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**County specific computer generated reports.*

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Edwards County, Kansas: Published

Map symbol	Soil name	Acres	Percent
057AN	Roxbury Silt Loam, Channeled-----	17	*
057LA	Las Animas Sandy Loam, Occasionally Flooded-----	1	*
057LC	Las Animas-Lincoln Complex, Occasionally Flooded-----	31	*
097AT	Attica Loamy Fine Sand, 1 To 4 Percent Slopes-----	768	0.2
097AX	Attica-Carwile Complex, 0 To 4 Percent Slopes-----	1,332	0.3
097TH	Tivoli Fine Sand, 15 To 30 Percent Slopes-----	7,693	1.9
145HC	Harney Silty Clay Loam, 1 To 3 Percent Slopes, Eroded-----	50	*
145HD	Harney-Uly Complex, 3 To 6 Percent Slopes, Eroded-----	1,536	0.4
145RO	Roxbury Silt Loam, Frequently Flooded-----	107	*
145UC	Uly Silt Loam, 3 To 6 Percent Slopes-----	50	*
151KP	Kanza-Plevna Complex, Frequently Flooded-----	437	0.1
185PR	Pratt-Carwile Complex, 0 To 8 Percent Slopes-----	96	*
Aa	Attica Fine Sandy Loam, 0 To 1 Percent Slopes-----	4,424	1.1
Ab	Attica Fine Sandy Loam, 1 To 3 Percent Slopes-----	35,152	8.8
Ac	Attica-Carwile Fine Sandy Loams, 0 To 3 Percent Slopes-----	7,793	2.0
ARR	Arkansas River-----	984	0.2
Bk	Coly-Tobin Silt Loams, 0 To 15 Percent Slopes-----	4,882	1.2
BOP	Borrow Pits-----	157	*
Cc	Campus-Canlon Complex, 6 To 15 Percent Slopes-----	316	*
Cd	Canadian Fine Sandy Loam, Rarely Flooded-----	4,961	1.2
Cf	Darr Fine Sandy Loam, Rarely Flooded-----	1,909	0.5
Cr	Carwile Fine Sandy Loam, 0 To 1 Percent Slopes-----	19,284	4.8
Cs	Carwile-Drummond Complex, 0 To 1 Percent Slopes-----	2,154	0.5
Fa	Farnum Loam, 0 To 1 Percent Slopes-----	22,383	5.6
Fr	Farnum Loam, 1 To 3 Percent Slopes-----	2,723	0.7
Ha	Harney Silt Loam, 0 To 1 Percent Slopes-----	48,727	12.2
Hb	Harney Silt Loam, 1 To 3 Percent Slopes-----	16,079	4.0
Hc	Harney Silt Loam, 3 To 6 Percent Slopes-----	3,641	0.9
Hd	Harney-Uly Complex, 1 To 3 Percent Slopes-----	1,233	0.3
He	Harney-Uly Complex, 3 To 6 Percent Slopes-----	9,646	2.4
Hg	Holdrege Silt Loam, 1 To 3 Percent Slopes-----	2,362	0.6
Hh	Holdrege Silt Loam, 3 To 6 Percent Slopes-----	1,081	0.3
Ho	Hord Silt Loam, Rarely Flooded-----	9,663	2.4
La	Las Animas Loamy Fine Sand, Occasionally Flooded-----	837	0.2
Lh	Lesho Clay Loam, Occasionally Flooded-----	4,337	1.1
Lk	Lubbock Silt Loam, 0 To 1 Percent Slopes-----	10,250	2.6
Na	Naron Loamy Fine Sand, 0 To 1 Percent Slopes-----	729	0.2
Nf	Naron Fine Sandy Loam, 0 To 1 Percent Slopes-----	32,133	8.1
Ng	Naron Fine Sandy Loam, 1 To 3 Percent Slopes-----	20,781	5.2
Ns	Ness Clay-----	855	0.2
Pa	Platte Soils, Occasionally Flooded-----	4,777	1.2
Pe	Plevna Fine Sandy Loam, Frequently Flooded-----	251	*
Pf	Pratt Loamy Fine Sand, 4 To 10 Percent Slopes-----	12,636	3.2
Pg	Pratt Loamy Fine Sand, 1 To 4 Percent Slopes-----	22,722	5.7
Pr	Pratt-Lincoln Loamy Fine Sands, 0 To 4 Percent Slopes-----	1,247	0.3
PRR	Pratt Loamy Fine Sand, 1 To 5 Percent Slopes-----	4,593	1.2
PSS	Pratt Loamy Fine Sand, 5 To 10 Percent Slopes-----	3,825	1.0
Pt	Pratt-Tivoli Loamy Fine Sands, 5 To 15 Percent Slopes-----	28,835	7.2
SAP	Sand Pits-----	109	*
Ta	Tabler Clay Loam, 0 To 1 Percent Slopes-----	8,271	2.1
Tb	Tabler-Drummond Complex, 0 To 1 Percent Slopes-----	2,791	0.7
Tf	Tivoli Fine Sand, 10 To 20 Percent Slopes-----	5,001	1.3
To	Tobin Silt Loam, Occasionally Flooded-----	2,514	0.6
W	Water-----	19	*
Wa	Waldeck Fine Sandy Loam, Occasionally Flooded-----	3,033	0.8
Wc	Waldeck Loam, Occasionally Flooded-----	2,742	0.7
Za	Zenda Clay Loam, Occasionally Flooded-----	9,701	2.4
Ze	Lesho Clay Loam, Saline, Occasionally Flooded-----	2,147	0.5
Zs	Zenda-Drummond Complex, Occasionally Flooded-----	1,131	0.3
	Total-----	397,939	100.0

* Less than 0.1 percent.

Nontechnical Soil Descriptions
Edwards County, Kansas

Nontechnical soil descriptions describe soil properties or management considerations specific to a soil map unit or group of map units, shown in the NonTechnical Descriptions report. These descriptions are written in terminology that Non-technical users of soil survey information can understand. Nontechnical soil descriptions are a powerful tool for creating reports. These high quality, easy to read reports can be generated by conservation planners and other NRCS employees for distribution to land users. Soil map unit descriptions and National Soil Information System records are the basis for these descriptions.

057AN Roxbury Silt Loam, Channeled

Roxbury soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is low. The parent material consists of calcareous fine-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a moderate shrink swell potential. This soil is frequently flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 5w.

057LA Las Animas Sandy Loam, Occasionally Flooded

Las Animas, occasionally flooded, soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is negligible. The parent material consists of loamy and/or sandy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 27 inches. The soil contains a maximum amount of 10 percent calcium carbonate. This soil contains a very slightly saline horizon. This soil is in the Saline Subirrigated (pe20-26) range site. This soil is in the irrigated land capability class 3w. It is in the nonirrigated land capability classification 3w.

057LC Las Animas-Lincoln Complex, Occasionally Flooded

Las Animas soil makes up 80 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of loamy and/or sandy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 27 inches. The soil contains a maximum amount of 10 percent calcium carbonate. This soil contains a very slightly saline horizon. This soil is in the Saline Subirrigated (pe20-26) range site. This soil is in the irrigated land capability class 3w. It is in the nonirrigated land capability classification 4w.

Lincoln soil makes up 20 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of loamy and/or sandy alluvium. This soil is somewhat excessively drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 66 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Sandy Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 6s.

097AT Attica Loamy Fine Sand, 1 To 4 Percent Slopes

Attica soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of eolian deposits. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

097AX Attica-Carwile Complex, 0 To 4 Percent Slopes

Attica soil makes up 60 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping dune field on paleoterrace. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

Carwile soil makes up 40 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level depression. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 0 inches. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2w.

Nontechnical Soil Descriptions--Continued
Edwards County, Kansas

097TH Tivoli Fine Sand, 15 To 30 Percent Slopes

Tivoli soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to steep dune on paleoterrace on river valley. The runoff class is medium. The parent material consists of sandy eolian deposits. This soil is excessively drained. The slowest permeability is rapid. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Choppy Sands (pe21-28) range site. It is in the nonirrigated land capability classification 7e.

145HC Harney Silty Clay Loam, 1 To 3 Percent Slopes, Eroded

Harney soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

145HD Harney-Uly Complex, 3 To 6 Percent Slopes, Eroded

Harney soil makes up 70 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

Uly soil makes up 30 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

145RO Roxbury Silt Loam, Frequently Flooded

Roxbury soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is low. The parent material consists of calcareous fine-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a moderate shrink swell potential. This soil is frequently flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 5w.

145UC Uly Silt Loam, 3 To 6 Percent Slopes

Uly soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

151KP Kanza-Plevna Complex, Frequently Flooded

Kanza soil makes up 50 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is poorly drained. The slowest permeability is rapid. It has a low available water capacity and a low shrink swell potential. This soil is frequently flooded and is not ponded. The top of the seasonal high water table is at 18 inches. It is in the nonirrigated land capability classification 5w.

Plevna soil makes up 50 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is frequently flooded and is not ponded. The top of the seasonal high water table is at 12 inches. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 5w.

185PR Pratt-Carwile Complex, 0 To 8 Percent Slopes

Pratt soil makes up 60 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping to strongly sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 4e.

Nontechnical Soil Descriptions--Continued
Edwards County, Kansas

Carwile soil makes up 40 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level depression on paleoterrace on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is frequent ponded. The top of the seasonal high water table is at 0 inches. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2w.

Aa Attica Fine Sandy Loam, 0 To 1 Percent Slopes

Attica soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level dune on paleoterrace on river valley. The runoff class is negligible. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

Ab Attica Fine Sandy Loam, 1 To 3 Percent Slopes

Attica soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

Ac Attica-Carwile Fine Sandy Loams, 0 To 3 Percent Slopes

Attica soil makes up 75 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level to gently sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 18 inches. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

Carwile soil makes up 25 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level depression. The runoff class is negligible. The parent material consists of loamy alluvium and/or eolian deposits. This soil is somewhat poorly drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 0 inches. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2w.

Bk Coly-Tobin Silt Loams, 0 To 15 Percent Slopes

Coly soil makes up 75 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping to moderately steep break on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Limy Upland (pe20-26) range site. This soil is in the irrigated land capability class 4e. It is in the nonirrigated land capability classification 4e.

Tobin soil makes up 25 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is low. The parent material consists of silty and/or loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 2w.

Cc Campus-Canlon Complex, 6 To 15 Percent Slopes

Campus soil makes up 75 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep break on tableland. The runoff class is medium. The parent material consists of old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum. The soil is 20 to 40 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Canlon soil makes up 25 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep break on tableland. The runoff class is medium. The parent material consists of calcareous loamy residuum weathered from sandstone. The soil is 10 to 20 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Shallow Limy (pe20-26) range site. It is in the nonirrigated land capability classification 6s.

Nontechnical Soil Descriptions--Continued
Edwards County, Kansas

Cd Canadian Fine Sandy Loam, Rarely Flooded

Canadian soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of sandy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy Terrace (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

Cf Darr Fine Sandy Loam, Rarely Flooded

Darr soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of sandy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy Terrace (pe21-28) range site. It is in the nonirrigated land capability classification 2e.

Cr Carwile Fine Sandy Loam, 0 To 1 Percent Slopes

Carwile soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level depression. The runoff class is negligible. The parent material consists of loamy alluvium and/or eolian deposits. This soil is somewhat poorly drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 0 inches. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2w.

Cs Carwile-Drummond Complex, 0 To 1 Percent Slopes

Carwile soil makes up 90 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level depression on paleoterrace on river valley. The runoff class is negligible. The parent material consists of alluvium. This soil is somewhat poorly drained. The slowest permeability is slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is frequent ponded. The top of the seasonal high water table is at 0 inches. This soil is in the Sandy (pe21-28) range site. It is in the nonirrigated land capability classification 2w.

Drummond soil makes up 10 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level terrace on river valley. The runoff class is negligible. The parent material consists of clayey and/or loamy alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 48 inches. This soil contains a slightly saline horizon, it has a horizon that is strongly sodic. This soil is in the Saline Lowland (pe21-28) range site. It is in the nonirrigated land capability classification 6s.

Fa Farnum Loam, 0 To 1 Percent Slopes

Farnum soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace on river valley. The runoff class is very low. The parent material consists of alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe21-28) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

Fr Farnum Loam, 1 To 3 Percent Slopes

Farnum soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping paleoterrace on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Upland (pe21-28) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Ha Harney Silt Loam, 0 To 1 Percent Slopes

Harney soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level divide on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

Hb Harney Silt Loam, 1 To 3 Percent Slopes

Harney soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Nontechnical Soil Descriptions--Continued
Edwards County, Kansas

Hc Harney Silt Loam, 3 To 6 Percent Slopes

Harney soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

Hd Harney-Uly Complex, 1 To 3 Percent Slopes

Harney soil makes up 80 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Uly soil makes up 20 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping summit paleoterrace on plains. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

He Harney-Uly Complex, 3 To 6 Percent Slopes

Harney soil makes up 70 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

Uly soil makes up 30 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

Hg Holdrege Silt Loam, 1 To 3 Percent Slopes

Holdrege soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of calcareous loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Hh Holdrege Silt Loam, 3 To 6 Percent Slopes

Holdrege soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on upland. The runoff class is medium. The parent material consists of calcareous loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

Ho Hord Silt Loam, Rarely Flooded

Hord soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Terrace (pe20-26) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

Nontechnical Soil Descriptions--Continued
Edwards County, Kansas

La Las Animas Loamy Fine Sand, Occasionally Flooded

Las Animas soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of loamy and/or sandy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 27 inches. The soil contains a maximum amount of 10 percent calcium carbonate. This soil contains a very slightly saline horizon, it has a horizon that is slightly sodic. This soil is in the Sandy Terrace (pe21-28) range site. This soil is in the irrigated land capability class 3w. It is in the nonirrigated land capability classification 3w.

Lh Lesho Clay Loam, Occasionally Flooded

Lesho soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of sandy and/or loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately slow. It has a moderate available water capacity and a moderate shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil contains a very slightly saline horizon, it has a horizon that is slightly sodic. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 3w.

Lk Lubbock Silt Loam, 0 To 1 Percent Slopes

Lubbock soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level plain on tableland. The runoff class is negligible. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe21-28) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

Na Naron Loamy Fine Sand, 0 To 1 Percent Slopes

Naron soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level dune on paleoterrace on river valley. The runoff class is negligible. The parent material consists of loamy eolian deposits. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2e.

Nf Naron Fine Sandy Loam, 0 To 1 Percent Slopes

Naron soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level dune on paleoterrace on river valley. The runoff class is negligible. The parent material consists of loamy eolian deposits. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe21-28) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2e.

Ng Naron Fine Sandy Loam, 1 To 3 Percent Slopes

Naron soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping dune on paleoterrace on river valley. The runoff class is low. The parent material consists of loamy eolian deposits. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sandy (pe21-28) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 3e.

Ns Ness Clay

Ness soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level playa on tableland. The runoff class is negligible. The parent material consists of clayey alluvium and/or eolian deposits. This soil is poorly drained. The slowest permeability is very slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is frequent ponded. The top of the seasonal high water table is at 0 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Lakebed (pe20-26) range site. It is in the nonirrigated land capability classification 6w.

Pa Platte Soils, Occasionally Flooded

Platte soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderate. It has a low available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 18 inches. This soil is in the Subirrigated (pe21-28) range site. This soil is in the irrigated land capability class 4w. It is in the nonirrigated land capability classification 4w.

Nontechnical Soil Descriptions--Continued
Edwards County, Kansas

Pe Plevna Fine Sandy Loam, Frequently Flooded
Plevna soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain. The runoff class is negligible. The parent material consists of loamy alluvium. This soil is poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is frequently flooded and is not ponded. The top of the seasonal high water table is at 12 inches. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 5w.

Pf Pratt Loamy Fine Sand, 4 To 10 Percent Slopes

Pratt soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 4e.

Pg Pratt Loamy Fine Sand, 1 To 4 Percent Slopes

Pratt soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping dune on paleoterrace on river valley. The runoff class is negligible. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

Pr Pratt-Lincoln Loamy Fine Sands, 0 To 4 Percent Slopes

Pratt soil makes up 65 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level to moderately sloping dune on paleoterrace on river valley. The runoff class is negligible. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

Lincoln soil makes up 35 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is negligible. The parent material consists of sandy alluvium. This soil is somewhat excessively drained. The slowest permeability is rapid. It has a low available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 66 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Sands (pe21-28) range site. It is in the nonirrigated land capability classification 6w.

PRR Pratt Loamy Fine Sand, 1 To 5 Percent Slopes

Pratt soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

PSS Pratt Loamy Fine Sand, 5 To 10 Percent Slopes

Pratt soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 4e.

Pt Pratt-Tivoli Loamy Fine Sands, 5 To 15 Percent Slopes

Pratt soil makes up 65 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is well drained. The slowest permeability is rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 4e.

Tivoli soil makes up 35 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is excessively drained. The slowest permeability is rapid. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Sands (pe21-28) range site. It is in the nonirrigated land capability classification 7e.

Nontechnical Soil Descriptions--Continued
Edwards County, Kansas

Ta Tabler Clay Loam, 0 To 1 Percent Slopes

Tabler soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level plain on tableland. The runoff class is negligible. The parent material consists of calcareous clayey and/or loamy alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Clay Upland (pe21-28) range site. It is in the nonirrigated land capability classification 2s.

Tb Tabler-Drummond Complex, 0 To 1 Percent Slopes

Tabler soil makes up 90 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level plain on tableland. The runoff class is negligible. The parent material consists of calcareous clayey and/or loamy alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a high available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Clay Upland (pe21-28) range site. It is in the nonirrigated land capability classification 2s.

Drummond soil makes up 10 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace. The runoff class is negligible. The parent material consists of clayey and/or loamy alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 48 inches. The soil contains a maximum amount of 5 percent calcium carbonate. This soil contains a slightly saline horizon. This soil is in the Saline Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 6s.

Tf Tivoli Fine Sand, 10 To 20 Percent Slopes

Tivoli soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a strongly sloping to moderately steep dune on paleoterrace on river valley. The runoff class is very low. The parent material consists of sandy eolian deposits. This soil is excessively drained. The slowest permeability is rapid. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Choppy Sands (pe21-28) range site. It is in the nonirrigated land capability classification 7e.

To Tobin Silt Loam, Occasionally Flooded

Tobin soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a moderate shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. This soil is in the Loamy Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 2w.

Wa Waldeck Fine Sandy Loam, Occasionally Flooded

Waldeck soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 3w.

Wc Waldeck Loam, Occasionally Flooded

Waldeck soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 3w.

Za Zenda Clay Loam, Occasionally Flooded

Zenda soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil contains a very slightly saline horizon. This soil is in the Subirrigated (pe21-28) range site. It is in the nonirrigated land capability classification 2w.

Ze Lesho Clay Loam, Saline, Occasionally Flooded

Lesho soil makes up 100 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is low. The parent material consists of loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil contains a moderately saline horizon, it has a horizon that is slightly sodic. This soil is in the Saline Lowland (pe21-28) range site. This soil is in the irrigated land capability class 3s. It is in the nonirrigated land capability classification 4s.

NONTECHNICAL SOIL DESCRIPTIONS--Continued
Edwards County, Kansas

Zs Zenda-Drummond Complex, Occasionally Flooded

Zenda soil makes up 85 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is negligible. The parent material consists of loamy alluvium. This soil is somewhat poorly drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 36 inches. This soil contains a very slightly saline horizon. This soil is in the Loamy Lowland (pe21-28) range site. It is in the nonirrigated land capability classification 2w.

Drummond soil makes up 15 percent of the map unit. This map unit is in the Great Bend Sand Plains Major Land Resource Area. This soil occurs on a nearly level paleoterrace. The runoff class is low. The parent material consists of clayey and/or loamy alluvium. This soil is moderately well drained. The slowest permeability is very slow. It has a moderate available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The top of the seasonal high water table is at 48 inches. This soil contains a slightly saline horizon, it has a horizon that is strongly sodic. This soil is in the Saline Lowland (pe21-28) range site. It is in the nonirrigated land capability classification 6s.

