarse sand to sand

3C7—69 to 80 inches; stratified gravelly coarse sand to sand

Minor Components

Imano

Phase: Protected
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Kanza

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: All of the area within the mapunit has been used for development within the city of Hutchinson. Some areas on the edge of the city limits are used for cropland production.

3900—Warnut fine sandy loam, 0 to 1 percent slopes

Map Unit Composition

Warnut: 75 percent
 Minor components: 25 percent

Component Descriptions

Warnut

MLRA: 79 - Great Bend Sand Plains
Landform: Depression on paleoterrace on river valley, interdune on paleoterrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Poorly drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 8.3 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Ponding hazard: Frequent
Depth to seasonal water saturation: About 0 to 0 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)
Land capability (nonirrigated): 2w

Typical Profile:

A—0 to 2 inches; fine sandy loam
 Bt1—2 to 5 inches; loam
 Bt2—5 to 11 inches; sandy clay loam
 Bt3—11 to 15 inches; fine sandy loam
 BC1—15 to 22 inches; fine sandy loam
 BC2—22 to 37 inches; sandy loam
 C1—37 to 60 inches; loamy sand
 C2—60 to 80 inches; sand

Minor Components

Carway

Composition: About 25 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are in rangeland or pasture, but some areas are in cropland. This mapunit is poorly suited for the most commonly grown crops. The hazard for wind and water erosion is slight. The depth to the water table can severely limit most engineering practices.

3926—Water

3966—Willowbrook fine sandy loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Composition

Willowbrook: 90 percent
 Minor components: 10 percent

Component Descriptions

Willowbrook

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium over sandy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Low (About 5.7 inches)
Shrink-swell potential: Low (About 1.7 LEP)
Flooding hazard: Occasional
Ponding hazard: None
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Subirrigated (pe21-28)

Land capability (irrigated): 2e
Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; fine sandy loam
 Ap2—4 to 9 inches; fine sandy loam
 AB—9 to 13 inches; fine sandy loam
 Bw—13 to 17 inches; fine sandy loam
 Bk1—17 to 19 inches; loam
 Bk2—19 to 26 inches; fine sandy loam
 2C1—26 to 45 inches; coarse sand
 2C2—45 to 51 inches; coarse sand
 2C3—51 to 80 inches; stratified gravelly coarse sand to sand

Minor Components

Nickerson

Composition: About 10 percent
Slope: 0 to 1 percent
Drainage class: Moderately well drained
Ecological site: Sandy (pe21-28)

Kanza

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit. Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit.

4004—Yaggy fine sandy loam, 0 to 1 percent slopes

Map Unit Composition

Yaggy: 95 percent
 Minor components: 5 percent

Component Descriptions

Yaggy

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium over sandy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 4.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Very low
Ecological site: Sandy Lowland (pe21-28)
Land capability (irrigated): 2e
Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 5 inches; fine sandy loam
 Ap2—5 to 11 inches; fine sandy loam
 2C1—11 to 14 inches; stratified very fine sandy loam to silt loam
 3C2—14 to 24 inches; fine sand
 3C3—24 to 31 inches; fine sand
 3C4—31 to 42 inches; fine sand
 3C5—42 to 53 inches; stratified gravelly coarse sand
 3C6—53 to 69 inches; stratified gravelly coarse sand to sand
 3C7—69 to 80 inches; stratified gravelly coarse sand to sand

Minor Components

Imano

Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Ecological site: Subirrigated (pe21-28)

Kanza

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit. Most areas are used for pasture or range, some areas are used for

hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit.

4005—Yaggy-Saxman complex, 0 to 2 percent slopes, occasionally flooded

Map Unit Composition

Yaggy: 60 percent
Saxman: 30 percent
Minor components: 10 percent

Component Descriptions

Yaggy

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium over sandy alluvium

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Low (About 4.5 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Very low

Ecological site: Sandy Lowland (pe21-28)

Land capability (irrigated): 2e

Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 5 inches; fine sandy loam
Ap2—5 to 11 inches; fine sandy loam
2C1—11 to 14 inches; stratified very fine sandy loam to silt loam
3C2—14 to 24 inches; fine sand
3C3—24 to 31 inches; fine sand
3C4—31 to 42 inches; fine sand
3C5—42 to 53 inches; stratified gravelly coarse sand
3C6—53 to 69 inches; stratified gravelly coarse sand to sand
3C7—69 to 80 inches; stratified gravelly coarse sand to sand

Saxman

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Sandy alluvium

Slope: 0 to 2 percent

Drainage class: Moderately well drained

Slowest permeability: Rapid (About 5.95 in/hr)

Available water capacity: Low (About 4.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: About 24 to 36 inches

Runoff class: Very low

Ecological site: Sandy Lowland (pe21-28)

Land capability (irrigated): 2e

Land capability (nonirrigated): 3e

Typical Profile:

Ap1—0 to 4 inches; loamy sand
Ap2—4 to 8 inches; loamy sand
A—8 to 13 inches; loamy sand
AC—13 to 22 inches; loamy sand
C1—22 to 30 inches; sand
C2—30 to 37 inches; sand
C3—37 to 48 inches; sand
C4—48 to 54 inches; fine sand
C5—54 to 80 inches; stratified gravelly coarse sand

Minor Components

Solvay

Composition: About 10 percent

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Ecological site: Subirrigated (pe21-28)

Kanza

Slope: 0 to 2 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

Ninnescah

Slope: 0 to 2 percent

Drainage class: Poorly drained

Ecological site: Subirrigated (pe21-28)

General Considerations: Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit.

4110—Zellmont And Poxmash sandy loams, 0 to 3 percent slopes

Map Unit Composition

Zellmont: 70 percent
Poxmash: 30 percent

C1—20 to 33 inches; sand
C2—33 to 48 inches; sand
2Cr—48 to 80 inches; weathered bedrock

Component Descriptions

Zellmont

MLRA: 79 - Great Bend Sand Plains

Landform: Strath terrace on river valley

Parent material: Loamy alluvium over residuum weathered from permian shale

Slope: 0 to 3 percent

Depth to restrictive feature: 20 to 39 inches to bedrock (paralithic)

Drainage class: Well drained

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

Available water capacity: Low (About 4.9 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

Ap—0 to 8 inches; sandy loam
Bt1—8 to 18 inches; sandy clay loam
Bt2—18 to 26 inches; sandy clay loam
2C—26 to 32 inches; loam
Cr—32 to 80 inches; weathered bedrock

Poxmash

MLRA: 79 - Great Bend Sand Plains

Landform: Strath terrace on river valley

Parent material: Alluvium over residuum weathered from permian shale

Slope: 0 to 3 percent

Depth to restrictive feature: 48 to 53 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: Moderately rapid (About 2.00 in/hr)

Available water capacity: Low (About 4.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 3e

Typical Profile:

Ap—0 to 5 inches; sandy loam
A—5 to 9 inches; sandy loam
Bt1—9 to 15 inches; sandy loam
Bt2—15 to 20 inches; loamy sand

Minor Components Unnamed Wet Soils

General Considerations: Most areas are used as cropland, but some areas are in pasture or range. Some areas are also in the Conservation Reserve Program. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to bedrock can limit some of the engineering uses of these soils.