**057AN—Roxbury silt loam,
channeled****Map Unit Composition**

Roxbury: 100 percent

Component Descriptions**Roxbury**

MLRA: 73 - Rolling Plains and Breaks

Landform: Flood plain on river valley

Parent material: Calcareous fine-silty alluvium

Slope: 0 to 2 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very high (About 13.1 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Frequent

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Lowland (pe20-26)

Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 20 inches; silt loam

H2—20 to 52 inches; silt loam

H3—52 to 60 inches; silt loam

**057LA—Las Animas sandy loam,
occasionally flooded****Map Unit Composition**

Las Animas: 100 percent

Component Descriptions**Las Animas**

MLRA: 73 - Rolling Plains and Breaks

Landform: Flood plain on river valley

Parent material: Loamy and/or sandy alluvium

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 6.8 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 18 to 36 inches

Runoff class: Negligible

Ecological site: Saline Subirrigated (pe20-26)

Land capability (irrigated): 3w

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 11 inches; sandy loam, sandy loam

H2—11 to 32 inches; sandy loam

H3—32 to 60 inches; stratified gravelly sand

Minor Components**Unnamed Hydric Soils****057LC—Las Animas-Lincoln
complex, occasionally flooded****Map Unit Composition**

Las Animas: 80 percent

Lincoln: 20 percent

Component Descriptions**Las Animas**

MLRA: 73 - Rolling Plains and Breaks

Landform: Flood plain on river valley

Parent material: Loamy and/or sandy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Moderately rapid (About 2.00 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 18 to 36 inches

Runoff class: Negligible

Ecological site: Saline Subirrigated (pe20-26)

Land capability (irrigated): 3w

Land capability (nonirrigated): 4w

Typical Profile:

H1—0 to 11 inches; sandy loam

H2—11 to 32 inches; stratified loamy fine sand to very fine sandy loam

H3—32 to 60 inches; stratified coarse sand to sand

Lincoln

MLRA: 73 - Rolling Plains and Breaks

Landform: Flood plain on river valley

Parent material: Loamy and/or sandy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat excessively drained

Slowest permeability: Rapid (About 6.00 in/hr)

Available water capacity: Moderate (About 6.8 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 60 to 72 inches

Runoff class: Negligible

Ecological site: Sandy Lowland (pe20-26)

Land capability (nonirrigated): 6s

Typical Profile:

H1—0 to 6 inches; sand

H2—6 to 60 inches; stratified fine sand to clay loam

Minor Components

Unnamed Hydric Soils

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 10 inches; loamy fine sand

H2—10 to 30 inches; fine sandy loam

H3—30 to 60 inches; fine sandy loam

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

Unnamed Wet Soils

Phase: Sandy, Drainageway

097AX—Attica-Carwile complex, 0 to 4 percent slopes

Map Unit Composition

Attica: 60 percent

Carwile: 40 percent

097AT—Attica loamy fine sand, 1 to 4 percent slopes

Map Unit Composition

Attica: 100 percent

Component Descriptions

Attica

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Eolian deposits

Slope: 1 to 4 percent

Drainage class: Well drained

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

Available water capacity: Moderate (About 7.7 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)

Component Descriptions

Attica

MLRA: 79 - Great Bend Sand Plains

Landform: Dune field on paleoterrace

Parent material: Sandy eolian deposits

Slope: 1 to 4 percent

Drainage class: Well drained

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

Available water capacity: Moderate (About 7.7 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:

H1—0 to 10 inches; loamy fine sand

H2—10 to 30 inches; fine sandy loam

H3—30 to 60 inches; fine sandy loam

Carwile

MLRA: 79 - Great Bend Sand Plains

Landform: Depression

Parent material: Alluvium

Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (About 0.06 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: About 0 to 0 inches
Runoff class: Negligible
Ecological site: Sandy (pe21-28)
Land capability (nonirrigated): 2w

Typical Profile:
 H1—0 to 15 inches; fine sandy loam
 H2—15 to 36 inches; clay
 H3—36 to 60 inches; clay

Minor Components
Unnamed Wet Soils
Phase: Sandy, Depression

Unnamed Wet Soils
Phase: Sandy, Drainageway

097TH—Tivoli fine sand, 15 to 30 percent slopes

Map Unit Composition

Tivoli: 100 percent

Component Descriptions

Tivoli
MLRA: 73 - Rolling Plains and Breaks
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits
Slope: 10 to 30 percent
Drainage class: Excessively drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Very low (About 3.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Choppy Sands (pe21-28)
Land capability (nonirrigated): 7e

Typical Profile:
 H1—0 to 6 inches; fine sand
 H2—6 to 60 inches; fine sand

145HC—Harney silty clay loam, 1 to 3 percent slopes, eroded

Map Unit Composition

Harney: 100 percent

Component Descriptions

Harney
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
 H1—0 to 7 inches; silty clay loam
 H2—7 to 40 inches; silty clay loam
 H3—40 to 60 inches; silt loam

145HD—Harney-Uly complex, 3 to 6 percent slopes, eroded

Map Unit Composition

Harney: 70 percent
 Uly: 30 percent

Component Descriptions

Harney

MLRA: 73 - Rolling Plains and Breaks

Landform: Plain on tableland

Parent material: Loess

Slope: 3 to 6 percent

Drainage class: Well drained

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

Available water capacity: High (About 10.6 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Loamy Upland (pe20-26)

Land capability (nonirrigated): 4e

Typical Profile:

- H1—0 to 7 inches; silty clay loam
- H2—7 to 40 inches; silty clay loam
- H3—40 to 60 inches; silt loam

Uly

MLRA: 73 - Rolling Plains and Breaks

Landform: Plain on tableland

Parent material: Loess

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very high (About 12.0 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Loamy Upland (pe20-26)

Land capability (nonirrigated): 4e

Typical Profile:

- H1—0 to 10 inches; silt loam
- H2—10 to 18 inches; silt loam
- H3—18 to 60 inches; silt loam

Minor Components

Unnamed Hydric Soils

Unnamed Hydric Soils

145RO—Roxbury silt loam, frequently flooded

Map Unit Composition

Roxbury: 100 percent

Component Descriptions

Roxbury

MLRA: 73 - Rolling Plains and Breaks

Landform: Flood plain on river valley

Parent material: Calcareous fine-silty alluvium

Slope: 0 to 2 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very high (About 12.2 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Frequent

Depth to seasonal water saturation: More than 6 feet

Runoff class: Low

Ecological site: Loamy Lowland (pe20-26)

Land capability (nonirrigated): 5w

Typical Profile:

- H1—0 to 14 inches; silt loam
- H2—14 to 34 inches; silt loam
- H3—34 to 60 inches; silt loam

Minor Components

Ness

Unnamed Hydric Soils

Unnamed Wet Soils

Phase: Loamy, Depression

Unnamed Wet Soils

Phase: Loamy, Drainageway

145UC—Uly silt loam, 3 to 6 percent slopes

Map Unit Composition

Uly: 100 percent

Component Descriptions

Uly

MLRA: 73 - Rolling Plains and Breaks

Landform: Plain on tableland

Parent material: Loess

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very high (About 12.0 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Loamy Upland (pe20-26)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 10 inches; silt loam

H2—10 to 18 inches; silt loam

H3—18 to 60 inches; silt loam

Minor Components

Unnamed Wet Soils

Phase: Loamy, Drainageway

Depth to seasonal water saturation: About 0 to 36 inches

Runoff class: Negligible

Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 11 inches; loamy fine sand

H2—11 to 40 inches; fine sand

Plevna

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Poorly drained

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

Available water capacity: Moderate (About 6.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Frequent

Depth to seasonal water saturation: About 0 to 24 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 10 inches; fine sandy loam

H2—10 to 40 inches; fine sandy loam

H3—40 to 60 inches; fine sand

151KP—Kanza-Plevna complex, frequently flooded

Map Unit Composition

Kanza: 50 percent

Plevna: 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: Rapid (About 5.95 in/hr)

Available water capacity: Low (About 3.8 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Frequent

185PR—Pratt-Carwile complex, 0 to 8 percent slopes

Map Unit Composition

Pratt: 60 percent

Carwile: 40 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 8 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: Very low

Ecological site: Sands (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 8 inches; loamy fine sand

H2—8 to 28 inches; loamy fine sand

H3—28 to 60 inches; loamy fine sand

Carwile

MLRA: 79 - Great Bend Sand Plains

Landform: Depression on paleoterrace on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.4 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: Negligible

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 7 inches; fine sandy loam

H2—7 to 14 inches; sandy clay loam

H3—14 to 38 inches; sandy clay

H4—38 to 60 inches; sandy clay loam

Minor Components

Unnamed Hydric Soils

Unnamed Wet Soils

Phase: Sandy, Depression

Aa—Attica fine sandy loam, 0 to 1 percent slopes

Map Unit Composition

Attica: 100 percent

Component Descriptions

Attica

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits

Slope: 0 to 1 percent

Drainage class: Well drained

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

Available water capacity: Moderate (About 8.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 11 inches; fine sandy loam

H2—11 to 30 inches; fine sandy loam

H3—30 to 60 inches; loamy fine sand

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

Ab—Attica fine sandy loam, 1 to 3 percent slopes

Map Unit Composition

Attica: 100 percent

Component Descriptions

Attica

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

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

Available water capacity: Moderate (About 8.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 11 inches; fine sandy loam

H2—11 to 30 inches; fine sandy loam

H3—30 to 60 inches; loamy fine sand

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

Ac—Attica-Carwile fine sandy loams, 0 to 3 percent slopes

Map Unit Composition

Attica: 75 percent

Carwile: 25 percent

Component Descriptions

Attica

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

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

Available water capacity: Moderate (About 8.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 12 to 24 inches

Runoff class: Very low

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 11 inches; fine sandy loam

H2—11 to 30 inches; fine sandy loam

H3—30 to 60 inches; loamy fine sand

Carwile

MLRA: 79 - Great Bend Sand Plains

Landform: Depression

Parent material: Loamy alluvium and/or eolian deposits

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Slow (About 0.06 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: About 0 to 0 inches

Runoff class: Negligible

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 11 inches; fine sandy loam

H2—11 to 17 inches; sandy clay loam

H3—17 to 42 inches; clay

H4—42 to 60 inches; clay loam

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

ARR—Arkansas River

Bk—Coly-Tobin silt loams, 0 to 15 percent slopes

Map Unit Composition

Coly: 75 percent

Tobin: 25 percent

Component Descriptions

Coly

MLRA: 73 - Rolling Plains and Breaks

Landform: Break on tableland

Parent material: Loess

Slope: 1 to 15 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 11.9 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
 H1—0 to 6 inches; silt loam
 H2—6 to 60 inches; silty clay loam

Tobin

MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Silty and/or loamy alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe20-26)
Land capability (nonirrigated): 2w

Typical Profile:
 H1—0 to 15 inches; silt loam
 H2—15 to 60 inches; silty clay loam

Minor Components

Unnamed Wet Soils

Phase: Sandy, Drainageway

BOP—Borrow Pits

Cc—Campus-Canlon complex, 6 to 15 percent slopes

Map Unit Composition

Campus: 75 percent
 Canlon: 25 percent

Component Descriptions

Campus

MLRA: 73 - Rolling Plains and Breaks
Landform: Break on tableland
Parent material: Old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well 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: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
 H1—0 to 8 inches; loam
 H2—8 to 17 inches; clay loam
 H3—17 to 24 inches; clay loam
 R—24 to 24 inches; unweathered bedrock

Canlon

MLRA: 73 - Rolling Plains and Breaks
Landform: Break on tableland
Parent material: Calcareous loamy residuum weathered from sandstone
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 2.1 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 Limy (pe20-26)
Land capability (nonirrigated): 6s

Typical Profile:
 H1—0 to 4 inches; loam
 H2—4 to 11 inches; loam
 R—11 to 11 inches; unweathered bedrock

Cd—Canadian fine sandy loam, rarely flooded**Map Unit Composition**

Canadian: 100 percent

Component Descriptions**Canadian**

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Sandy alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

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

Available water capacity: Moderate (About 8.3 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Sandy Terrace (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 19 inches; fine sandy loam

H2—19 to 40 inches; fine sandy loam

H3—40 to 60 inches; fine sandy loam

Cf—Darr fine sandy loam, rarely flooded**Map Unit Composition**

Darr: 100 percent

Component Descriptions**Darr**

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Sandy alluvium

Slope: 0 to 1 percent

Drainage class: Well drained

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

Available water capacity: Moderate (About 8.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Sandy Terrace (pe21-28)

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 19 inches; fine sandy loam

H2—19 to 32 inches; fine sandy loam

H3—32 to 60 inches; fine sandy loam

Cr—Carwile fine sandy loam, 0 to 1 percent slopes**Map Unit Composition**

Carwile: 100 percent

Component Descriptions**Carwile**

MLRA: 79 - Great Bend Sand Plains

Landform: Depression

Parent material: Loamy alluvium and/or eolian deposits

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Slow (About 0.06 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: About 0 to 0 inches

Runoff class: Negligible

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 11 inches; fine sandy loam

H2—11 to 17 inches; sandy clay loam

H3—17 to 42 inches; clay

H4—42 to 60 inches; clay loam

Minor Components**Unnamed Wet Soils**

Phase: Loamy, Depression

Cs—Carwile-Drummond complex, 0 to 1 percent slopes

Map Unit Composition

Carwile: 90 percent
Drummond: 10 percent

Component Descriptions

Carwile

MLRA: 79 - Great Bend Sand Plains

Landform: Depression on paleoterrace on river valley

Parent material: Alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Slow (About 0.06 in/hr)

Available water capacity: High (About 9.4 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: Negligible

Ecological site: Sandy (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 11 inches; fine sandy loam
H2—11 to 17 inches; sandy clay loam
H3—17 to 42 inches; clay
H4—42 to 60 inches; clay loam

Drummond

MLRA: 79 - Great Bend Sand Plains

Landform: Terrace on river valley

Parent material: Clayey and/or loamy 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 7.8 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 72 inches

Runoff class: Negligible

Ecological site: Saline Lowland (pe21-28)

Land capability (nonirrigated): 6s

Typical Profile:

H1—0 to 8 inches; loam, clay loam

H2—8 to 60 inches; clay

Minor Components

Unnamed Wet Soils

Phase: Loamy, Depression

Fa—Farnum loam, 0 to 1 percent slopes

Map Unit Composition

Farnum: 100 percent

Component Descriptions

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 10.4 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 (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 2c

Typical Profile:

H1—0 to 14 inches; loam
H2—14 to 26 inches; loam
H3—26 to 42 inches; clay loam
H4—42 to 60 inches; fine sandy loam

Minor Components

Unnamed Wet Soils

Phase: Loamy, Depression

Fr—Farnum loam, 1 to 3 percent slopes

Map Unit Composition

Farnum: 100 percent

Component Descriptions

Farnum

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 10.0 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:

H1—0 to 8 inches; loam

H2—8 to 16 inches; loam

H3—16 to 37 inches; clay loam

H4—37 to 60 inches; loam

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 (pe20-26)

Land capability (irrigated): 1

Land capability (nonirrigated): 2c

Typical Profile:

H1—0 to 10 inches; silt loam

H2—10 to 34 inches; silty clay loam

H3—34 to 60 inches; silt loam

Minor Components

Ness

Unnamed Wet Soils

Phase: Loamy, Depression

Unnamed Wet Soils

Phase: Loamy, Drainageway

Hb—Harney silt loam, 1 to 3 percent slopes

Map Unit Composition

Harney: 100 percent

Component Descriptions

Harney

MLRA: 73 - Rolling Plains and Breaks

Landform: Plain on tableland

Parent material: Loess

Slope: 1 to 3 percent

Drainage class: Well drained

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

Available water capacity: High (About 11.1 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 (pe20-26)

Land capability (irrigated): 2e

Land capability (nonirrigated): 2e

Ha—Harney silt loam, 0 to 1 percent slopes

Map Unit Composition

Harney: 100 percent

Component Descriptions

Harney

MLRA: 73 - Rolling Plains and Breaks

Landform: Divide on tableland

Parent material: Loess

Slope: 0 to 1 percent

Drainage class: Well drained

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

Available water capacity: High (About 11.1 inches)

Typical Profile:

H1—0 to 10 inches; silt loam
 H2—10 to 34 inches; silty clay loam
 H3—34 to 60 inches; silt loam

Hc—Harney silt loam, 3 to 6 percent slopes

Map Unit Composition

Harney: 100 percent

Component Descriptions

Harney

MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 3 to 6 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 11.1 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 10 inches; silt loam
 H2—10 to 34 inches; silty clay loam
 H3—34 to 60 inches; silt loam

Hd—Harney-Uly complex, 1 to 3 percent slopes

Map Unit Composition

Harney: 80 percent
 Uly: 20 percent

Component Descriptions

Harney

MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.8 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 (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 6 inches; silty clay loam
 H2—6 to 34 inches; silty clay loam
 H3—34 to 60 inches; silt loam

Uly

MLRA: 73 - Rolling Plains and Breaks
Landform: Paleoterrace on plains
Hillslope position: Summit
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 12.0 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 (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 8 inches; silt loam
 H2—8 to 30 inches; silty clay loam
 H3—30 to 60 inches; silt loam

He—Harney-Uly complex, 3 to 6 percent slopes

H1—0 to 8 inches; silt loam
 H2—8 to 30 inches; silty clay loam
 H3—30 to 60 inches; silt loam

Map Unit Composition

Harney: 70 percent
 Uly: 30 percent

Component Descriptions**Harney**

MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 3 to 6 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.8 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 (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 6 inches; silty clay loam
 H2—6 to 34 inches; silty clay loam
 H3—34 to 60 inches; silt loam

Uly

MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 3 to 6 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 12.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

*Typical Profile:***Hg—Holdrege silt loam, 1 to 3 percent slopes****Map Unit Composition**

Holdrege: 100 percent

Component Descriptions**Holdrege**

MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Calcareous loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.0 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 (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 11 inches; silt loam
 H2—11 to 33 inches; silty clay loam
 H3—33 to 48 inches; silt loam
 H4—48 to 66 inches; silt loam

Hh—Holdrege silt loam, 3 to 6 percent slopes**Map Unit Composition**

Holdrege: 100 percent

Component Descriptions

Holdrege

MLRA: 73 - Rolling Plains and Breaks

Landform: Plain on upland

Parent material: Calcareous loess

Slope: 3 to 6 percent

Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very high (About 12.3 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Medium

Ecological site: Loamy Upland (pe20-26)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 10 inches; silt loam

H2—10 to 20 inches; silty clay loam

H3—20 to 26 inches; silty clay loam

H4—26 to 60 inches; silt loam

Ho—Hord silt loam, rarely flooded

Map Unit Composition

Hord: 100 percent

Component Descriptions

Hord

MLRA: 73 - Rolling Plains and Breaks

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: Very high (About 12.0 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Rare

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Loamy Terrace (pe20-26)

Land capability (irrigated): 1

Land capability (nonirrigated): 2c

Typical Profile:

H1—0 to 12 inches; silt loam

H2—12 to 42 inches; silty clay loam

H3—42 to 60 inches; silt loam

Minor Components

Unnamed Hydric Soil 2

Unnamed Hydric Soil 1

Unnamed Wet Soils

Phase: Loamy, Depression

La—Las Animas loamy fine sand, occasionally flooded

Map Unit Composition

Las Animas: 100 percent

Component Descriptions

Las Animas

MLRA: 73 - Rolling Plains and Breaks

Landform: Flood plain on river valley

Parent material: Loamy and/or sandy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 6.7 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 18 to 36 inches

Runoff class: Negligible

Ecological site: Sandy Terrace (pe21-28)

Land capability (irrigated): 3w

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 15 inches; loamy fine sand

H2—15 to 45 inches; stratified very fine sandy loam to loamy fine sand

H3—45 to 60 inches; fine sand

Lh—Lesho clay loam, occasionally flooded**Map Unit Composition**

Lesho: 100 percent

Component Descriptions**Lesho**

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Sandy and/or loamy 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 7.4 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 18 inches; clay loam

H2—18 to 32 inches; clay loam

H3—32 to 60 inches; sand

Lk—Lubbock silt loam, 0 to 1 percent slopes**Map Unit Composition**

Lubbock: 100 percent

Component Descriptions**Lubbock**

MLRA: 73 - Rolling Plains and Breaks

Landform: Plain on tableland

Parent material: Loess

Slope: 0 to 1 percent

Drainage class: Well drained

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

Available water capacity: High (About 9.8 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Loamy Upland (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 2c

Typical Profile:

H1—0 to 10 inches; silt loam

H2—10 to 44 inches; clay

H3—44 to 60 inches; silty clay loam

Minor Components**Unnamed Wet Soils**

Phase: Loamy, Depression

Na—Naron loamy fine sand, 0 to 1 percent slopes**Map Unit Composition**

Naron: 100 percent

Component Descriptions**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 9.4 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Sands (pe21-28)

Land capability (irrigated): 1

Land capability (nonirrigated): 2e

Typical Profile:

H1—0 to 12 inches; loamy fine sand

H2—12 to 60 inches; sandy clay loam

Minor Components**Unnamed Wet Soils***Phase: Loamy, Depression***Nf—Naron fine sandy loam, 0 to 1 percent slopes****Map Unit Composition**

Naron: 100 percent

Component Descriptions**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 9.9 inches)**Shrink-swell potential: Low (About 1.5 LEP)**Flooding hazard: None**Depth to seasonal water saturation: More than 6 feet**Runoff class: Negligible**Ecological site: Sandy (pe21-28)**Land capability (irrigated): 1**Land capability (nonirrigated): 2e**Typical Profile:**H1—0 to 12 inches; fine sandy loam**H2—12 to 60 inches; sandy clay loam***Minor Components****Carwile****Unnamed Wet Soils***Phase: Loamy, Depression***Ng—Naron fine sandy loam, 1 to 3 percent slopes****Map Unit Composition**

Naron: 100 percent

Component Descriptions**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 9.9 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 (irrigated): 2e**Land capability (nonirrigated): 3e**Typical Profile:**H1—0 to 12 inches; fine sandy loam**H2—12 to 60 inches; sandy clay loam***Minor Components****Carwile****Unnamed Wet Soils***Phase: Loamy, Depression***Ns—Ness clay****Map Unit Composition**

Ness: 100 percent

Component Descriptions**Ness***MLRA: 73 - Rolling Plains and Breaks**Landform: Playa on tableland**Parent material: Clayey alluvium and/or eolian deposits**Slope: 0 to 1 percent**Drainage class: 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: Negligible

Ecological site: Lakebed (pe20-26)

Land capability (nonirrigated): 6w

Typical Profile:

H1—0 to 31 inches; clay

H2—31 to 60 inches; silt loam

Pa—Platte Soils, occasionally flooded

Map Unit Composition

Platte: 100 percent

Component Descriptions

Platte

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Low (About 3.5 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 12 to 24 inches

Runoff class: Very low

Ecological site: Subirrigated (pe21-28)

Land capability (irrigated): 4w

Land capability (nonirrigated): 4w

Typical Profile:

H1—0 to 9 inches; loam

H2—9 to 60 inches; coarse sand

Pe—Plevna fine sandy loam, frequently flooded

Map Unit Composition

Plevna: 100 percent

Component Descriptions

Plevna

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Poorly drained

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

Available water capacity: Moderate (About 6.8 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Frequent

Depth to seasonal water saturation: About 0 to 24 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 5w

Typical Profile:

H1—0 to 10 inches; fine sandy loam

H2—10 to 39 inches; fine sandy loam

H3—39 to 60 inches; fine sandy loam

Minor Components

Unnamed Wet Soils

Phase: Sandy, Drainageway

Pf—Pratt loamy fine sand, 4 to 10 percent slopes

Map Unit Composition

Pratt: 100 percent

Component Descriptions

Pratt

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits

Slope: 4 to 10 percent

Drainage class: Well drained

Slowest permeability: Rapid (About 6.00 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: Very low

Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 13 inches; loamy fine sand
 H2—13 to 30 inches; loamy fine sand
 H3—30 to 60 inches; loamy fine sand

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

Pg—Pratt loamy fine sand, 1 to 4 percent slopes

Map Unit Composition

Pratt: 100 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 4 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: Negligible
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 13 inches; loamy fine sand
 H2—13 to 30 inches; loamy fine sand
 H3—30 to 60 inches; loamy fine sand

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

Pr—Pratt-Lincoln loamy fine sands, 0 to 4 percent slopes

Map Unit Composition

Pratt: 65 percent
 Lincoln: 35 percent

Component Descriptions

Pratt

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits
Slope: 0 to 4 percent
Drainage class: Well drained
Slowest permeability: Rapid (About 6.00 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: Negligible
Ecological site: Sands (pe21-28)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 13 inches; loamy fine sand
 H2—13 to 30 inches; loamy fine sand
 H3—30 to 60 inches; loamy fine sand

Lincoln

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Sandy alluvium
Slope: 0 to 3 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: Occasional
Depth to seasonal water saturation: About 60 to 72 inches
Runoff class: Negligible
Ecological site: Sands (pe21-28)
Land capability (nonirrigated): 6w

Typical Profile:

H1—0 to 5 inches; loamy fine sand
 H2—5 to 60 inches; stratified fine sand to clay loam

PRR—Pratt loamy fine sand, 1 to 5 percent slopes

Map Unit Composition

Pratt: 100 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 6.4 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: Sands (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 3e

Typical Profile:

H1—0 to 12 inches; loamy fine sand

H2—12 to 36 inches; loamy fine sand

H3—36 to 60 inches; loamy fine sand

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

PSS—Pratt loamy fine sand, 5 to 10 percent slopes

Map Unit Composition

Pratt: 100 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: Very low

Ecological site: Sands (pe21-28)

Land capability (irrigated): 3e

Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 8 inches; loamy fine sand

H2—8 to 28 inches; loamy fine sand

H3—28 to 60 inches; loamy fine sand

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

Pt—Pratt-Tivoli loamy fine sands, 5 to 15 percent slopes

Map Unit Composition

Pratt: 65 percent

Tivoli: 35 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: Very low

Ecological site: Sands (pe21-28)

Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:

H1—0 to 8 inches; loamy fine sand
 H2—8 to 28 inches; loamy fine sand
 H3—28 to 60 inches; loamy fine sand

Tivoli

MLRA: 79 - Great Bend Sand Plains
Landform: Dune on paleoterrace on river valley
Parent material: Sandy eolian deposits
Slope: 5 to 15 percent
Drainage class: 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
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sands (pe21-28)
Land capability (nonirrigated): 7e

Typical Profile:

H1—0 to 6 inches; loamy fine sand
 H2—6 to 60 inches; fine sand

Minor Components

Carwile

Unnamed Wet Soils

Phase: Sandy, Depression

SAP—sand Pits

Ta—Tabler clay loam, 0 to 1 percent slopes

Map Unit Composition

Tabler: 100 percent

Component Descriptions

Tabler

MLRA: 79 - Great Bend Sand Plains
Landform: Plain on tableland
Parent material: Calcareous clayey and/or loamy 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 9.6 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Clay Upland (pe21-28)

Land capability (nonirrigated): 2s

Typical Profile:

H1—0 to 8 inches; clay loam
 H2—8 to 40 inches; clay
 H3—40 to 60 inches; clay loam

Minor Components

Carwile

Ness

Unnamed Wet Soils

Phase: Clayey, Depression

Tb—Tabler-Drummond complex, 0 to 1 percent slopes

Map Unit Composition

Tabler: 90 percent

Drummond: 10 percent

Component Descriptions

Tabler

MLRA: 79 - Great Bend Sand Plains

Landform: Plain on tableland

Parent material: Calcareous clayey and/or loamy 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 9.6 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet

Runoff class: Negligible

Ecological site: Clay Upland (pe21-28)

Land capability (nonirrigated): 2s

Typical Profile:

- H1—0 to 8 inches; clay loam
- H2—8 to 40 inches; clay
- H3—40 to 60 inches; clay loam

Drummond

MLRA: 79 - Great Bend Sand Plains

Landform: Paleoterrace

Parent material: Clayey and/or loamy alluvium

Slope: 0 to 1 percent

Drainage class: Moderately well drained

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

Available water capacity: Low (About 4.0 inches)

Shrink-swell potential: High (About 7.5 LEP)

Flooding hazard: None

Depth to seasonal water saturation: About 24 to 72 inches

Runoff class: Negligible

Ecological site: Saline Subirrigated (pe21-28)

Land capability (nonirrigated): 6s

Typical Profile:

- H1—0 to 8 inches; loam
- H2—8 to 30 inches; clay
- H3—30 to 30 inches; clay

Minor Components

Unnamed Wet Soils

Phase: Clayey, Depression

Tf—Tivoli fine sand, 10 to 20 percent slopes

Map Unit Composition

Tivoli: 100 percent

Component Descriptions

Tivoli

MLRA: 79 - Great Bend Sand Plains

Landform: Dune on paleoterrace on river valley

Parent material: Sandy eolian deposits

Slope: 10 to 20 percent

Drainage class: Excessively drained

Slowest permeability: Rapid (About 6.00 in/hr)

Available water capacity: Very low (About 3.0 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: Choppy Sands (pe21-28)

Land capability (nonirrigated): 7e

Typical Profile:

- H1—0 to 8 inches; fine sand
- H2—8 to 60 inches; fine sand

To—Tobin silt loam, occasionally flooded

Map Unit Composition

Tobin: 100 percent

Component Descriptions

Tobin

MLRA: 73 - Rolling Plains and Breaks

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: Negligible

Ecological site: Loamy Lowland (pe20-26)

Land capability (nonirrigated): 2w

Typical Profile:

- H1—0 to 15 inches; silt loam
- H2—15 to 40 inches; silty clay loam
- H3—40 to 60 inches; silt loam

W—Water

Wa—Waldeck fine sandy loam, occasionally flooded

Map Unit Composition

Waldeck: 100 percent

Component Descriptions

Waldeck

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 6.2 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 10 inches; fine sandy loam

H2—10 to 28 inches; sandy loam

H3—28 to 60 inches; sand

Minor Components

Unnamed Hydric Soil

Unnamed Wet Soils

Phase: Sandy, Depression

Unnamed Wet Soils

Phase: Sandy, Drainageway

Wc—Waldeck loam, occasionally flooded

Map Unit Composition

Waldeck: 100 percent

Component Descriptions

Waldeck

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

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

Available water capacity: Moderate (About 6.5 inches)

Shrink-swell potential: Low (About 1.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 3w

Typical Profile:

H1—0 to 10 inches; loam

H2—10 to 28 inches; sandy loam

H3—28 to 60 inches; sand

Za—Zenda clay loam, occasionally flooded

Map Unit Composition

Zenda: 100 percent

Component Descriptions

Zenda

MLRA: 79 - Great Bend Sand Plains

Landform: Flood plain on river valley

Parent material: Loamy alluvium

Slope: 0 to 1 percent

Drainage class: Somewhat poorly drained

Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: High (About 10.5 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)

Flooding hazard: Occasional

Depth to seasonal water saturation: About 24 to 48 inches

Runoff class: Negligible

Ecological site: Subirrigated (pe21-28)

Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 15 inches; clay loam
H2—15 to 60 inches; clay loam

Ze—Lesho clay loam, Saline, occasionally flooded

Map Unit Composition

Lesho: 100 percent

Component Descriptions

Lesho

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 9.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Low
Ecological site: Saline Lowland (pe21-28)
Land capability (irrigated): 3s
Land capability (nonirrigated): 4s

Typical Profile:

H1—0 to 15 inches; clay loam
H2—15 to 55 inches; clay loam
H3—55 to 60 inches; sand

Zs—Zenda-Drummond complex, occasionally flooded

Map Unit Composition

Zenda: 85 percent
Drummond: 15 percent

Component Descriptions

Zenda

MLRA: 79 - Great Bend Sand Plains
Landform: Flood plain on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.5 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 24 to 48 inches
Runoff class: Negligible
Ecological site: Loamy Lowland (pe21-28)
Land capability (nonirrigated): 2w

Typical Profile:

H1—0 to 15 inches; clay loam
H2—15 to 60 inches; clay loam

Drummond

MLRA: 79 - Great Bend Sand Plains
Landform: Paleoterrace
Parent material: Clayey and/or loamy 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 7.8 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: About 24 to 72 inches
Runoff class: Low
Ecological site: Saline Lowland (pe21-28)
Land capability (nonirrigated): 6s

Typical Profile:

H1—0 to 8 inches; loam, clay loam
H2—8 to 60 inches; clay

Minor Components

Unnamed Wet Soils

Phase: Loamy, Depression

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in the following table. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in the "Acres and Proportionate Extent of Soils" table. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described in other tables in this document."

Map symbol	Mapunit name	Farmland Classification
145HC	Harney silty clay loam, 1 to 3 percent slopes, eroded	All areas are prime farmland
145UC	Uly silt loam, 3 to 6 percent slopes	All areas are prime farmland
Aa	Attica fine sandy loam, 0 to 1 percent slopes	All areas are prime farmland
Ab	Attica fine sandy loam, 1 to 3 percent slopes	All areas are prime farmland
Cd	Canadian fine sandy loam, rarely flooded	All areas are prime farmland
Fa	Farnum loam, 0 to 1 percent slopes	All areas are prime farmland
Fr	Farnum loam, 1 to 3 percent slopes	All areas are prime farmland
Ha	Harney silt loam, 0 to 1 percent slopes	All areas are prime farmland
Hb	Harney silt loam, 1 to 3 percent slopes	All areas are prime farmland
Hc	Harney silt loam, 3 to 6 percent slopes	All areas are prime farmland
Hd	Harney-uly complex, 1 to 3 percent slopes	All areas are prime farmland
He	Harney-uly complex, 3 to 6 percent slopes	All areas are prime farmland
Hg	Holdrege silt loam, 1 to 3 percent slopes	All areas are prime farmland
Hh	Holdrege silt loam, 3 to 6 percent slopes	All areas are prime farmland
Ho	Hord silt loam, rarely flooded	All areas are prime farmland
Lh	Lesho clay loam, occasionally flooded	All areas are prime farmland
Lk	Lubbock silt loam, 0 to 1 percent slopes	All areas are prime farmland
Nf	Naron fine sandy loam, 0 to 1 percent slopes	All areas are prime farmland
Ng	Naron fine sandy loam, 1 to 3 percent slopes	All areas are prime farmland
Ta	Tabler clay loam, 0 to 1 percent slopes	All areas are prime farmland
To	Tobin silt loam, occasionally flooded	All areas are prime farmland
Wa	Waldeck fine sandy loam, occasionally flooded	All areas are prime farmland
Wc	Waldeck loam, occasionally flooded	All areas are prime farmland
Za	Zenda clay loam, occasionally flooded	All areas are prime farmland

SOIL RATING FOR PLANT GROWTH, modified 1998
Edwards County, Kansas

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The "Soil Rating for Plant Growth, modified 1998" (SRPG) is a relative rating of the capacity of a soil to produce a specific plant under a defined management system. The index is determined from yield data on a few benchmark soils and is used to calculate yields, the net returns from crops, land assessment values, and taxes and to perform risk analysis when land management decisions are made. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Map symbol	Soil name	Crop Index
057AN	Roxbury Silt Loam, Channeled-----	45
057LA	Las Animas Sandy Loam, Occasionally Flooded-----	36
057LC	Las Animas-Lincoln Complex, Occasionally Flooded-----	33
097AT	Attica Loamy Fine Sand, 1 To 4 Percent Slopes-----	47
097AX	Attica-Carwile Complex, 0 To 4 Percent Slopes-----	36
097TH	Tivoli Fine Sand, 15 To 30 Percent Slopes-----	12
145HC	Harney Silty Clay Loam, 1 To 3 Percent Slopes, Eroded-----	66
145HD	Harney-Uly Complex, 3 To 6 Percent Slopes, Eroded-----	64
145RO	Roxbury Silt Loam, Frequently Flooded-----	45
145UC	Uly Silt Loam, 3 To 6 Percent Slopes-----	63
151KP	Kanza-Plevna Complex, Frequently Flooded-----	27
185PR	Pratt-Carwile Complex, 0 To 8 Percent Slopes-----	30
ARR	Arkansas River-----	0
Aa	Attica Fine Sandy Loam, 0 To 1 Percent Slopes-----	52
Ab	Attica Fine Sandy Loam, 1 To 3 Percent Slopes-----	51
Ac	Attica-Carwile Fine Sandy Loams, 0 To 3 Percent Slopes-----	44
BOP	Borrow Pits-----	0
Bk	Coly-Tobin Silt Loams, 0 To 15 Percent Slopes-----	56
Cc	Campus-Canlon Complex, 6 To 15 Percent Slopes-----	16
Cd	Canadian Fine Sandy Loam, Rarely Flooded-----	53
Cf	Darr Fine Sandy Loam, Rarely Flooded-----	52
Cr	Carwile Fine Sandy Loam, 0 To 1 Percent Slopes-----	20
Cs	Carwile-Drummond Complex, 0 To 1 Percent Slopes-----	22
Fa	Farnum Loam, 0 To 1 Percent Slopes-----	73
Fr	Farnum Loam, 1 To 3 Percent Slopes-----	69
Ha	Harney Silt Loam, 0 To 1 Percent Slopes-----	68
Hb	Harney Silt Loam, 1 To 3 Percent Slopes-----	68
Hc	Harney Silt Loam, 3 To 6 Percent Slopes-----	65
Hd	Harney-Uly Complex, 1 To 3 Percent Slopes-----	66
He	Harney-Uly Complex, 3 To 6 Percent Slopes-----	64
Hg	Holdrege Silt Loam, 1 To 3 Percent Slopes-----	67
Hh	Holdrege Silt Loam, 3 To 6 Percent Slopes-----	63
Ho	Hord Silt Loam, Rarely Flooded-----	72
La	Las Animas Loamy Fine Sand, Occasionally Flooded-----	35
Lh	Lesho Clay Loam, Occasionally Flooded-----	47
Lk	Lubbock Silt Loam, 0 To 1 Percent Slopes-----	62
Na	Naron Loamy Fine Sand, 0 To 1 Percent Slopes-----	62
Nf	Naron Fine Sandy Loam, 0 To 1 Percent Slopes-----	67
Ng	Naron Fine Sandy Loam, 1 To 3 Percent Slopes-----	66
Ns	Ness Clay-----	10
PRR	Pratt Loamy Fine Sand, 1 To 5 Percent Slopes-----	37
PSS	Pratt Loamy Fine Sand, 5 To 10 Percent Slopes-----	34
Pa	Platte Soils, Occasionally Flooded-----	24
Pe	Plevna Fine Sandy Loam, Frequently Flooded-----	29
Pf	Pratt Loamy Fine Sand, 4 To 10 Percent Slopes-----	35
Pg	Pratt Loamy Fine Sand, 1 To 4 Percent Slopes-----	37
Pr	Pratt-Lincoln Loamy Fine Sands, 0 To 4 Percent Slopes-----	31
Pt	Pratt-Tivoli Loamy Fine Sands, 5 To 15 Percent Slopes-----	29
SAP	Sand Pits-----	0
Ta	Tabler Clay Loam, 0 To 1 Percent Slopes-----	61
Tb	Tabler-Drummond Complex, 0 To 1 Percent Slopes-----	58
Tf	Tivoli Fine Sand, 10 To 20 Percent Slopes-----	17
To	Tobin Silt Loam, Occasionally Flooded-----	63
W	Water-----	0
Wa	Waldeck Fine Sandy Loam, Occasionally Flooded-----	35
Wc	Waldeck Loam, Occasionally Flooded-----	36
Za	Zenda Clay Loam, Occasionally Flooded-----	56
Ze	Lesho Clay Loam, Saline, Occasionally Flooded-----	42
Zs	Zenda-Drummond Complex, Occasionally Flooded-----	53

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(Entries under "Erosion factors--T" apply to the entire profile. Entries under "K", "Kf", "Wind Erodibility Group" and "Wind Erodibility Index" apply only to the surface layer)

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
057AN:ROXBURY---	100	N/A	5w	Not prime farmland	B	Loamy Lowland (pe20-26)	5	.32	.32	5	4L	86
057LA:LAS ANIMAS	100	3w-	3w	Not prime farmland	C	Saline Subirrigated (pe20-26)	3	.24	.24	5	3	86
057LC:LAS ANIMAS	80	3w-	4w	Not prime farmland	C	Saline Subirrigated (pe20-26)	3	.24	.24	5	3	86
057LC:LINCOLN---	20	N/A	6s	Not prime farmland	A	Sandy Lowland (pe20-26)	1	.15	.15	5	1	220
097AT:ATTICA----	100	N/A	2e	Not prime farmland	B	Sandy (pe21-28)	2	.17	.17	5	2	134
097AX:ATTICA----	60	N/A	2e	Not prime farmland	B	Sandy (pe21-28)	2	.17	.17	5	2	134
097AX:CARWILE---	40	N/A	2w	Not prime farmland	D	Sandy (pe21-28)	3	.24	.24	5	3	86
097TH:TIVOLI----	100	N/A	7e	Not prime farmland	A	Choppy Sands (pe21-28)	1	.17	.17	5	1	250
145HC:HARNEY----	100	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	8	.32	.32	5	7	38
145HD:HARNEY----	70	N/A	4e	Not prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
145HD:ULY-----	30	N/A	4e	Not prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
145RO:ROXBURY---	100	N/A	5w	Not prime farmland	B	Loamy Lowland (pe20-26)	5	.32	.32	5	4L	86
145UC:ULY-----	100	3e-	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
151KP:KANZA-----	50	N/A	5w	Not prime farmland	D	Unspecified	2	.17	.17	5	2	134
151KP:PLEVNA----	50	N/A	5w	Not prime farmland	D	Subirrigated (pe21-28)	3	.20	.20	5	3	86
185PR:PRATT-----	60	3e-	4e	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134
185PR:CARWILE---	40	N/A	2w	Not prime farmland	D	Sandy (pe21-28)	3	.24	.24	5	3	86
ARR:ARKANSAS RIVER-----	100	N/A	8w	Not prime farmland	D	Unspecified		---	---	-	---	0
Aa:ATTICA-----	100	N/A	2e	All areas are prime farmland	B	Sandy (pe21-28)	3	.24	.24	5	3	86

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Field Office Thunderbook: Soils Properties for Conservation Planning--Continued

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
Ab:ATTICA-----	100	N/A	2e	All areas are prime farmland	B	Sandy (pe21-28)	3	.24	.24	5	3	86
Ac:ATTICA-----	75	N/A	2e	Not prime farmland	B	Sandy (pe21-28)	3	.24	.24	5	3	86
Ac:CARWILE-----	25	N/A	2w	Not prime farmland	D	Sandy (pe21-28)	3	.24	.24	5	3	86
BOP:BORROW PITS-	100	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Bk:COLY-----	75	4e-	4e	Not prime farmland	B	Limy Upland (pe20-26)	5	.43	.43	5	4L	86
Bk:TOBIN-----	25	N/A	2w	Not prime farmland	B	Loamy Lowland (pe20-26)	7	.32	.32	5	6	48
Cc:CAMPUS-----	75	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.32	2	4L	86
Cc:CANLON-----	25	N/A	6s	Not prime farmland	D	Shallow Limy (pe20-26)	5	.32	.32	1	4L	86
Cd:CANADIAN-----	100	N/A	2e	All areas are prime farmland	B	Sandy Terrace (pe21-28)	3	.20	.20	5	3	86
Cf:DARR-----	100	N/A	2e	Not prime farmland	B	Sandy Terrace (pe21-28)	3	.20	.20	5	3	86
Cr:CARWILE-----	100	N/A	2w	Not prime farmland	D	Sandy (pe21-28)	3	.24	.24	5	3	86
Cs:CARWILE-----	90	N/A	2w	Not prime farmland	D	Sandy (pe21-28)	3	.24	.24	5	3	86
Cs:DRUMMOND-----	10	N/A	6s	Not prime farmland	D	Saline Lowland (pe21-28)	5	.49	.49	2	4L	86
Fa:FARNUM-----	100	1-	2c	All areas are prime farmland	B	Loamy Upland (pe21-28)	7	.28	.28	5	6	48
Fr:FARNUM-----	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe21-28)	7	.28	.28	5	6	48
Ha:HARNEY-----	100	1-	2c	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Hb:HARNEY-----	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Hc:HARNEY-----	100	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Hd:HARNEY-----	80	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe20-26)	8	.32	.32	5	7	38

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Field Office Thunderbook: Soils Properties for Conservation Planning--Continued

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
Hd:ULY-----	20	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
He:HARNEY-----	70	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	8	.32	.32	5	7	38
He:ULY-----	30	3e-	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Hg:HOLDREGE-----	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Hh:HOLDREGE-----	100	3e-	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Ho:HORD-----	100	1-	2c	All areas are prime farmland	B	Loamy Terrace (pe20-26)	7	.32	.32	5	6	48
La:LAS ANIMAS---	100	3w-	3w	Not prime farmland	C	Sandy Terrace (pe21-28)	2	.17	.17	5	2	134
Lh:LESHO-----	100	N/A	3w	All areas are prime farmland	C	Subirrigated (pe21-28)	5	.28	.28	4	4L	86
Lk:LUBBOCK-----	100	1-	2c	All areas are prime farmland	B	Loamy Upland (pe21-28)	7	.32	.32	5	6	48
Na:NARON-----	100	1-	2e	Not prime farmland	B	Sands (pe21-28)	2	.17	.17	5	2	134
Nf:NARON-----	100	1-	2e	All areas are prime farmland	B	Sandy (pe21-28)	3	.20	.20	5	3	86
Ng:NARON-----	100	2e-	3e	All areas are prime farmland	B	Sandy (pe21-28)	3	.20	.20	5	3	86
Ns:NESS-----	100	N/A	6w	Not prime farmland	D	Lakebed (pe20- 26)	4	.28	.28	5	4	86
PRR:PRATT-----	100	3e-	3e	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134
PSS:PRATT-----	100	3e-	4e	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134
Pa:PLATTE-----	100	4w-	4w	Not prime farmland	B	Subirrigated (pe21-28)	5	.28	.28	5	4L	86
Pe:PLEVNA-----	100	N/A	5w	Not prime farmland	D	Subirrigated (pe21-28)	3	.20	.20	5	3	86
Pf:PRATT-----	100	3e-	4e	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134
Pg:PRATT-----	100	3e-	3e	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134

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Field Office Thunderbook: Soils Properties for Conservation Planning--Continued

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro- logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
Pr:PRATT-----	65	3e-	3e	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134
Pr:LINCOLN-----	35	N/A	6w	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134
Pt:PRATT-----	65	3e-	4e	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134
Pt:TIVOLI-----	35	N/A	7e	Not prime farmland	A	Sands (pe21-28)	2	.17	.17	5	2	134
SAP:SAND PIT----	100	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
Ta:TABLER-----	100	N/A	2s	All areas are prime farmland	D	Clay Upland (pe21-28)	8	.43	.43	5	7	38
Tb:TABLER-----	90	N/A	2s	Not prime farmland	D	Clay Upland (pe21-28)	8	.43	.43	5	7	38
Tb:DRUMMOND-----	10	N/A	6s	Not prime farmland	D	Saline Subirrigated (pe21-28)	5	.49	.49	2	4L	86
Tf:TIVOLI-----	100	N/A	7e	Not prime farmland	A	Choppy Sands (pe21-28)	1	.17	.17	5	1	250
To:TOBIN-----	100	N/A	2w	All areas are prime farmland	B	Loamy Lowland (pe20-26)	7	.32	.32	5	6	48
W:WATER-----	100	N/A	N/A			Unspecified		---	---	-	---	---
Wa:WALDECK-----	100	N/A	3w	All areas are prime farmland	C	Subirrigated (pe21-28)	3	.20	.20	4	3	86
Wc:WALDECK-----	100	N/A	3w	All areas are prime farmland	C	Subirrigated (pe21-28)	6	.28	.28	4	5	56
Za:ZENDA-----	100	N/A	2w	All areas are prime farmland	C	Subirrigated (pe21-28)	7	.28	.28	5	6	48
Ze:LESHO-----	100	3s-	4s	Not prime farmland	C	Saline Lowland (pe21-28)	5	.28	.28	4	4L	86
Zs:ZENDA-----	85	N/A	2w	Not prime farmland	C	Loamy Lowland (pe21-28)	7	.28	.28	5	6	48
Zs:DRUMMOND-----	15	N/A	6s	Not prime farmland	D	Saline Lowland (pe21-28)	5	.49	.49	2	4L	86

RANGELAND PRODUCTIVITY
Edwards County, Kansas

Use and Explanation of Rangeland, Grazed Forest Land, Native Pastureland Interpretations

Information in this subsection can be used to plan the use and management of soils for rangeland, grazed forest land, and native pasture. Different kinds of soils vary in their capacity to produce native grasses and other plants suitable for grazing. Information in this subsection provides groupings of similar soils and estimates of potential forage production, which can be used to determine livestock stocking rates.

Rangeland. Range is land on which the native vegetation (climax or natural potential plant community) is predominantly grasses, grasslike plants, forbs, and shrubs suitable for grazing and browsing. Range includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain shrub and forb communities. Rangeland receives no regular or frequent cultural treatment. The composition and production of the plant community are determined by soil, climate, topography, overstory canopy, and grazing management.

Grazed Forest Land. Includes land on which the understory includes, as an integral part of the forest plant community, plants that can be grazed without significantly impairing other forest values.

Native Pasture. Includes land on which the native vegetation (climax or natural potential plant community) is forest but which is used and managed primarily for production of native plants for forage. Native pasture includes cut-over forest land and forest land cleared and now managed for native or naturalized forage plants.

Rangeland

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Effective management based on the relationship between the soils and vegetation and water.

The Rangeland, Grazed Forest land, Native Pastureland Interpretations shows, for each soil that supports rangeland vegetation, the ecological site and the potential annual production of vegetation in favorable, normal, unfavorable years. An explanation of the column headings in this table follows.

An ecological site is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of a site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Total dry-weight production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, average, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in chapter 4 of the National Range and Pasture Handbook, which is available in local offices of the Natural Resources Conservation Service. The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

RANGELAND PRODUCTIVITY--Continued
Edwards County, Kansas

(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
057AN: Roxbury-----	Loamy Lowland (pe20-26)	5,000	4,000	2,500
057LA: Las Animas, occasionally flooded--	Saline Subirrigated (pe20-26)	6,500	6,500	6,500
057LC: Las Animas-----	Saline Subirrigated (pe20-26)	6,500	6,500	6,500
Lincoln-----	Sandy Lowland (pe20-26)	4,000	3,000	2,000
097AT: Attica-----	Sandy (pe21-28)	4,500	3,000	2,000
097AX: Attica-----	Sandy (pe21-28)	4,500	3,000	2,000
Carwile-----	Sandy (pe21-28)	5,000	3,800	3,000
097TH: Tivoli-----	Choppy Sands (pe21-28)	2,000	1,400	1,000
145HC: Harney-----	Loamy Upland (pe20-26)	4,000	2,200	1,000
145HD: Harney-----	Loamy Upland (pe20-26)	4,000	2,200	1,000
Uly-----	Loamy Upland (pe20-26)	3,700	3,200	2,700
145RO: Roxbury-----	Loamy Lowland (pe20-26)	5,000	4,000	2,500
145UC: Uly-----	Loamy Upland (pe20-26)	3,700	3,200	2,700
151KP: Kanza-----	---	---	---	---
Plevna-----	Subirrigated (pe21-28)	9,000	8,000	7,000
185PR: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
Carwile-----	Sandy (pe21-28)	5,000	3,800	3,000
Aa: Attica-----	Sandy (pe21-28)	4,500	3,000	2,000
Ab: Attica-----	Sandy (pe21-28)	4,500	3,000	2,000
Ac: Attica-----	Sandy (pe21-28)	4,500	3,000	2,000
Carwile-----	Sandy (pe21-28)	5,000	3,800	3,000
ARR: Arkansas River-----	---	---	---	---
Bk: Coly-----	Limy Upland (pe20-26)	3,300	3,000	2,700
Tobin-----	Loamy Lowland (pe20-26)	6,000	5,000	4,000
BOP: Borrow Pits-----	---	---	---	---
Cc: Campus-----	Limy Upland (pe20-26)	3,000	2,000	1,000
Canlon-----	Shallow Limy (pe20-26)	2,400	1,600	900
Cd: Canadian-----	Sandy Terrace (pe21-28)	8,500	6,100	4,500
Cf: Darr-----	Sandy Terrace (pe21-28)	8,500	6,100	4,500
Cr: Carwile-----	Sandy (pe21-28)	5,000	3,800	3,000
Cs: Carwile-----	Sandy (pe21-28)	5,000	3,800	3,000
Drummond-----	Saline Lowland (pe21-28)	7,000	5,800	5,000
Fa: Farnum-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
Fr: Farnum-----	Loamy Upland (pe21-28)	5,500	4,000	2,500
Ha: Harney-----	Loamy Upland (pe20-26)	5,000	3,500	2,000
Hb: Harney-----	Loamy Upland (pe20-26)	5,000	3,500	2,000
Hc: Harney-----	Loamy Upland (pe20-26)	5,000	3,500	2,000
Hd: Harney-----	Loamy Upland (pe20-26)	5,000	3,500	2,000
Uly-----	Loamy Upland (pe20-26)	3,700	3,200	2,700
He: Harney-----	Loamy Upland (pe20-26)	5,000	3,500	2,000
Uly-----	Loamy Upland (pe20-26)	3,700	3,200	2,700
Hg: Holdrege-----	Loamy Upland (pe20-26)	3,500	2,500	1,500
Hh: Holdrege-----	Loamy Upland (pe20-26)	4,000	3,600	3,300
Ho: Hord-----	Loamy Terrace (pe20-26)	4,500	4,200	3,800
La: Las Animas-----	Sandy Terrace (pe21-28)	5,000	4,500	3,250
Lh: Lesho-----	Subirrigated (pe21-28)	9,000	8,000	7,000
Lk: Lubbock-----	Loamy Upland (pe21-28)	3,500	2,500	1,500
Na: Naron-----	Sands (pe21-28)	4,500	3,000	2,000

RANGELAND PRODUCTIVITY--Continued
Edwards County, Kansas

(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
Nf: Naron-----	Sandy (pe21-28)	4,500	3,000	2,000
Ng: Naron-----	Sandy (pe21-28)	4,500	3,000	2,000
Ns: Ness-----	Lakebed (pe20-26)	2,000	1,500	500
Pa: Platte-----	Subirrigated (pe21-28)	5,000	4,600	4,200
Pe: Plevna-----	Subirrigated (pe21-28)	9,000	8,000	7,000
Pf: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
Pg: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
Pr: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
Lincoln-----	Sands (pe21-28)	3,000	2,300	1,800
PRR: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
PSS: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
Pt: Pratt-----	Sands (pe21-28)	4,500	3,500	2,500
Tivoli-----	Sands (pe21-28)	2,000	1,400	1,000
SAP: Sand Pit-----	---	---	---	---
Ta: Tabler-----	Clay Upland (pe21-28)	3,800	2,600	1,800
Tb: Tabler-----	Clay Upland (pe21-28)	3,800	2,600	1,800
Drummond-----	Saline Subirrigated (pe21-28)	7,000	5,800	5,000
Tf: Tivoli-----	Choppy Sands (pe21-28)	2,000	1,400	1,000
To: Tobin-----	Loamy Lowland (pe20-26)	6,000	5,000	4,000
W: Water-----	---	---	---	---
Wa: Waldeck-----	Subirrigated (pe21-28)	9,000	8,000	7,000
Wc: Waldeck-----	Subirrigated (pe21-28)	9,000	8,000	7,000
Za: Zenda-----	Subirrigated (pe21-28)	9,000	8,000	7,000
Ze: Lesho-----	Saline Lowland (pe21-28)	6,500	5,500	4,000
Zs: Zenda-----	Loamy Lowland (pe21-28)	9,000	8,000	7,000
Drummond-----	Saline Lowland (pe21-28)	7,000	5,800	5,000

BUILDING SITE DEVELOPMENT
Edwards County, Kansas

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. The following tables show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
057LA: Las Animas, occasionally flooded-----	100	Very limited Flooding Depth to saturated zone	 1.00 0.07	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 0.07
057LC: Las Animas-----	80	Very limited Flooding Depth to saturated zone	1.00 0.07	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.07
Lincoln-----	20	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.03	Very limited Flooding	1.00
097AT: Attica-----	100	Not limited		Not limited		Not limited	
097AX: Attica-----	60	Not limited		Not limited		Not limited	
Carwile-----	40	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00
097TH: Tivoli-----	100	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
145HC: Harney-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
145HD: Harney-----	70	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
Uly-----	30	Not limited		Not limited		Somewhat limited Slope	0.12
145RO: Roxbury-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
145UC: Uly-----	100	Not limited		Not limited		Somewhat limited Slope	0.12
151KP: Kanza-----	50	Very limited Flooding Depth to saturated zone	1.00 0.98	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.98
Plevna-----	50	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
185PR: Pratt-----	60	Not limited		Not limited		Somewhat limited Slope	0.12
Carwile-----	40	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
Aa: Attica-----	100	Not limited		Not limited		Not limited	
Ab: Attica-----	100	Not limited		Not limited		Not limited	
Ac: Attica-----	75	Somewhat limited Depth to saturated zone	0.98	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.98
Carwile-----	25	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ARR: Arkansas River-----	100	Not rated		Not rated		Not rated	
Bk: Coly-----	75	Somewhat limited Slope	0.00	Somewhat limited Slope	0.00	Very limited Slope	1.00
Tobin-----	25	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	
Cc: Campus-----	75	Somewhat limited Depth to hard bedrock Slope	0.90 0.37	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Slope Depth to hard bedrock	1.00 0.90
Canlon-----	25	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Depth to hard bedrock Slope	1.00 1.00
Cd: Canadian-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
Cf: Darr-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
Cr: Carwile-----	100	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00
Cs: Carwile-----	90	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
Drummond-----	10	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 0.61	Very limited Shrink-swell	1.00
Fa: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
Fr: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
Ha: Harney-----	100	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
Hb: Harney-----	100	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
Hc: Harney-----	100	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
Hd: Harney-----	80	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
Uly-----	20	Not limited		Not limited		Not limited	
He: Harney-----	70	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell Slope	0.50 0.12
Uly-----	30	Not limited		Not limited		Somewhat limited Slope	0.12
Hg: Holdrege-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
Hh: Holdrege-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ho: Hord-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
La: Las Animas-----	100	Very limited Flooding Depth to saturated zone	1.00 0.07	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.07
Lh: Lesho-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding Shrink-swell	1.00 0.50
Lk: Lubbock-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Na: Naron-----	100	Not limited		Not limited		Not limited	
Nf: Naron-----	100	Not limited		Not limited		Not limited	
Ng: Naron-----	100	Not limited		Not limited		Not limited	
Ns: Ness-----	100	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
Pa: Platte-----	100	Very limited Flooding Depth to saturated zone	1.00 0.98	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.98
Pe: Plevna-----	100	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
Pf: Pratt-----	100	Not limited		Not limited		Somewhat limited Slope	0.86
Pg: Pratt-----	100	Not limited		Not limited		Not limited	
Pr: Pratt-----	65	Not limited		Not limited		Not limited	
Lincoln-----	35	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.03	Very limited Flooding	1.00
PRR: Pratt-----	100	Not limited		Not limited		Not limited	
PSS: Pratt-----	100	Somewhat limited Slope	0.00	Somewhat limited Slope	0.00	Very limited Slope	1.00
Pt: Pratt-----	65	Somewhat limited Slope	0.00	Somewhat limited Slope	0.00	Very limited Slope	1.00
Tivoli-----	35	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
SAP: Sand Pit-----	100	Not rated		Not rated		Not rated	
Ta: Tabler-----	100	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Tb: Tabler-----	90	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Drummond-----	10	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 0.61	Very limited Shrink-swell	1.00
Tf: Tivoli-----	100	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
To: Tobin-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding	1.00
Wc: Waldeck-----	100	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.95	Very limited Flooding	1.00
Za: Zenda-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 0.95 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Ze: Lesho-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 0.95 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Zs: Zenda-----	85	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 0.95 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Drummond-----	15	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 0.61	Very limited Shrink-swell	1.00

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Very limited Flooding Low strength Shrink-swell Frost action	1.00 1.00 0.50 0.50	Somewhat limited Flooding Cutbanks cave	0.80 0.10	Very limited Flooding	1.00
057LA: Las Animas, occasionally flooded-----	100	Very limited Flooding Frost action Depth to saturated zone	 1.00 0.50 0.03	Very limited Cutbanks cave Depth to saturated zone Flooding	 1.00 1.00 0.60	Somewhat limited Flooding Depth to saturated zone	 0.60 0.03
057LC: Las Animas-----	80	Very limited Flooding Frost action Depth to saturated zone	1.00 0.50 0.03	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 1.00 0.60	Somewhat limited Flooding Depth to saturated zone	0.60 0.03
Lincoln-----	20	Very limited Flooding	1.00	Very limited Cutbanks cave Flooding Depth to saturated zone	1.00 0.60 0.03	Somewhat limited Flooding Too sandy	0.60 0.50
097AT: Attica-----	100	Somewhat limited Frost action	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
097AX: Attica-----	60	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
Carwile-----	40	Very limited Depth to saturated zone Shrink-swell Low strength	1.00 1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.28 0.10	Very limited Depth to saturated zone	1.00
097TH: Tivoli-----	100	Very limited Slope	1.00	Very limited Cutbanks cave Slope	1.00 1.00	Very limited Slope Droughty	1.00 1.00
145HC: Harney-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
145HD: Harney-----	70	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Uly-----	30	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
145RO: Roxbury-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.80 0.10	Very limited Flooding	1.00
145UC: Uly-----	100	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
151KP: Kanza-----	50	Very limited Flooding Depth to saturated zone	1.00 0.75	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 1.00 0.80	Very limited Flooding Depth to saturated zone Droughty	1.00 0.75 0.02
Plevna-----	50	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Flooding	1.00 1.00 1.00 0.80	Very limited Flooding Depth to saturated zone	1.00 1.00
185PR: Pratt-----	60	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Carwile-----	40	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey Cutbanks cave	1.00 1.00 0.28 0.10	Very limited Ponding Depth to saturated zone	1.00 1.00

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Aa: Attica-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Ab: Attica-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Ac: Attica-----	75	Somewhat limited Depth to saturated zone	0.75	Very limited Depth to saturated zone Cutbanks cave	1.00	Somewhat limited Depth to saturated zone	0.75
Carwile-----	25	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.28 0.10	Very limited Depth to saturated zone	1.00
ARR: Arkansas River-----	100	Not rated		Not rated		Not rated	
Bk: Coly-----	75	Somewhat limited Frost action Slope	0.50 0.00	Somewhat limited Cutbanks cave Slope	0.10 0.00	Somewhat limited Slope	0.00
Tobin-----	25	Very limited Flooding Shrink-swell Frost action	1.00 0.50 0.50	Somewhat limited Flooding Cutbanks cave	0.60 0.10	Somewhat limited Flooding	0.60
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	
Cc: Campus-----	75	Somewhat limited Depth to hard bedrock Slope	0.90 0.37	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 0.37 0.10	Somewhat limited Depth to bedrock Slope	0.90 0.37
Canlon-----	25	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 0.37 0.10	Very limited Depth to bedrock Droughty Slope	1.00 0.99 0.37
Cd: Canadian-----	100	Somewhat limited Flooding	0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
CF: Darr-----	100	Somewhat limited Flooding	0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
Cr: Carwile-----	100	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.28 0.10	Very limited Depth to saturated zone	1.00
Cs: Carwile-----	90	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey Cutbanks cave	1.00 1.00 0.28 0.10	Very limited Ponding Depth to saturated zone	1.00 1.00
Drummond-----	10	Very limited Shrink-swell	1.00	Somewhat limited Depth to saturated zone Too clayey Cutbanks cave	0.61 0.28 0.10	Very limited Sodium content	1.00
Fa: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Fr: Farnum-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Ha: Harney-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Hb: Harney-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Hc: Harney-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Hd: Harney-----	80	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Uly-----	20	Somewhat limited Frost action	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
He: Harney-----	70	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Uly-----	30	Somewhat limited Frost action	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Hg: Holdrege-----	100	Somewhat limited Shrink-swell	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Hh: Holdrege-----	100	Somewhat limited Shrink-swell Frost action	0.50 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Ho: Hord-----	100	Somewhat limited Flooding	0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
La: Las Animas-----	100	Very limited Flooding Frost action Depth to saturated zone	1.00 0.50 0.03	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 1.00 0.60	Somewhat limited Flooding Depth to saturated zone	0.60 0.03
Lh: Lesho-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
Lk: Lubbock-----	100	Very limited Shrink-swell	1.00	Somewhat limited Cutbanks cave	0.10	Not limited	
Na: Naron-----	100	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
Nf: Naron-----	100	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
Ng: Naron-----	100	Not limited		Somewhat limited Cutbanks cave	0.10	Not limited	
Ns: Ness-----	100	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave Too clayey	1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 1.00
Pa: Platte-----	100	Very limited Flooding Depth to saturated zone	1.00 0.75	Very limited Depth to saturated zone Cutbanks cave Flooding Depth to dense layer	1.00 1.00 1.00 0.60 0.50	Somewhat limited Depth to saturated zone Flooding Droughty	0.75 0.60 0.57
Pe: Plevna-----	100	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Flooding Cutbanks cave	1.00 0.80 0.10	Very limited Flooding Depth to saturated zone	1.00 1.00
Pf: Pratt-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pg: Pratt-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Pr: Pratt-----	65	Not limited		Very limited Cutbanks cave	1.00	Not limited	
Lincoln-----	35	Very limited Flooding	1.00	Very limited Cutbanks cave Flooding Depth to saturated zone	1.00 0.60 0.03	Somewhat limited Droughty Flooding	0.98 0.60
PRR: Pratt-----	100	Not limited		Very limited Cutbanks cave	1.00	Not limited	
PSS: Pratt-----	100	Somewhat limited Slope	0.00	Very limited Cutbanks cave Slope	1.00 0.00	Somewhat limited Slope	0.00
Pt: Pratt-----	65	Somewhat limited Slope	0.00	Very limited Cutbanks cave Slope	1.00 0.00	Somewhat limited Slope	0.00
Tivoli-----	35	Somewhat limited Slope	0.16	Very limited Cutbanks cave Slope	1.00 0.16	Somewhat limited Droughty Slope	0.97 0.16
SAP: Sand Pit-----	100	Not rated		Not rated		Not rated	
Ta: Tabler-----	100	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.28 0.10	Not limited	
Tb: Tabler-----	90	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.28 0.10	Not limited	
Drummond-----	10	Very limited Shrink-swell	1.00	Somewhat limited Depth to saturated zone Too clayey Cutbanks cave	0.61 0.28 0.10	Not limited	
Tf: Tivoli-----	100	Very limited Slope	1.00	Very limited Cutbanks cave Slope	1.00 1.00	Very limited Slope Droughty	1.00 1.00
To: Tobin-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.60 0.10	Somewhat limited Flooding	0.60
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Flooding	1.00	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
Wc: Waldeck-----	100	Very limited Flooding	1.00	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding	0.60
Za: Zenda-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Flooding Cutbanks cave	0.95 0.60 0.10	Somewhat limited Flooding	0.60
Ze: Lesho-----	100	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Cutbanks cave Depth to saturated zone Flooding	1.00 0.95 0.60	Somewhat limited Flooding Salinity	0.60 0.13

BUILDING SITE DEVELOPMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Zs: Zenda-----	85	Very limited Flooding	1.00	Somewhat limited Depth to saturated zone	0.95	Somewhat limited Flooding	0.60
		Shrink-swell	0.50	Flooding	0.60		
				Cutbanks cave	0.10		
Drummond-----	15	Very limited Shrink-swell	1.00	Somewhat limited Depth to saturated zone	0.61	Very limited Sodium content	1.00
				Too clayey	0.28		
				Cutbanks cave	0.10		

CONSTRUCTION MATERIALS
Edwards County, Kansas

Construction Materials

The following tables give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated good, fair, or poor as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

The soils are rated as a probable or improbable source of sand and gravel. A rating of probable means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In these tables, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
057AN: Roxbury-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
057LA: Las Animas, occasionally flooded-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.09
057LC: Las Animas-----	80	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.07
Lincoln-----	20	Poor Bottom layer Thickest layer	0.00 0.00	Good Bottom layer	0.89
097AT: Attica-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.07 0.09
097AX: Attica-----	60	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.07 0.09
Carwile-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
097TH: Tivoli-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.99 0.99
145HC: Harney-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
145HD: Harney-----	70	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Uly-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
145RO: Roxbury-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
145UC: Uly-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
151KP: Kanza-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.57 0.98
Plevna-----	50	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.09
185PR: Pratt-----	60	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.19 0.57

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Carwile-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.02
Aa: Attica-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.09 0.72
Ab: Attica-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.09 0.72
Ac: Attica-----	75	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.09 0.72
Carwile-----	25	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
ARR: Arkansas River-----	100	Not rated		Not rated	
Bk: Coly-----	75	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Tobin-----	25	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
BOP: Borrow Pits-----	100	Not rated		Not rated	
Cc: Campus-----	75	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Canlon-----	25	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Cd: Canadian-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.07 0.09
Cf: Darr-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.07 0.07
Cr: Carwile-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Cs: Carwile-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Drummond-----	10	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Fa: Farnum-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.06

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Fr: Farnum-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ha: Harney-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Hb: Harney-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Hc: Harney-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Hd: Harney-----	80	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Uly-----	20	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
He: Harney-----	70	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Uly-----	30	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Hg: Holdrege-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Hh: Holdrege-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ho: Hord-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
La: Las Animas-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.04
Lh: Lesho-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.99
Lk: Lubbock-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Na: Naron-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.05 0.62
Nf: Naron-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.05 0.07

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Ng: Naron-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.05 0.07
Ns: Ness-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Pa: Platte-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.97
Pe: Plevna-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.06 0.09
Pf: Pratt-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.19 0.57
Pg: Pratt-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.19 0.57
Pr: Pratt-----	65	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.19 0.57
Lincoln-----	35	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.22 0.39
PRR: Pratt-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.19 0.44
PSS: Pratt-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.19 0.57
Pt: Pratt-----	65	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.19 0.57
Tivoli-----	35	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.57 0.99
SAP: Sand Pit-----	100	Not rated		Not rated	
Ta: Tabler-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Tb: Tabler-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Drummond-----	10	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Tf: Tivoli-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.99 0.99
To: Tobin-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
W: Water-----	100	Not rated		Not rated	
Wa: Waldeck-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.10
Wc: Waldeck-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.10
Za: Zenda-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Ze: Lesho-----	100	Poor Bottom layer Thickest layer	0.00 0.00	Good Thickest layer	0.00
Zs: Zenda-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Drummond-----	15	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Fair Water erosion	0.90	Poor Low strength Shrink-swell	0.00 0.96	Good	
057LA: Las Animas, occasionally flooded-----	100	Fair Low content of organic matter	0.12	Fair Depth to saturated zone	0.76	Fair Depth to saturated zone	0.76
057LC: Las Animas-----	80	Fair Low content of organic matter	0.12	Fair Depth to saturated zone	0.76	Fair Depth to saturated zone	0.76
Lincoln-----	20	Poor Wind erosion Too sandy Low content of organic matter	0.00 0.00 0.08	Good		Poor Too sandy	0.00
097AT: Attica-----	100	Poor Wind erosion Low content of organic matter Too acid	0.00 0.18 0.95	Good		Good	
097AX: Attica-----	60	Poor Wind erosion Low content of organic matter Too acid	0.00 0.18 0.95	Good		Good	
Carwile-----	40	Poor Too clayey Low content of organic matter Too acid No water erosion limitation	0.00 0.08 0.97 0.99	Poor Depth to saturated zone Shrink-swell	0.00 0.25	Poor Depth to saturated zone Too Clayey	0.00 0.00
097TH: Tivoli-----	100	Poor Too sandy Wind erosion Droughty Low content of organic matter	0.00 0.00 0.00 0.08	Fair Slope	0.50	Poor Too sandy Slope	0.00 0.00
145HC: Harney-----	100	Fair Too clayey Water erosion	0.05 0.90	Fair Shrink-swell	0.99	Fair Too Clayey	0.04
145HD: Harney-----	70	Fair Too clayey Water erosion	0.05 0.90	Fair Shrink-swell	0.99	Fair Too Clayey	0.04
Uly-----	30	Fair Low content of organic matter Water erosion	0.18 0.90	Good		Good	
145RO: Roxbury-----	100	Fair Low content of organic matter Water erosion	0.50 0.90	Fair Shrink-swell	0.91	Good	
145UC: Uly-----	100	Fair Low content of organic matter Water erosion	0.50 0.90	Good		Good	

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
151KP: Kanza-----	50	Poor Wind erosion Low content of organic matter Too sandy Droughty Too acid	0.00 0.00 0.00 0.18 0.95	Fair Depth to saturated zone	0.14	Poor Too sandy Depth to saturated zone	0.00 0.14
Plevna-----	50	Poor Low content of organic matter	0.00	Poor Depth to saturated zone	0.00	Poor Depth to saturated zone	0.00
185PR: Pratt-----	60	Poor Wind erosion Low content of organic matter Too sandy	0.00 0.00 0.00	Good		Poor Too sandy	0.00
Carwile-----	40	Poor Low content of organic matter Too clayey Too acid No water erosion limitation	0.00 0.00 0.00 0.97 0.99	Poor Depth to saturated zone Shrink-swell	0.00 0.17	Poor Depth to saturated zone Too Clayey	0.00 0.00
Aa: Attica-----	100	Fair Low content of organic matter Too acid	0.08 0.95	Good		Good	
Ab: Attica-----	100	Fair Low content of organic matter Too acid	0.08 0.95	Good		Good	
Ac: Attica-----	75	Fair Low content of organic matter Too acid	0.08 0.95	Fair Depth to saturated zone	0.14	Fair Depth to saturated zone	0.14
Carwile-----	25	Poor Low content of organic matter Too clayey Too acid No water erosion limitation	0.00 0.00 0.00 0.97 0.99	Poor Depth to saturated zone Shrink-swell	0.00 0.22	Poor Depth to saturated zone Too Clayey	0.00 0.00
ARR: Arkansas River-----	100	Not rated		Not rated		Not rated	
Bk: Coly-----	75	Fair Low content of organic matter Water erosion	0.50 0.90	Good		Good	
Tobin-----	25	Good		Fair Shrink-swell	0.92	Good	
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	
Cc: Campus-----	75	Fair Depth to bedrock Droughty Low content of organic matter	0.10 0.54 0.68	Poor Depth to bedrock	0.00	Fair Depth to bedrock Slope	0.10 0.63

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Canlon-----	25	Poor Droughty Depth to bedrock Low content of organic matter	0.00 0.00 0.18	Poor Depth to bedrock	0.00	Poor Depth to bedrock Rock fragments Slope	0.00 0.28 0.63
Cd: Canadian-----	100	Fair Low content of organic matter	0.68	Good		Good	
Cf: Darr-----	100	Fair Low content of organic matter	0.18	Good		Good	
Cr: Carwile-----	100	Poor Too clayey Low content of organic matter Too acid No water erosion limitation	0.00 0.50 0.97 0.99	Poor Depth to saturated zone Shrink-swell	0.00 0.22	Poor Depth to saturated zone Too Clayey	0.00 0.00
Cs: Carwile-----	90	Poor Too clayey Low content of organic matter Too acid No water erosion limitation	0.00 0.50 0.97 0.99	Poor Depth to saturated zone Shrink-swell	0.00 0.22	Poor Depth to saturated zone Too Clayey	0.00 0.00
Drummond-----	10	Poor Sodium content Too clayey Water erosion Low content of organic matter	0.00 0.00 0.37 0.50	Fair Shrink-swell	0.12	Poor Sodium content Too Clayey Salinity	0.00 0.00 0.88
Fa: Farnum-----	100	Poor Low content of organic matter	0.00	Good		Good	
Fr: Farnum-----	100	Fair Low content of organic matter	0.18	Good		Good	
Ha: Harney-----	100	Fair Too clayey Low content of organic matter Water erosion	0.05 0.50 0.90	Good		Fair Too Clayey	0.04
Hb: Harney-----	100	Fair Too clayey Low content of organic matter Water erosion	0.05 0.50 0.90	Good		Fair Too Clayey	0.04
Hc: Harney-----	100	Fair Too clayey Low content of organic matter Water erosion	0.05 0.50 0.90	Good		Fair Too Clayey	0.04
Hd: Harney-----	80	Fair Too clayey Water erosion	0.05 0.90	Good		Fair Too Clayey	0.04

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Uly-----	20	Fair Low content of organic matter Water erosion	0.50 0.90	Good		Good	
He: Harney-----	70	Fair Too clayey Water erosion	0.05 0.90	Good		Fair Too Clayey	0.04
Uly-----	30	Fair Low content of organic matter Water erosion	0.50 0.90	Good		Good	
Hg: Holdrege-----	100	Fair Water erosion Too clayey	0.90 0.95	Fair Shrink-swell	0.87	Fair Too Clayey	0.84
Hh: Holdrege-----	100	Fair Low content of organic matter Water erosion	0.12 0.90	Fair Shrink-swell	0.87	Good	
Ho: Hord-----	100	Good		Good		Good	
La: Las Animas-----	100	Poor Wind erosion Low content of organic matter	0.00 0.50	Fair Depth to saturated zone	0.76	Fair Depth to saturated zone	0.76
Lh: Lesho-----	100	Fair Low content of organic matter Too clayey	0.02 0.95	Good		Fair Too Clayey	0.90
Lk: Lubbock-----	100	Poor Too clayey Low content of organic matter	0.00 0.82	Fair Shrink-swell	0.60	Poor Too Clayey	0.00
Na: Naron-----	100	Poor Wind erosion Low content of organic matter	0.00 0.50	Good		Good	
Nf: Naron-----	100	Fair Low content of organic matter	0.50	Good		Good	
Ng: Naron-----	100	Fair Low content of organic matter	0.50	Good		Good	
Ns: Ness-----	100	Poor Too clayey Water erosion	0.00 0.90	Poor Depth to saturated zone Shrink-swell	0.00 0.56	Poor Too Clayey Depth to saturated zone	0.00 0.00

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pa: Platte-----	100	Poor Too sandy Droughty Low content of organic matter	0.00 0.07 0.08	Fair Depth to saturated zone	0.14	Poor Hard to reclaim Too sandy Rock fragments Depth to saturated zone Hard to reclaim	0.00 0.00 0.03 0.14 0.98
Pe: Plevna-----	100	Good		Poor Depth to saturated zone	0.00	Poor Depth to saturated zone	0.00
Pf: Pratt-----	100	Poor Wind erosion Too sandy Low content of organic matter	0.00 0.00 0.02	Good		Poor Too sandy	0.00
Pg: Pratt-----	100	Poor Wind erosion Low content of organic matter Too sandy	0.00 0.00 0.00	Good		Poor Too sandy	0.00
Pr: Pratt-----	65	Poor Wind erosion Too sandy Low content of organic matter	0.00 0.00 0.02	Good		Poor Too sandy	0.00
Lincoln-----	35	Poor Wind erosion Droughty Low content of organic matter Too sandy	0.00 0.01 0.08 0.22	Good		Fair Too sandy	0.22
PRR: Pratt-----	100	Poor Wind erosion Low content of organic matter Too sandy	0.00 0.00 0.00	Good		Poor Too sandy	0.00
PSS: Pratt-----	100	Poor Wind erosion Low content of organic matter Too sandy	0.00 0.00 0.00	Good		Poor Too sandy	0.00
Pt: Pratt-----	65	Poor Wind erosion Low content of organic matter Too sandy	0.00 0.00 0.00	Good		Poor Too sandy	0.00
Tivoli-----	35	Poor Too sandy Wind erosion Low content of organic matter Droughty	0.00 0.00 0.00 0.02	Good		Poor Too sandy Slope	0.00 0.84
SAP: Sand Pit-----	100	Not rated		Not rated		Not rated	
Ta: Tabler-----	100	Poor Too clayey Water erosion	0.00 0.90	Fair Shrink-swell	0.12	Poor Too Clayey	0.00

CONSTRUCTION MATERIALS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Tb: Tabler-----	90	Poor Too clayey Water erosion	0.00 0.90	Fair Shrink-swell	0.12	Poor Too Clayey	0.00
Drummond-----	10	Poor Low content of organic matter Too clayey Droughty Water erosion	0.00 0.00 0.27 0.37	Fair Shrink-swell	0.12	Poor Too Clayey Salinity	0.00 0.88
Tf: Tivoli-----	100	Poor Too sandy Wind erosion Droughty Low content of organic matter	0.00 0.00 0.00 0.08	Good		Poor Too sandy Slope	0.00 0.00
To: Tobin-----	100	Good		Fair Shrink-swell	0.92	Good	
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Fair Low content of organic matter	0.08	Good		Good	
Wc: Waldeck-----	100	Fair Low content of organic matter	0.08	Good		Good	
Za: Zenda-----	100	Fair Low content of organic matter	0.18	Fair Shrink-swell	0.87	Good	
Ze: Lesho-----	100	Fair Low content of organic matter Sodium content Salinity	0.50 0.78 0.88	Fair Shrink-swell	0.91	Poor Salinity Sodium content	0.00 0.78
Zs: Zenda-----	85	Fair Low content of organic matter	0.18	Fair Shrink-swell	0.87	Good	
Drummond-----	15	Poor Sodium content Too clayey Water erosion Low content of organic matter	0.00 0.00 0.37 0.50	Fair Shrink-swell	0.12	Poor Sodium content Too Clayey Salinity	0.00 0.00 0.88

RECREATIONAL INTERPRETATIONS
Edwards County, Kansas

Recreation

The soils of the survey area are rated in the following tables according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas.

The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

RECREATIONAL INTERPRETATIONS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Very limited Flooding	1.00	Somewhat limited Flooding	0.40	Very limited Flooding	1.00
057LA: Las Animas, occasionally flooded-----	100	Very limited Flooding Depth to saturated zone	 1.00 0.07	Somewhat limited Depth to saturated zone	 0.03	Somewhat limited Flooding Depth to saturated zone	 0.60 0.07
057LC: Las Animas-----	80	Very limited Flooding Depth to saturated zone	1.00 0.07	Somewhat limited Depth to saturated zone	0.03	Somewhat limited Flooding Depth to saturated zone	0.60 0.07
Lincoln-----	20	Very limited Flooding Too sandy	1.00 1.00	Very limited Too sandy	1.00	Very limited Too sandy Flooding	1.00 0.60
097AT: Attica-----	100	Somewhat limited Too sandy	0.96	Somewhat limited Too sandy	0.96	Somewhat limited Too sandy Slope	0.96 0.13
097AX: Attica-----	60	Somewhat limited Too sandy	0.96	Somewhat limited Too sandy	0.96	Somewhat limited Too sandy Slope	0.96 0.13
Carwile-----	40	Very limited Depth to saturated zone Restricted permeability	1.00 0.94	Very limited Depth to saturated zone Restricted permeability	1.00 0.94	Very limited Depth to saturated zone Restricted permeability	1.00 0.94
097TH: Tivoli-----	100	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 1.00	Very limited Slope Too sandy	1.00 1.00
145HC: Harney-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
145HD: Harney-----	70	Not limited		Not limited		Somewhat limited Slope	0.87
Uly-----	30	Not limited		Not limited		Somewhat limited Slope	0.87
145RO: Roxbury-----	100	Very limited Flooding	1.00	Somewhat limited Flooding	0.40	Very limited Flooding	1.00
145UC: Uly-----	100	Not limited		Not limited		Somewhat limited Slope	0.87
151KP: Kanza-----	50	Very limited Flooding Depth to saturated zone Too sandy	1.00 0.98 0.92	Somewhat limited Too sandy Depth to saturated zone Flooding	0.92 0.75 0.40	Very limited Flooding Depth to saturated zone Too sandy	1.00 0.98 0.92
Plevna-----	50	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Flooding Depth to saturated zone	1.00 1.00
185PR: Pratt-----	60	Somewhat limited Too sandy	0.37	Somewhat limited Too sandy	0.37	Somewhat limited Slope Too sandy	0.87 0.37
Carwile-----	40	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.94	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.94	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.94
Aa: Attica-----	100	Not limited		Not limited		Not limited	
Ab: Attica-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Ac: Attica-----	75	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98

RECREATIONAL INTERPRETATIONS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Carwile-----	25	Very limited Depth to saturated zone Restricted permeability	1.00 0.94	Very limited Depth to saturated zone Restricted permeability	1.00 0.94	Slope Very limited Depth to saturated zone Restricted permeability	0.00 1.00 0.94
ARR: Arkansas River-----	100	Not rated		Not rated		Not rated	
Bk: Coly-----	75	Somewhat limited Slope	0.00	Somewhat limited Slope	0.00	Very limited Slope	1.00
Tobin-----	25	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	
Cc: Campus-----	75	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope Depth to bedrock	1.00 0.90
Canlon-----	25	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.06
Cd: Canadian-----	100	Very limited Flooding	1.00	Not limited		Not limited	
Cf: Darr-----	100	Very limited Flooding	1.00	Not limited		Not limited	
Cr: Carwile-----	100	Very limited Depth to saturated zone Restricted permeability	1.00 0.94	Very limited Depth to saturated zone Restricted permeability	1.00 0.94	Very limited Depth to saturated zone Restricted permeability	1.00 0.94
Cs: Carwile-----	90	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.94	Very limited Ponding Depth to saturated zone Restricted permeability	1.00 1.00 0.94	Very limited Depth to saturated zone Ponding Restricted permeability	1.00 1.00 0.94
Drummond-----	10	Very limited Sodium content Restricted permeability	1.00 0.45	Very limited Sodium content Restricted permeability	1.00 0.45	Very limited Sodium content Restricted permeability	1.00 0.45
Fa: Farnum-----	100	Not limited		Not limited		Not limited	
Fr: Farnum-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Ha: Harney-----	100	Not limited		Not limited		Not limited	
Hb: Harney-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Hc: Harney-----	100	Not limited		Not limited		Somewhat limited Slope	0.87
Hd: Harney-----	80	Not limited		Not limited		Somewhat limited Slope	0.00
Uly-----	20	Not limited		Not limited		Somewhat limited Slope	0.00
He: Harney-----	70	Not limited		Not limited		Somewhat limited Slope	0.87
Uly-----	30	Not limited		Not limited		Somewhat limited Slope	0.87
Hg: Holdrege-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Hh: Holdrege-----	100	Not limited		Not limited		Somewhat limited	

RECREATIONAL INTERPRETATIONS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ho: Hord-----	100	Very limited Flooding	1.00	Not limited		Slope	0.87
La: Las Animas-----	100	Very limited Flooding Too sandy	1.00 0.94	Somewhat limited Too sandy Depth to saturated zone	0.94 0.03	Somewhat limited Too sandy Flooding	0.94 0.60
		Depth to saturated zone	0.07			Depth to saturated zone	0.07
Lh: Lesho-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Lk: Lubbock-----	100	Not limited		Not limited		Not limited	
Na: Naron-----	100	Somewhat limited Too sandy	0.94	Somewhat limited Too sandy	0.94	Somewhat limited Too sandy	0.94
Nf: Naron-----	100	Not limited		Not limited		Not limited	
Ng: Naron-----	100	Not limited		Not limited		Somewhat limited Slope	0.00
Ns: Ness-----	100	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
		Too clayey Restricted permeability	0.50 0.45	Too clayey Restricted permeability	0.50 0.45	Too clayey Restricted permeability	0.50 0.45
Pa: Platte-----	100	Very limited Flooding	1.00	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone Flooding	0.98 0.60
		Depth to saturated zone	0.98				
Pe: Plevna-----	100	Very limited Flooding	1.00	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Flooding Depth to saturated zone	1.00 1.00
		Depth to saturated zone	1.00				
Pf: Pratt-----	100	Somewhat limited Too sandy	0.37	Somewhat limited Too sandy	0.37	Very limited Slope Too sandy	1.00 0.37
Pg: Pratt-----	100	Somewhat limited Too sandy	0.37	Somewhat limited Too sandy	0.37	Somewhat limited Too sandy Slope	0.37 0.13
Pr: Pratt-----	65	Somewhat limited Too sandy	0.37	Somewhat limited Too sandy	0.37	Somewhat limited Too sandy Slope	0.37 0.00
Lincoln-----	35	Very limited Flooding Too sandy	1.00 0.79	Somewhat limited Too sandy	0.79	Somewhat limited Too sandy Flooding Slope	0.79 0.60 0.00
PRR: Pratt-----	100	Somewhat limited Too sandy	0.37	Somewhat limited Too sandy	0.37	Somewhat limited Too sandy Slope	0.37 0.13
PSS: Pratt-----	100	Somewhat limited Too sandy Slope	0.37 0.00	Somewhat limited Too sandy Slope	0.37 0.00	Very limited Slope Too sandy	1.00 0.37
Pt: Pratt-----	65	Somewhat limited Too sandy Slope	0.37 0.00	Somewhat limited Too sandy Slope	0.37 0.00	Very limited Slope Too sandy	1.00 0.37
Tivoli-----	35	Somewhat limited Too sandy Slope	0.92 0.16	Somewhat limited Too sandy Slope	0.92 0.16	Very limited Slope Too sandy	1.00 0.92
SAP: Sand Pit-----	100	Not rated		Not rated		Not rated	
Ta: Tabler-----	100	Somewhat limited		Somewhat limited		Somewhat limited	

RECREATIONAL INTERPRETATIONS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Tb: Tabler-----	90	Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
Drummond-----	10	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
Tf: Tivoli-----	100	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45	Somewhat limited Restricted permeability	0.45
To: Tobin-----	100	Very limited Too sandy Slope	1.00 1.00	Very limited Too sandy Slope	1.00 1.00	Very limited Slope Too sandy	1.00 1.00
W: Water-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Wa: Waldeck-----	100	Not rated		Not rated		Not rated	
Wc: Waldeck-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Za: Zenda-----	100	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Ze: Lesho-----	100	Very limited Flooding Salinity	1.00 0.13	Somewhat limited Salinity	0.13	Somewhat limited Flooding Salinity	0.60 0.13
Zs: Zenda-----	85	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
Drummond-----	15	Very limited Sodium content Restricted permeability	1.00 0.45	Very limited Sodium content Restricted permeability	1.00 0.45	Very limited Sodium content Restricted permeability	1.00 0.45

RECREATIONAL INTERPRETATIONS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Somewhat limited Flooding	0.40	Very limited Flooding	1.00
057LA: Las Animas, occasionally flooded-----	100	Not limited		Somewhat limited Flooding Depth to saturated zone	0.60 0.03
057LC: Las Animas-----	80	Not limited		Somewhat limited Flooding Depth to saturated zone	0.60 0.03
Lincoln-----	20	Very limited Too sandy	1.00	Somewhat limited Flooding Too sandy	0.60 0.50
097AT: Attica-----	100	Somewhat limited Too sandy	0.96	Not limited	
097AX: Attica-----	60	Somewhat limited Too sandy	0.96	Not limited	
Carwile-----	40	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
097TH: Tivoli-----	100	Very limited Too sandy Slope	1.00 0.50	Very limited Slope Droughty	1.00 1.00
145HC: Harney-----	100	Not limited		Not limited	
145HD: Harney-----	70	Not limited		Not limited	
Uly-----	30	Not limited		Not limited	
145RO: Roxbury-----	100	Somewhat limited Flooding	0.40	Very limited Flooding	1.00
145UC: Uly-----	100	Not limited		Not limited	
151KP: Kanza-----	50	Somewhat limited Too sandy Depth to saturated zone Flooding	0.92 0.44	Very limited Flooding Depth to saturated zone Droughty	1.00 0.75 0.02
Plevna-----	50	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Flooding Depth to saturated zone	1.00 1.00
185PR: Pratt-----	60	Somewhat limited Too sandy	0.37	Not limited	
Carwile-----	40	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
Aa: Attica-----	100	Not limited		Not limited	
Ab: Attica-----	100	Not limited		Not limited	
Ac: Attica-----	75	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
Carwile-----	25	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
ARR: Arkansas River-----	100	Not rated		Not rated	
Bk: Coly-----	75	Not limited		Somewhat limited Slope	0.00
Tobin-----	25	Not limited		Somewhat limited	

RECREATIONAL INTERPRETATIONS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BOP: Borrow Pits-----	100	Not rated		Flooding Not rated	0.60
Cc: Campus-----	75	Not limited		Somewhat limited Depth to bedrock Slope	0.90 0.37
Canlon-----	25	Not limited		Very limited Depth to bedrock Droughty Slope	1.00 0.99 0.37
Cd: Canadian-----	100	Not limited		Not limited	
Cf: Darr-----	100	Not limited		Not limited	
Cr: Carwile-----	100	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Cs: Carwile-----	90	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
Drummond-----	10	Not limited		Very limited Sodium content	1.00
Fa: Farnum-----	100	Not limited		Not limited	
Fr: Farnum-----	100	Not limited		Not limited	
Ha: Harney-----	100	Not limited		Not limited	
Hb: Harney-----	100	Not limited		Not limited	
Hc: Harney-----	100	Not limited		Not limited	
Hd: Harney-----	80	Not limited		Not limited	
Uly-----	20	Not limited		Not limited	
He: Harney-----	70	Not limited		Not limited	
Uly-----	30	Not limited		Not limited	
Hg: Holdrege-----	100	Not limited		Not limited	
Hh: Holdrege-----	100	Not limited		Not limited	
Ho: Hord-----	100	Not limited		Not limited	
La: Las Animas-----	100	Somewhat limited Too sandy	0.94	Somewhat limited Flooding Depth to saturated zone	0.60 0.03
Lh: Lesho-----	100	Not limited		Somewhat limited Flooding	0.60
Lk: Lubbock-----	100	Not limited		Not limited	
Na: Naron-----	100	Somewhat limited Too sandy	0.94	Not limited	
Nf: Naron-----	100	Not limited		Not limited	
Ng: Naron-----	100	Not limited		Not limited	
Ns: Ness-----	100	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 1.00
Pa: Platte-----	100	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone Flooding Droughty	0.75 0.60 0.57

RECREATIONAL INTERPRETATIONS--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Pe: Plevna-----	100	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Flooding Depth to saturated zone	1.00 1.00
Pf: Pratt-----	100	Somewhat limited Too sandy	0.37	Not limited	
Pg: Pratt-----	100	Somewhat limited Too sandy	0.37	Not limited	
Pr: Pratt-----	65	Somewhat limited Too sandy	0.37	Not limited	
Lincoln-----	35	Somewhat limited Too sandy	0.79	Somewhat limited Droughty Flooding	0.98 0.60
PRR: Pratt-----	100	Somewhat limited Too sandy	0.37	Not limited	
PSS: Pratt-----	100	Somewhat limited Too sandy	0.37	Somewhat limited Slope	0.00
Pt: Pratt-----	65	Somewhat limited Too sandy	0.37	Somewhat limited Slope	0.00
Tivoli-----	35	Somewhat limited Too sandy	0.92	Somewhat limited Droughty Slope	0.97 0.16
SAP: Sand Pit-----	100	Not rated		Not rated	
Ta: Tabler-----	100	Not limited		Not limited	
Tb: Tabler-----	90	Not limited		Not limited	
Drummond-----	10	Not limited		Not limited	
Tf: Tivoli-----	100	Very limited Too sandy Slope	1.00 0.00	Very limited Slope Droughty	1.00 1.00
To: Tobin-----	100	Not limited		Somewhat limited Flooding	0.60
W: Water-----	100	Not rated		Not rated	
Wa: Waldeck-----	100	Not limited		Somewhat limited Flooding	0.60
Wc: Waldeck-----	100	Not limited		Somewhat limited Flooding	0.60
Za: Zenda-----	100	Not limited		Somewhat limited Flooding	0.60
Ze: Lesho-----	100	Not limited		Somewhat limited Flooding Salinity	0.60 0.13
Zs: Zenda-----	85	Not limited		Somewhat limited Flooding	0.60
Drummond-----	15	Not limited		Very limited Sodium content	1.00

WILDLIFE INTERPRETATIONS
Edwards County, Kansas

Use and Explanation of Wildlife Interpretations

Soils directly affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the development of water impoundments. The kind and abundance of wildlife that populate an area depend largely on the amount and distribution of food, cover, water, and living space. If any one of these elements is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area. If the soils have the potential, wildlife habitat can be created or improved by planting appropriate vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

In the Wildlife Interpretations table, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

Suitability Ratings

The potential of the soil is rated good, fair, poor, or very poor.

Good - means that the element of wildlife habitat or the kind of habitat is easily created, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected if the soil is used for the designated purpose.

Fair - means that the element of wildlife habitat or kind of habitat can be created, improved, or maintained in most places. Moderately intensive management is required for satisfactory results.

Poor - means that limitations are severe for the designated element or kind of wildlife habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and requires intensive effort.

Very Poor - means that limitations are very severe for the designated element or kind of wildlife habitat. Habitat is difficult to create, improve, or maintain in most places, and management is difficult and requires intensive effort.

Description of Wildlife Habitat Elements

Openland habitat consists of croplands, pastures, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kind of wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, killdeer, cottontail rabbit, red fox, and coyote.

Woodland habitat consists of hardwood or conifers, or a mixture of these and associated grasses, legumes and wild herbaceous plants. Examples of wildlife attracted to this habitat are wild turkey, thrushes, woodpeckers, owl, tree squirrels, raccoon, and deer.

Wetland habitat consists of water-tolerant plants in open, marshy or swampy, shallow water areas. Examples of wildlife attracted to this habitat are ducks, geese, herons, bitterns, rails, kingfishers, shorebirds, muskrat, mink, and beaver.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated good are Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are fragrant sumac, chokecherry, American plum, sand plum, and gorden currant.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, saltgrass, cordgrass, rushes, sedges, and cattails.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, red fox and coyote.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Habitat for rangeland wildlife consists of areas of shrubs and wild herbaceous plants. Wildlife attracted to rangeland include antelope, deer, cottontail rabbit, prairie chicken, meadowlark, quail, and pheasant.

WILDLIFE INTERPRETATIONS
Edwards County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
057AN: ROXBURY-----	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Fair	Poor	Fair
057LA: LAS ANIMAS-----	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair	Good
057LC: LAS ANIMAS-----	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair	Good
LINCOLN-----	Fair	Fair	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
097AT: ATTICA-----	Fair	Fair	Good	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
097AX: ATTICA-----	Fair	Fair	Good	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
CARWILE-----	Fair	Good	Good	---	---	Good	Good	Fair	Good	---	Fair	Good
097TH: TIVOLI-----	Poor	Poor	Fair	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
145HC: HARNEY-----	Good	Good	Good	Poor	Poor	Good	Poor	Fair	Good	---	Poor	Good
145HD: HARNEY-----	Fair	Good	Fair	Poor	Poor	Fair	Poor	Poor	Fair	---	Poor	Fair
ULY-----	Fair	Good	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Good
145RO: ROXBURY-----	Good	Good	Good	Fair	Fair	Fair	Poor	Fair	Good	Fair	Poor	Fair
145UC: ULY-----	Fair	Good	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Good
151KP: KANZA-----	Very poor	Poor	Fair	---	---	Fair	Fair	Fair	Poor	---	Fair	Fair
PLEVNA-----	Poor	Fair	Fair	---	---	Fair	Good	Good	Fair	---	Good	Fair
185PR: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
CARWILE-----	Fair	Good	Good	---	---	Good	Good	Fair	Good	---	Fair	Good
Aa: ATTICA-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Ab: ATTICA-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Ac: ATTICA-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
CARWILE-----	Fair	Good	Good	---	---	Good	Good	Fair	Good	---	Fair	Good
ARR: ARKANSAS RIVER--	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor	Poor	Very poor
Bk: COLY-----	Fair	Good	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Fair
TOBIN-----	Good	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor	Good
BOP: BORROW PITS-----	---	---	---	---	---	---	---	---	---	---	---	---
Cc: CAMPUS-----	Poor	Fair	Good	---	---	Poor	Very poor	Very poor	Fair	---	Very poor	Fair

WILDLIFE INTERPRETATIONS--Continued
Edwards County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
CANLON-----	Poor	Poor	Poor	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
Cd: CANADIAN-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Cf: DARR-----	Good	Good	Good	---	---	Good	Poor	Very poor	Good	---	Very poor	Good
Cr: CARWILE-----	Fair	Good	Good	---	---	Good	Good	Fair	Good	---	Fair	Good
Cs: CARWILE-----	Fair	Good	Good	---	---	Good	Good	Fair	Good	---	Fair	Good
DRUMMOND-----	Poor	Fair	Fair	---	Poor	Poor	Fair	Fair	Fair	---	Fair	Poor
Fa: FARNUM-----	Good	Good	Good	---	---	Good	Poor	Poor	Good	---	Poor	Good
Fr: FARNUM-----	Good	Good	Good	---	---	Good	Poor	Poor	Good	---	Poor	Good
Ha: HARNEY-----	Good	Good	Good	Poor	Poor	Good	Poor	Fair	Good	---	Poor	Good
Hb: HARNEY-----	Good	Good	Good	Poor	Poor	Good	Poor	Fair	Good	---	Poor	Good
Hc: HARNEY-----	Fair	Good	Fair	Poor	Poor	Fair	Poor	Poor	Fair	---	Poor	Fair
Hd: HARNEY-----	Good	Good	Good	Poor	Poor	Good	Poor	Fair	Good	---	Poor	Good
ULY-----	Good	Good	Good	Good	Fair	Fair	Very poor	Very poor	Good	Good	Very poor	Good
He: HARNEY-----	Fair	Good	Fair	Poor	Poor	Fair	Poor	Poor	Fair	---	Poor	Fair
ULY-----	Fair	Good	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Good
Hg: HOLDREGE-----	Good	Good	Fair	Good	Fair	Fair	Very poor	Very poor	Good	Good	Very poor	Fair
Hh: HOLDREGE-----	Fair	Good	Fair	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Fair
Ho: HORD-----	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor	Good
La: LAS ANIMAS-----	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair	Good
Lh: LESHO-----	Fair	Fair	Fair	---	---	Fair	Fair	Fair	Fair	---	Fair	Fair
Lk: LUBBOCK-----	Good	Good	Fair	---	---	Poor	Poor	Fair	Fair	---	Poor	Fair
Na: NARON-----	Fair	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Nf: NARON-----	Good	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Ng: NARON-----	Good	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Ns: NESS-----	Poor	Poor	Poor	---	---	Poor	Fair	Good	Poor	---	Good	Poor
Pa: PLATTE-----	Fair	Good	Fair	Poor	Fair	Good	Fair	Good	Fair	Poor	Good	Fair

WILDLIFE INTERPRETATIONS--Continued
Edwards County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
Pe: PLEVNA-----	Poor	Fair	Fair	---	---	Fair	Good	Good	Fair	---	Good	Fair
Pf: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
Pg: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
Pr: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
LINCOLN-----	Fair	Fair	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
PRR: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
PSS: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
Pt: PRATT-----	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
TIVOLI-----	Poor	Poor	Fair	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
SAP: SAND PIT-----	---	---	---	---	---	---	---	---	---	---	---	---
Ta: TABLER-----	Good	Good	Fair	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
Tb: TABLER-----	Good	Good	Fair	---	---	Fair	Poor	Poor	Good	---	Poor	Fair
DRUMMOND-----	Poor	Fair	Fair	---	Poor	Poor	Fair	Fair	Fair	---	Fair	Poor
Tf: TIVOLI-----	Poor	Poor	Fair	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
To: TOBIN-----	Good	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor	Good
W: WATER-----	---	---	---	---	---	---	---	---	---	---	---	---
Wa: WALDECK-----	Fair	Good	Good	---	---	Good	Fair	Fair	Good	---	Fair	Good
Wc: WALDECK-----	Fair	Good	Good	---	---	Good	Fair	Fair	Good	---	Fair	Good
Za: ZENDA-----	Fair	Good	Good	---	---	Good	Fair	Fair	Good	---	Fair	Good
Ze: LESHO-----	Fair	Fair	Good	---	---	Fair	Fair	Fair	Fair	---	Fair	Fair
Zs: ZENDA-----	Fair	Good	Good	---	---	Good	Fair	Fair	Good	---	Fair	Good
DRUMMOND-----	Poor	Fair	Fair	---	Poor	Poor	Fair	Fair	Fair	---	Fair	Poor

YIELDS PER ACRE OF PASTURE AND HAYLAND
Edwards County, Kansas

Use and Explanation of Pastureland and Hayland Interpretations

This subsection provides information concerning the suitability of soils for the production of pasture and hayland. This subsection may contain pasture and hayland suitability groupings, land capability and yield estimates, yield estimates for individual grasses or legumes, or other information pertaining to the production of forage.

Pasture and Hayland Suitability Groupings

Soils are placed in pasture and hayland groups according to their suitability for the production of forage. The soils in each group are enough alike to be suited to the same grasses or legumes, to have similar limitations and hazards, to require similar management, and to have similar productivity and other responses to management. Thus, the pasture and hayland suitability group is a convenient way of grouping the soils for their management. If used, these groupings are identified and described in other reports in the subsection.

Yield Estimates

The average yields per acre that can be expected of the principal pasture or hayland crops, under a high level of management, are presented in this subsection. In any given year, yields may be higher or lower than those indicated in the tables because of variations in rainfall or other climatic factors. The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

Under good management, proper grazing is essential for the production of high quality forage, stand survival, and erosion control. Proper grazing helps plants maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation are also important management practices.

The Pasture and Hayland table show yield estimates in tons per acre and animal unit months for pasture and hayland groups. An animal unit month is the amount of forage required by one animal unit (AU) for 30 days. On animal unit (AU) is one (1000 pound) mature cow and a calf up to weaning age (usually six months of age) or their equivalent. The Natural Resources Conservation Service uses 900 pounds of air dry forage as the amount needed to meet this requirement. To maintain a healthy and vigorous plant community, the degree of use should never be greater than 50 percent. Therefore only 25 percent of the total biomass grown is considered consumed by the grazing animal. Animal Unit Months can be converted to air dry pounds per acre production by multiplying the AUM by 30 days, then by 30 pounds per day, and then by four. This figure is the amount of total forage production.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil in the Nontechnical Description section. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)
Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Warm season grasses	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
057AN: Roxbury-----	5w	---	---	---	---	---
057LA: Las Animas, occasionally flooded-----	3w	3w	---	5.00	---	---
057LC: Las Animas-----	4w	3w	---	5.00	---	---
Lincoln-----	6s	---	---	---	---	---
097AT: Attica-----	2e	---	3.00	6.00	---	---
097AX: Attica-----	2e	---	3.00	6.00	---	---
Carwile-----	2w	---	---	---	---	---
097TH: Tivoli-----	7e	---	---	---	---	---
145HC: Harney-----	3e	---	---	---	---	---
145HD: Harney-----	4e	---	---	---	---	---
Uly-----	4e	---	---	---	---	---
145RO: Roxbury-----	5w	---	---	---	---	---
145UC: Uly-----	3e	3e	1.90	4.50	---	---
151KP: Kanza-----	5w	---	---	---	---	---
Plevna-----	5w	---	---	---	---	---
185PR: Pratt-----	4e	3e	---	5.50	---	---
Carwile-----	2w	---	---	---	---	---
Aa: Attica-----	2e	---	3.00	6.50	---	---
Ab: Attica-----	2e	---	3.00	6.50	---	---
Ac: Attica-----	2e	---	3.00	6.50	---	---
Carwile-----	2w	---	---	---	---	---
ARR: Arkansas River-----	8w	---	---	---	---	---
Bk: Coly-----	4e	4e	---	4.00	---	---
Tobin-----	2w	---	---	---	---	---
BOP: Borrow Pits-----	---	---	---	---	0.00	---
Cc: Campus-----	6e	---	---	---	---	---
Canlon-----	6s	---	---	---	---	---
Cd: Canadian-----	2e	---	3.50	---	---	---
Cf: Darr-----	2e	---	3.50	---	---	---

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)
Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Warm season grasses	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
Cr: Carwile-----	2w	---	---	---	---	---
Cs: Carwile-----	2w	---	---	---	---	---
Drummond-----	6s	---	---	---	---	---
Fa: Farnum-----	2c	1	3.00	7.00	---	---
Fr: Farnum-----	2e	2e	3.00	6.50	---	---
Ha: Harney-----	2c	1	---	6.50	---	---
Hb: Harney-----	2e	2e	---	5.50	---	---
Hc: Harney-----	3e	---	---	---	---	---
Hd: Harney-----	2e	2e	---	5.50	---	---
Uly-----	2e	2e	2.40	5.00	---	---
He: Harney-----	3e	---	---	---	---	---
Uly-----	3e	3e	1.90	4.50	---	---
Hg: Holdrege-----	2e	2e	2.30	6.00	---	---
Hh: Holdrege-----	3e	3e	2.00	5.40	---	---
Ho: Hord-----	2c	1	3.00	6.50	---	---
La: Las Animas-----	3w	3w	---	5.00	---	---
Lh: Lesho-----	3w	---	3.00	5.00	---	---
Lk: Lubbock-----	2c	1	---	6.50	---	---
Na: Naron-----	2e	1	3.00	7.00	---	---
Nf: Naron-----	2e	1	3.00	7.00	---	---
Ng: Naron-----	3e	2e	3.00	6.50	---	---
Ns: Ness-----	6w	---	---	---	---	---
Pa: Platte-----	4w	4w	2.00	4.00	---	---
Pe: Plevna-----	5w	---	---	---	---	---
Pf: Pratt-----	4e	3e	---	5.50	---	---
Pg: Pratt-----	3e	3e	---	5.50	---	---
Pr: Pratt-----	3e	3e	---	5.50	---	---
Lincoln-----	6w	---	---	---	---	---

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)
Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Warm season grasses	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
PRR: Pratt-----	3e	3e	---	5.50	---	---
PSS: Pratt-----	4e	3e	---	5.50	---	---
Pt: Pratt-----	4e	3e	---	5.50	---	---
Tivoli-----	7e	---	---	---	---	---
SAP: Sand Pit-----	---	---	---	---	---	---
Ta: Tabler-----	2s	---	---	---	---	---
Tb: Tabler-----	2s	---	---	---	---	---
Drummond-----	6s	---	---	---	---	---
Tf: Tivoli-----	7e	---	---	---	---	---
To: Tobin-----	2w	---	---	---	---	---
W: Water-----	---	---	---	---	---	---
Wa: Waldeck-----	3w	---	3.50	5.00	---	---
Wc: Waldeck-----	3w	---	3.50	5.00	---	---
Za: Zenda-----	2w	---	4.00	5.50	---	---
Ze: Lesho-----	4s	3s	2.00	4.00	---	---
Zs: Zenda-----	2w	---	4.00	5.50	---	---
Drummond-----	6s	---	---	---	---	---

CONSERVATION TREE AND SHRUB MANAGEMENT
Edwards County, Kansas

A Conservation Tree/Shrub Suitability Group (CTSG), formerly Windbreak Suitability Group, is a physiographic unit or area having similar climatic and edaphic characteristics that control the selection and height growth of trees and shrubs.

In this table, the Conservation Tree and Shrub Grouping is expressed as a group index number. The group index for Conservation Tree and Shrub groups (CTSG) are a guide for species best suited for different kinds of soil and for prediction height, growth, and effectiveness. The groupings can be used when selection woody plants for windbreaks, wildlife plantings riparian buffers, reforestation, other environmental plantings, recreation, landscaping, wetland restoration or enhancement and critical area plantings. CTSG's are developed to assure satisfactory species selection and adaptation to specific conditions of soil, climate and physiography. CTSG's are a guide for selection species best suited for different kinds of soil and prediction height growth and effectiveness.

All soil series mapped in the state have been placed in 10 groups of similar soil characteristics. Groups 1, 2, 3, 4, 6, and 9 are further divided into subgroups. In addition, all groups provide information by Major Land Resource Areas.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters a tree or shrub may be well or poorly suited because of soil characteristics. Each tree or shrub also has definable potentials of height growth depending on the factors just mentioned. Accurate definitions of potential heights are necessary for proper windbreak planning and design.

Windbreaks protect livestock, buildings, roads and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low-growing and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not grow trees originally. Knowledge of how trees perform on such land can be gained only by observing and recording their performance where trees have been planted and survived. The problem is compounded by the fact that many favorite windbreak species are not indigenous to the areas in which they are planted.

The Kansas Field Office Technical Guide Notice KS-230, Conservation Tree and Shrub Plantings Suitability Groups shows the adapted species listing for each group index number. Showing the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates are based on measurements and observation of established plantings that have been given adequate care. This information should be used to determine the placement of a windbreak, the area protected and the arrangement of species.

A number of attributes are included in the CTSG species tables for each group number found in this section of the Field Office Technical Guide. These attributes were rated subjectively and assigned a relative value to further assist those unfamiliar with individual species characteristics or desirability for the intended use. Definitions and explanations can be found. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery. See part 537 of the National Forestry Manual for additional information.

In the Tree and Shrub Management table interpretive ratings are given for various aspects of forest and conservation tree and shrub management. Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. Well suited indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. Moderately well suited indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable and fair performance can be expected. Some maintenance is needed. Poorly suited indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. Unsited indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

The paragraphs that follow indicate the soil properties considered in rating the soils for forest and conservation tree and shrub management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet. Also, in the Kansas Field Office Technical Guide Notice KS-230, Conservation Tree and Shrub Plantings Suitability Groups.

Ratings in the columns suitability for hand planting and suitability for mechanical planting are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately well suited, poorly suited, or unsited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column suitability for mechanical site preparation (surface) are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsited to this management activity. The part of the soil from the surface to a depth of about 1-foot is considered in the ratings.

Ratings in the column suitability for mechanical site preparation (deep) are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column potential for seedling mortality are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality. See the National Forestry Manual, Subpart B for criteria used in rating management concerns. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

CONSERVATION TREE AND SHRUB MANAGEMENT
Edwards County,
Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
057AN: Roxbury-----	1K	Well suited	Well suited	Well suited	Well suited	Low
057LA: Las Animas, occasionally flooded-----	2K	Well suited	Well suited	Well suited	Well suited	Moderate
057LC: Las Animas-----	2K	Well suited	Well suited	Well suited	Well suited	Soil reaction
Lincoln-----	1K	Moderately suited Sandiness	Moderately suited Sandiness	Well suited	Well suited	Moderate Soil reaction Moderate
097AT: Attica-----	5	Well suited	Well suited	Well suited	Well suited	Soil reaction Low
097AX: Attica-----	5	Well suited	Well suited	Well suited	Well suited	Low
Carwile-----	1	Well suited	Well suited	Well suited	Well suited	High Wetness
097TH: Tivoli-----	7	Moderately suited Sandiness	Poorly suited Slope Sandiness	Poorly suited Slope	Poorly suited Slope	Low
145HC: Harney-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
145HD: Harney-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Uly-----	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
145RO: Roxbury-----	1	Well suited	Well suited	Well suited	Well suited	Low
145UC: Uly-----	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
151KP: Kanza-----	2	Well suited	Well suited	Well suited	Well suited	Low
Plevna-----	2	Well suited	Well suited	Well suited	Unsuited Wetness	High Wetness
185PR: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Carwile-----	1	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High Wetness
Aa: Attica-----	5	Well suited	Well suited	Well suited	Well suited	Low
Ab: Attica-----	5	Well suited	Well suited	Well suited	Well suited	Low
Ac: Attica-----	5	Well suited	Well suited	Well suited	Well suited	Low
Carwile-----	1	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High Wetness
ARR: Arkansas River-----		Not rated	Not rated	Not rated	Not rated	Not rated
Bk: Coly-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate
Tobin-----	1K	Well suited	Well suited	Well suited	Well suited	Soil reaction Low
BOP: Borrow Pits-----		Not rated	Not rated	Not rated	Not rated	Not rated
Cc: Campus-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate
Canlon-----	10	Unsuited	Unsuited	Unsuited	Unsuited	Soil reaction Moderate

CONSERVATION TREE AND SHRUB MANAGEMENT
Edwards County,
Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
		Restrictive layer	Restrictive layer Slope	Restrictive layer	Restrictive layer	Soil reaction
Cd: Canadian-----	1	Well suited	Well suited	Well suited	Well suited	Low
Cf: Darr-----	1	Well suited	Well suited	Well suited	Well suited	Low
Cr: Carwile-----	1	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High Wetness
Cs: Carwile-----	1	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High
Drummond-----	9W	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Wetness Moderate
Fa: Farnum-----	3	Well suited	Well suited	Well suited	Well suited	Salinity Low
Fr: Farnum-----	3	Well suited	Well suited	Well suited	Well suited	Low
Ha: Harney-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Hb: Harney-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Hc: Harney-----	3	Moderately suited Stickiness	Moderately suited Stickiness Slope	Well suited	Well suited	Low
Hd: Harney-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Uly-----	3	Well suited	Well suited	Well suited	Well suited	Low
He: Harney-----	3	Moderately suited Stickiness	Moderately suited Stickiness Slope	Well suited	Well suited	Low
Uly-----	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Hg: Holdrege-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Hh: Holdrege-----	3	Moderately suited Stickiness	Moderately suited Stickiness Slope	Well suited	Well suited	Low
Ho: Hord-----	1	Well suited	Well suited	Well suited	Well suited	Low
La: Las Animas-----	2K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Lh: Lesho-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Lk: Lubbock-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Na: Naron-----	5	Well suited	Well suited	Well suited	Well suited	Low
Nf: Naron-----	5	Well suited	Well suited	Well suited	Well suited	Low
Ng: Naron-----	5	Well suited	Well suited	Well suited	Well suited	Low
Ns: Ness-----	10	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	High Wetness

CONSERVATION TREE AND SHRUB MANAGEMENT
Edwards County,
Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
Pa: Platte-----	1K	Moderately suited Sandiness	Moderately suited Sandiness	Well suited	Well suited	Low
Pe: Plevna-----	2	Well suited	Well suited	Well suited	Unsuited Wetness	High Wetness
Pf: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Pg: Pratt-----	7	Well suited	Well suited	Well suited	Well suited	Low
Pr: Pratt-----	7	Well suited	Well suited	Well suited	Well suited	Low
Lincoln-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
PRR: Pratt-----	7	Well suited	Well suited	Well suited	Well suited	Low
PSS: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Pt: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Tivoli-----	7	Moderately suited Sandiness	Moderately suited Slope Sandiness	Well suited	Well suited	Low
SAP: Sand Pit-----		Not rated	Not rated	Not rated	Not rated	Not rated
Ta: Tabler-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Tb: Tabler-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Drummond-----	9W	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Moderate Salinity
Tf: Tivoli-----	7	Moderately suited Sandiness	Moderately suited Slope Sandiness	Poorly suited Slope	Poorly suited Slope	Low
To: Tobin-----	1	Well suited	Well suited	Well suited	Well suited	Low
W: Water-----		Not rated	Not rated	Not rated	Not rated	Not rated
Wa: Waldeck-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Wc: Waldeck-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Za: Zenda-----	1	Well suited	Well suited	Well suited	Well suited	Low
Ze: Lesho-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction Salinity
Zs: Zenda-----	1	Well suited	Well suited	Well suited	Well suited	Low
Drummond-----	9W	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Moderate Salinity

ENGINEERING INDEX PROPERTIES
Edwards County, Kansas

Engineering Index Properties table gives the engineering classifications and the range of index properties for the layers of each soil in the survey area. Depth to the upper and lower boundaries of each layer is indicated. Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. Loam, for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, gravelly. Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1998) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1998). The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection. If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in Engineering Index Properties table.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

ENGINEERING INDEX PROPERTIES--Continued
Edwards County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
057AN: Roxbury-----	0-20	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-35	10-15
	20-52	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
	52-60	Silt loam	CL		0	0	100	100	85-100	65-95	30-45	10-20
057LA: Las Animas, occasionally flooded-----	0-11	Sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	95-100	70-90	40-60	20-25	NP-5
	11-32	Sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-90	25-55	20-25	NP-5
	32-60	Stratified gravelly sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	75-100	5-25	---	NP
057LC: Las Animas-----	0-11	Sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	95-100	70-90	40-60	20-25	NP-5
	11-32	Stratified loamy fine sand to very fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-90	25-55	20-25	NP-5
	32-60	Stratified coarse sand to sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	75-100	5-25	---	NP
Lincoln-----	0-6	Sand	SM, SP-SM	A-2, A-3	0	0	100	98-100	82-98	5-20	---	NP
	6-60	Stratified fine sand to clay loam	SM, SP-SM	A-2, A-3	0	0	100	98-100	82-100	5-35	---	NP
097AT: Attica-----	0-10	Loamy fine sand	SM, SP-SM	A-2	0	0	100	95-100	70-100	10-35	---	NP
	10-30	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	30-55	15-26	NP-7
	30-60	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	85-100	80-100	70-100	20-50	15-26	NP-7
097AX: Attica-----	0-10	Loamy fine sand	SM, SP-SM	A-2	0	0	100	95-100	70-100	10-35	---	NP
	10-30	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	30-55	15-26	NP-7
	30-60	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	85-100	80-100	70-100	20-50	15-26	NP-7
Carwile-----	0-15	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	98-100	90-100	36-60	15-26	NP-7
	15-36	Clay	CH, CL, SC	A-6, A-7	0	0	100	100	90-100	40-95	35-70	14-38
	36-60	Clay	CH, CL, SC	A-4, A-6, A-7	0	0	100	100	90-100	36-95	25-70	7-38
097TH: Tivoli-----	0-6	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-25	---	NP
	6-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-25	---	NP
145HC: Harney-----	0-7	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	15-22
	7-40	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	40-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
145HD: Harney-----	0-7	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	15-22
	7-40	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	40-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
Uly-----	0-10	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	20-40	2-20
	10-18	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	18-60	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
145RO: Roxbury-----	0-14	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-35	10-15
	14-34	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
	34-60	Silt loam	CL		0	0	100	100	85-100	65-95	30-45	10-20
145UC: Uly-----	0-10	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	20-40	2-20
	10-18	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	18-60	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
151KP: Kanza-----	0-11	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	90-100	5-35	---	NP
	11-40	Fine sand	SM, SP-SM	A-2, A-3	0	0	90-100	90-100	80-100	5-35	---	NP
Plevna-----	0-10	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	20-50	15-26	NP-6
	10-40	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	30-50	15-26	NP-6
	40-60	Fine sand	SM, SP	A-2, A-3	0	0	100	90-100	50-90	4-35	---	NP
185PR: Pratt-----	0-8	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	8-28	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	28-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP
Carwile-----	0-7	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	98-100	90-100	36-60	15-26	NP-7
	7-14	Sandy clay loam	CL, SC	A-6, A-7	0	0	100	100	90-100	36-90	35-50	14-26
	14-38	Sandy clay	CH, CL, SC	A-6, A-7	0	0	100	100	90-100	40-95	35-70	14-38
	38-60	Sandy clay loam	CH, CL, SC	A-4, A-6, A-7	0	0	100	100	90-100	36-95	25-70	7-38
Aa: Attica-----	0-11	Fine sandy loam	SM	A-2, A-4	0	0	100	95-100	70-100	20-50	15-20	NP-4
	11-30	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	30-55	15-26	NP-7
	30-60	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	85-100	80-100	70-100	20-50	15-26	NP-7
Ab: Attica-----	0-11	Fine sandy loam	SM	A-2, A-4	0	0	100	95-100	70-100	20-50	15-20	NP-4
	11-30	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	30-55	15-26	NP-7
	30-60	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	85-100	80-100	70-100	20-50	15-26	NP-7

ENGINEERING INDEX PROPERTIES--Continued
Edwards County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Ac:												
Attica-----	0-11	Fine sandy loam	SM	A-2, A-4	0	0	100	95-100	70-100	20-50	15-20	NP-4
	11-30	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	30-55	15-26	NP-7
	30-60	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	85-100	80-100	70-100	20-50	15-26	NP-7
Carwile-----	0-11	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-2, A-4	0	0	100	98-100	90-100	36-60	15-26	NP-7
	11-17	Sandy clay loam	CL, SC	A-6, A-7	0	0	100	100	90-100	36-90	35-50	14-26
	17-42	Clay	CH, CL, SC	A-6, A-7	0	0	100	100	90-100	40-95	35-70	14-38
	42-60	Clay loam	CH, CL, SC	A-4, A-6, A-7	0	0	100	100	90-100	36-95	25-70	7-38
ARR:												
Arkansas River-	0-6	Sand	SP, SP-SM, SW, SW-SM	A-1, A-3	---	0-5	80-100	75-100	30-60	0-10	---	NP
	6-60	Stratified coarse sand to sandy loam	SM, SP, SP-SM	A-1, A-2, A-3	---	0-5	80-100	75-100	40-70	0-20	---	NP
Bk:												
Coly-----	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	85-100	85-100	20-45	2-20
	6-60	Silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	85-100	85-100	20-40	2-15
Tobin-----	0-15	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-35	10-15
	15-60	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-45	10-20
BOP:												
Borrow Pits----	---	---	---	---	---	---	---	---	---	---	---	---
Cc:												
Campus-----	0-8	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	80-100	55-90	20-40	3-20
	8-17	Clay loam	CL, ML	A-4, A-6, A-7	0	0	100	100	75-95	50-80	33-45	8-20
	17-24	Clay loam	CL, ML, SC, SM	A-4, A-6, A-7	0	0	90-100	70-100	65-85	40-80	33-45	8-20
	>24	Unweathered bedrock			---	---	---	---	---	---	---	---
Canlon-----	0-4	Loam	CL, CL-ML	A-4, A-6	0	0	90-100	75-100	65-100	50-90	20-40	4-20
	4-11	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	75-100	55-100	50-95	35-85	20-40	4-20
	>11	Unweathered bedrock			---	---	---	---	---	---	---	---
Cd:												
Canadian-----	0-19	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	98-100	94-100	36-65	15-26	NP-7
	19-40	Fine sandy loam	CL, ML, SC, SM	A-4	0	0	100	98-100	94-100	36-85	15-31	NP-10
	40-60	Fine sandy loam	CL, ML, SC, SM	A-2, A-4	0	0	100	98-100	90-100	15-85	15-31	NP-10
Cf:												
Darr-----	0-19	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	98-100	94-100	36-65	15-26	NP-7
	19-32	Fine sandy loam	CL, ML, SC, SM	A-4	0	0	100	98-100	94-100	36-85	15-31	NP-10
	32-60	Fine sandy loam	CL, ML, SC, SM	A-2, A-4	0	0	100	98-100	90-100	15-85	15-31	NP-10
Cr:												
Carwile-----	0-11	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	98-100	90-100	36-60	15-26	NP-7
	11-17	Sandy clay loam	CL, SC	A-6, A-7	0	0	100	100	90-100	36-90	35-50	14-26
	17-42	Clay	CH, CL, SC	A-6, A-7	0	0	100	100	90-100	40-95	35-70	14-38
	42-60	Clay loam	CH, CL, SC	A-4, A-6, A-7	0	0	100	100	90-100	36-95	25-70	7-38
Cs:												
Carwile-----	0-11	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	98-100	90-100	36-60	15-26	NP-7
	11-17	Sandy clay loam	CL, SC	A-6, A-7	0	0	100	100	90-100	36-90	35-50	14-26
	17-42	Clay	CH, CL, SC	A-6, A-7	0	0	100	100	90-100	40-95	35-70	14-38
	42-60	Clay loam	CL, SC, CH	A-4, A-6, A-7	0	0	100	100	90-100	36-95	25-70	7-38
Drummond-----	0-8	Clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-97	22-39	3-15
	8-60	Clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-98	35-60	15-35
Fa:												
Farnum-----	0-14	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-35	5-15
	14-26	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-40	10-15
	26-42	Clay loam	CL, SC	A-6, A-7-6	0	0	100	100	70-100	45-80	35-50	15-30
	42-60	Fine sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	100	95-100	65-100	30-80	20-35	5-15
Fr:												
Farnum-----	0-8	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-35	5-15
	8-16	Loam	CL	A-6	0	0	100	100	85-100	60-80	30-40	10-15
	16-37	Clay loam	CL, SC	A-6, A-7-6	0	0	100	100	70-100	45-80	35-50	15-30
	37-60	Loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	100	95-100	65-100	30-80	20-35	5-15
Ha:												
Harney-----	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	10-34	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	34-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
Hb:												
Harney-----	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	10-34	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	34-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
Hc:												
Harney-----	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	10-34	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	34-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20

ENGINEERING INDEX PROPERTIES--Continued
Edwards County, Kansas

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Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
Hd:	In											
Harney-----	0-6	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	15-22
	6-34	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	34-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
Uly-----	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	20-40	2-20
	8-30	Silty clay loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	30-60	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
He:												
Harney-----	0-6	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	15-22
	6-34	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	34-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
Uly-----	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	20-40	2-20
	8-30	Silty clay loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	30-60	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
Hg:												
Holdrege-----	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	95-100	85-100	20-45	2-20
	11-33	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	98-100	90-100	30-55	15-35
	33-48	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	25-40	9-17
	48-66	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	5-15
Hh:												
Holdrege-----	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	95-100	85-100	20-45	2-20
	10-20	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	98-100	90-100	30-55	15-35
	20-26	Silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	25-40	9-17
	26-60	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	5-15
Ho:												
Hord-----	0-12	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	3-18
	12-42	Silty clay loam	CL	A-4, A-6	0	0	100	100	98-100	85-100	25-40	8-23
	42-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	85-100	25-40	6-21
La:												
Las Animas-----	0-15	Loamy fine sand	SM	A-2, A-4	0	0	95-100	90-100	60-75	20-40	---	NP
	15-45	Stratified very fine sandy loam to loamy fine sand	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-90	25-55	20-25	NP-5
	45-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	75-100	5-25	---	NP
Lh:												
Lesho-----	0-18	Clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	65-85	35-45	15-22
	18-32	Clay loam	CL	A-7-6, A-4, A-6	0	0	100	100	85-100	65-95	25-45	7-22
	32-60	Sand	SM, SP-SM	A-1, A-2, A-3, A-4	0	0	100	95-100	30-85	5-45	---	NP
Lk:												
Lubbock-----	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	65-100	25-40	5-20
	10-44	Clay	CH, CL	A-7	0	0	100	100	95-100	85-100	40-60	20-35
	44-60	Silty clay loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	7-17
Na:												
Naron-----	0-12	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	12-60	Sandy clay loam	CL, SC	A-4, A-6	0	0	100	95-100	80-100	36-60	26-40	8-18
Nf:												
Naron-----	0-12	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	25-60	15-26	1-7
	12-60	Sandy clay loam	CL, SC	A-4, A-6	0	0	100	95-100	80-100	36-60	26-40	8-18
Ng:												
Naron-----	0-12	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	25-60	15-26	1-7
	12-60	Sandy clay loam	CL, SC	A-4, A-6	0	0	100	95-100	80-100	36-60	26-40	8-18
Ns:												
Ness-----	0-31	Clay	CH	A-7-6	0	0	100	100	95-100	90-100	50-70	30-45
	31-60	Silt loam	CH, CL, MH, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	90-100	30-55	8-30
Pa:												
Platte-----	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	60-95	22-35	4-15
	9-60	Coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	70-95	50-95	25-65	5-15	15-20	NP
Pe:												
Plevna-----	0-10	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	20-50	15-26	NP-6
	10-39	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	30-50	15-26	NP-6
	39-60	Fine sandy loam	SM, SP	A-2, A-3	0	0	100	90-100	50-90	4-35	---	NP
Pf:												
Pratt-----	0-13	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	13-30	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	30-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP
Pg:												
Pratt-----	0-13	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	13-30	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	30-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP
Pr:												
Pratt-----	0-13	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	13-30	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	30-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP
Lincoln-----	0-5	Loamy fine sand	SM	A-2	0	0	100	98-100	90-100	15-35	---	NP
	5-60	Stratified fine sand to clay loam	SM, SP-SM	A-2, A-3	0	0	100	98-100	82-100	5-35	---	NP
PRR:												
Pratt-----	0-12	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	12-36	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	36-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP

ENGINEERING INDEX PROPERTIES--Continued
Edwards County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
PSS:												
Pratt-----	0-8	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	8-28	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	28-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP
Pt:												
Pratt-----	0-8	Loamy fine sand	SM	A-2	0	0	100	95-100	70-100	15-35	---	NP
	8-28	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	95-100	90-100	15-40	15-20	NP-6
	28-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	---	NP
Tivoli-----	0-6	Loamy fine sand	SM	A-2	0	0	100	95-100	90-100	15-35	---	NP
	6-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-25	---	NP
SAP:												
Sand Pit-----	---	---	---	---	---	---	---	---	---	---	---	---
Ta:												
Tabler-----	0-8	Clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	32-43	11-20
	8-40	Clay	CH, CL	A-7	0	0	100	100	96-100	90-99	41-65	18-35
	40-60	Clay loam	CH, CL	A-6, A-7	0	0	96-100	96-100	92-100	80-99	38-60	15-35
Tb:												
Tabler-----	0-8	Clay loam	CL	A-6, A-7	0	0	100	100	96-100	80-98	32-43	11-20
	8-40	Clay	CH, CL	A-7	0	0	100	100	96-100	90-99	41-65	18-35
	40-60	Clay loam	CH, CL	A-6, A-7	0	0	96-100	96-100	92-100	80-99	38-60	15-35
Drummond-----	0-8	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-97	22-39	3-15
	8-30	Clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-98	35-60	15-35
	>30	Clay			---	---	---	---	---	---	---	---
Tf:												
Tivoli-----	0-8	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-25	---	NP
	8-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-25	---	NP
To:												
Tobin-----	0-15	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-35	10-15
	15-40	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-45	10-20
	40-60	Silt loam	CL	A-6, A-7	0	0	100	100	85-100	70-95	30-45	10-20
W:												
Water-----	---	---	---	---	---	---	---	---	---	---	---	---
Wa:												
Waldeck-----	0-10	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	75-100	25-55	15-25	NP-5
	10-28	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	30-50	15-25	NP-5
	28-60	Sand	SP-SM, SM, SP	A-3, A-1, A-2	0	0	90-100	80-100	40-60	1-35	---	NP
Wc:												
Waldeck-----	0-10	Loam	ML	A-4	0	0	100	95-100	75-100	50-60	15-30	NP-7
	10-28	Sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	70-100	30-50	15-25	NP-5
	28-60	Sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	90-100	80-100	40-60	1-35	---	NP
Za:												
Zenda-----	0-15	Clay loam	CL	A-6	0	0	100	95-100	85-100	55-80	30-40	10-20
	15-60	Clay loam	CL	A-6	0	0	100	95-100	85-100	55-80	25-40	10-25
Ze:												
Lesho-----	0-15	Clay loam	CL	A-6, A-7-6	0	0	100	100	90-100	75-95	35-45	15-22
	15-55	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	65-95	30-45	11-22
	55-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	55-75	5-35	---	NP
Zs:												
Zenda-----	0-15	Clay loam	CL	A-6	0	0	100	95-100	85-100	55-80	30-40	10-20
	15-60	Clay loam	CL	A-6	0	0	100	95-100	85-100	55-80	25-40	10-25
Drummond-----	0-8	Clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	96-100	65-97	22-39	3-15
	8-60	Clay	CH, CL	A-6, A-7	0	0	100	100	96-100	80-98	35-60	15-35

Physical Properties table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth moving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability ($K \rightarrow \text{sat}$) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity ($K \rightarrow \text{sat}$). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In Physical Properties table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the Physical Properties table as the K factor (K_w and K_f) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor K_w indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor K_f indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to

wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.
- 4L. Calcareous loams, silt loams, clay loams, and silty clay loams.
4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to wind erosion because of coarse fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Explanation of Wind Erodibility Groups

Soil erodibility by wind is directly related to the percentage of dry non-erodible surface soil aggregates larger than 0.84 mm in diameter. From this percentage, the wind erodibility index (I-factor) is determined. The I-factor is an expression of the stability of these soil aggregates against breakdown by tillage and abrasion from wind erosion. Soils are placed in Wind Erodibility Groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 mm as shown in the following table.

WEG	Properties of Soil Surface Layer	Dry Soil Aggregates >0.84mm Percent	Wind Erodibility Index T/Ac/Yr (I)
1	Very fine sand, fine sand, sand, or coarse sand	1 2 3 5 7	310 1/ 250 220 180 160
2	Loamy very fine sand, loamy fine sand, loamy sand, loamy coarse sand, organic soil materials.	10	134
3	Very fine sandy loam, fine sandy loam, sandy loam, or coarse sandy loam.	25	86
4	Clay, silty clay, non-calcareous clay loam, or silty clay loam with >35 percent clay content.	25	86
4L	Calcareous 2/ loam, silt loam, clay loam, or silty clay loam.	25	86
5	Non-calcareous loam and silt loam with <20 percent clay content, or sandy clay loam, sandy clay, and hemic 3/ organic soil materials.	40	56
6	Non-calcareous loam and silt loam with >20 percent clay content, or non-calcareous clay loam with <35 percent clay content.	45	48
7	Silt, non-calcareous silty clay loam with >35 percent clay content and fibric 3/ organic soil material.	50	38
8	Soils not suitable for cultivation due to coarse fragments or wetness; wind erosion is not a problem.	--	0

1/ The "I" values for WEG 1 vary from 160 for coarse sands to 310 for very fine sands. Use an "I" of 220 as an average figure. For coarser sand that has gravel, use a lower figure. For a soil that has no gravel and very fine sand, use a higher figure. (Modification for coarse fragments is preparation.)

2/ Calcareous is a strongly or violently effervescent reaction to cold dilute (1N) HCL.

3/ See Soil Taxonomy for definition.

PHYSICAL PROPERTIES OF THE SOILS--Continued
Edwards County, Kansas: Published

(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
057AN: Roxbury-----	0-20	10	68	18-27	1.35-1.45	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	4L	86
	20-52	9	64	18-35	1.35-1.45	0.60-2.00	0.21-0.23	3.0-5.9	1.0-2.0	.43	.43			
	52-60	9	64	18-35	1.35-1.45	0.60-2.00	0.17-0.22	3.0-5.9	0.0-1.0	.43	.43			
057LA: Las Animas, occasionally flooded-----	0-11	67	20	8-18	1.45-1.55	2.00-6.00	0.13-0.15	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	11-32	67	20	8-18	1.50-1.60	2.00-6.00	0.10-0.22	0.0-2.9	0.0-1.0	.28	.28			
	32-60	96	2	0-5	1.50-1.60	6.00-20.00	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
057LC: Las Animas----	0-11	67	20	8-18	1.45-1.55	2.00-6.00	0.13-0.15	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	11-32	63	24	8-18	1.50-1.60	2.00-6.00	0.09-0.19	0.0-2.9	0.0-1.0	.28	.28			
	32-60	96	2	0-5	1.50-1.60	6.00-20.00	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Lincoln-----	0-6	96	2	0-5	1.40-1.50	6.00-20.00	0.05-0.09	0.0-2.9	0.5-1.0	.15	.15	5	1	220
	6-60	90	0	5-15	1.40-1.50	6.00-20.00	0.05-0.19	0.0-2.9	0.0-0.5	.15	.15			
097AT: Attica-----	0-10	87	7	2-10	1.50-1.60	2.00-6.00	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	10-30	67	20	8-18	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	0.2-0.8	.24	.24			
	30-60	63	26	4-18	1.50-1.60	2.00-6.00	0.08-0.16	0.0-2.9	0.1-0.5	.24	.28			
097AX: Attica-----	0-10	87	7	2-10	1.50-1.60	2.00-6.00	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	10-30	67	20	8-18	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	0.2-0.8	.24	.24			
	30-60	63	26	4-18	1.50-1.60	2.00-6.00	0.08-0.16	0.0-2.9	0.1-0.5	.24	.28			
Carwile-----	0-15	62	26	5-18	1.30-1.65	0.60-2.00	0.11-0.20	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	15-36	23	29	35-60	1.35-1.75	0.06-0.20	0.12-0.20	6.0-8.9	0.5-1.0	.37	.37			
	36-60	36	32	20-45	1.35-1.75	0.20-2.00	0.12-0.20	6.0-8.9	0.1-0.3	.32	.37			
097TH: Tivoli-----	0-6	93	1	1-10	1.35-1.50	5.95-19.98	0.02-0.08	0.0-2.9	0.0-1.0	.17	.17	5	1	250
	6-60	93	1	1-10	1.50-1.70	5.95-19.98	0.02-0.08	0.0-2.9	0.0-0.3	.17	.17			
145HC: Harney-----	0-7	20	48	28-35	1.30-1.40	0.60-2.00	0.21-0.23	3.0-5.9	1.0-4.0	.32	.32	5	7	38
	7-40	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	0.5-1.5	.43	.43			
	40-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
145HD: Harney-----	0-7	20	48	28-35	1.30-1.40	0.60-2.00	0.21-0.23	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	7-40	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	0.5-1.5	.43	.43			
	40-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
Uly-----	0-10	11	67	17-27	1.20-1.30	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	10-18	9	66	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	0.7-1.5	.43	.43			
	18-60	10	68	18-27	1.10-1.20	0.60-2.00	0.18-0.22	0.0-2.9	0.2-0.5	.43	.43			
145RO: Roxbury-----	0-14	10	68	18-27	1.30-1.45	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	4L	86
	14-34	9	64	18-35	1.35-1.50	0.60-2.00	0.17-0.22	3.0-5.9	1.0-3.0	.43	.43			
	34-60	9	64	18-35	1.35-1.50	0.60-2.00	0.17-0.22	3.0-5.9	0.5-0.5	.43	.43			
145UC: Uly-----	0-10	11	67	17-27	1.20-1.30	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	10-18	9	66	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	0.7-1.5	.43	.43			
	18-60	10	68	18-27	1.10-1.20	0.60-2.00	0.18-0.22	0.0-2.9	0.2-0.7	.43	.43			
151KP: Kanza-----	0-11	86	7	3-12	1.50-1.70	5.95-19.98	0.08-0.13	0.0-2.9	1.0-3.0	.17	.17	5	2	134
	11-40	92	1	1-12	1.50-1.70	5.95-19.98	0.06-0.11	0.0-2.9	---	.17	.20			
Plevna-----	0-10	67	20	8-18	1.40-1.50	2.00-6.00	0.14-0.16	0.0-2.9	1.0-4.0	.20	.20	5	3	86
	10-40	67	20	8-18	1.40-1.50	2.00-6.00	0.12-0.16	0.0-2.9	---	.20	.20			
	40-60	95	1	1-7	1.50-1.60	2.00-6.00	0.05-0.07	0.0-2.9	---	.20	.20			
185PR: Pratt-----	0-8	79	16	2-8	1.40-1.55	5.95-19.98	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	8-28	86	7	4-11	1.45-1.55	5.95-19.98	0.09-0.12	0.0-2.9	---	.17	.17			
	28-60	79	16	1-8	1.45-1.60	5.95-19.98	0.08-0.12	0.0-2.9	---	.17	.17			
Carwile-----	0-7	62	26	5-18	1.30-1.65	0.60-2.00	0.11-0.20	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	7-14	54	14	25-39	1.45-1.75	0.20-2.00	0.12-0.20	3.0-5.9	---	.37	.37			
	14-38	50	3	35-60	1.35-1.75	0.06-0.20	0.12-0.20	6.0-8.9	---	.37	.37			
	38-60	54	14	20-45	1.35-1.75	0.20-2.00	0.12-0.20	6.0-8.9	---	.32	.32			
Aa: Attica-----	0-11	64	27	6-12	1.45-1.55	2.00-6.00	0.16-0.18	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	11-30	67	20	8-18	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	0.3-0.6	.24	.24			
	30-60	88	1	4-18	1.50-1.60	2.00-6.00	0.08-0.16	0.0-2.9	0.1-0.3	.24	.28			
Ab: Attica-----	0-11	64	27	6-12	1.45-1.55	2.00-6.00	0.16-0.18	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	11-30	67	20	8-18	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	0.3-0.6	.24	.24			
	30-60	88	1	4-18	1.50-1.60	2.00-6.00	0.08-0.16	0.0-2.9	0.1-0.3	.24	.28			
Ac: Attica-----	0-11	64	27	6-12	1.45-1.55	2.00-6.00	0.16-0.18	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	11-30	67	20	8-18	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	0.3-0.6	.24	.24			
	30-60	88	1	4-18	1.50-1.60	2.00-6.00	0.08-0.16	0.0-2.9	0.1-0.3	.24	.28			
Carwile-----	0-11	62	26	5-18	1.30-1.65	0.60-2.00	0.11-0.20	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	11-17	54	14	25-39	1.45-1.75	0.20-2.00	0.12-0.20	3.0-5.9	---	.37	.37			
	17-42	23	29	35-60	1.35-1.75	0.06-0.20	0.12-0.20	6.0-8.9	---	.37	.37			
	42-60	35	33	20-45	1.35-1.75	0.20-2.00	0.12-0.20	6.0-8.9	---	.32	.32			
ARR: Arkansas River-----	0-6	98	2	0-1	---	6.00-20.00	0.03-0.04	0.0-2.9	0.0-0.1	---	---	-	---	0
	6-60			0-5	---	6.00-20.00	0.04-0.06	0.0-2.9	---	---	---			

PHYSICAL PROPERTIES OF THE SOILS--Continued
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Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
Bk:														
Coly-----	0-6	11	68	18-24	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	6-60	8	71	18-24	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
Tobin-----	0-15	10	68	18-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	1.0-4.0	.32	.32	5	6	48
	15-60	7	66	18-35	1.35-1.50	0.60-2.00	0.17-0.20	3.0-5.9	1.0-4.0	.32	.32			
BOP:														
Borrow Pits--	---			---	---	---	---	---	---	---	---	---	---	---
Cc:														
Campus-----	0-8	42	37	15-27	1.25-1.35	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.32	2	4L	86
	8-17	35	38	18-35	1.30-1.40	0.60-2.00	0.17-0.19	0.0-2.9	0.5-1.0	.28	.32			
	17-24	35	38	18-35	1.40-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.2-0.5	.28	.32			
	>24			---	---	---	---	---	---	---	---			
Canlon-----	0-4	42	38	12-27	1.30-1.45	0.60-2.00	0.15-0.24	0.0-2.9	0.5-2.0	.32	.32	1	4L	86
	4-11	43	40	8-27	1.35-1.50	0.60-2.00	0.15-0.22	0.0-2.9	0.2-0.5	.32	.43			
	>11			---	---	---	---	---	---	---	---			
Cd:														
Canadian-----	0-19	62	26	5-18	1.30-1.60	2.00-6.00	0.10-0.15	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	19-40	66	20	10-18	1.40-1.70	2.00-6.00	0.10-0.20	0.0-2.9	0.5-0.8	.20	.20			
	40-60	62	26	5-18	1.40-1.70	2.00-20.00	0.07-0.20	0.0-2.9	0.2-0.5	.20	.20			
Cf:														
Darr-----	0-19	62	26	5-18	1.30-1.60	2.00-6.00	0.10-0.15	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	19-32	66	20	10-18	1.40-1.70	2.00-6.00	0.10-0.20	0.0-2.9	0.5-1.0	.20	.20			
	32-60	62	26	5-18	1.40-1.70	2.00-20.00	0.07-0.20	0.0-2.9	0.2-0.5	.20	.20			
Cr:														
Carwile-----	0-11	62	26	5-18	1.30-1.65	0.60-2.00	0.11-0.20	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	11-17	54	14	25-39	1.45-1.75	0.20-2.00	0.12-0.20	3.0-5.9	0.5-1.0	.37	.37			
	17-42	23	29	35-60	1.35-1.75	0.06-0.20	0.12-0.20	6.0-8.9	0.5-1.0	.37	.37			
	42-60	35	33	20-45	1.35-1.75	0.20-2.00	0.12-0.20	6.0-8.9	0.1-0.3	.32	.32			
Cs:														
Carwile-----	0-11	62	26	5-18	1.30-1.65	0.60-2.00	0.11-0.20	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	11-17	54	14	25-39	1.45-1.75	0.20-2.00	0.12-0.20	3.0-5.9	0.5-1.0	.37	.37			
	17-42	23	29	35-60	1.35-1.75	0.06-0.20	0.12-0.20	6.0-8.9	0.5-1.0	.37	.37			
	42-60	35	33	20-45	1.35-1.75	0.20-2.00	0.12-0.20	6.0-8.9	0.1-0.3	.32	.32			
Drummond-----	0-8	36	39	20-30	1.35-1.55	0.60-2.00	0.11-0.18	0.0-2.9	0.5-1.0	.49	.49	2	4L	86
	8-60	23	29	35-60	1.40-1.65	0.00-0.06	0.09-0.17	6.0-8.9	0.3-0.8	.55	.55			
Fa:														
Farnum-----	0-14	42	38	14-27	1.35-1.45	0.60-2.00	0.19-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	14-26	39	37	20-27	1.40-1.50	0.60-2.00	0.17-0.19	0.0-2.9	---	.28	.28			
	26-42	34	36	25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.28	.28			
	42-60	61	19	12-29	1.40-1.55	0.60-2.00	0.13-0.16	0.0-2.9	---	.28	.28			
Fr:														
Farnum-----	0-8	42	38	14-27	1.35-1.45	0.60-2.00	0.19-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	8-16	39	37	20-27	1.40-1.50	0.60-2.00	0.17-0.19	0.0-2.9	0.8-1.5	.28	.28			
	16-37	34	36	25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.4-0.7	.28	.28			
	37-60	42	38	12-29	1.40-1.55	0.60-2.00	0.13-0.16	0.0-2.9	0.2-0.5	.28	.28			
Ha:														
Harney-----	0-10	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	10-34	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	0.5-1.5	.43	.43			
	34-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
Hb:														
Harney-----	0-10	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	10-34	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	0.5-1.5	.43	.43			
	34-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
Hc:														
Harney-----	0-10	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	10-34	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	0.5-1.5	.43	.43			
	34-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
Hd:														
Harney-----	0-6	20	48	28-35	1.30-1.40	0.60-2.00	0.21-0.23	3.0-5.9	1.0-3.0	.32	.32	5	7	38
	6-34	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	0.5-1.5	.43	.43			
	34-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
Uly-----	0-8	11	67	17-27	1.20-1.30	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	8-30	7	68	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	0.7-1.5	.43	.43			
	30-60	10	68	18-27	1.10-1.20	0.60-2.00	0.18-0.22	0.0-2.9	0.2-0.7	.43	.43			
He:														
Harney-----	0-6	20	48	28-35	1.30-1.40	0.60-2.00	0.21-0.23	3.0-5.9	1.0-3.0	.32	.32	5	7	38
	6-34	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	0.5-1.5	.43	.43			
	34-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
Uly-----	0-8	11	67	17-27	1.20-1.30	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	8-30	7	68	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	0.7-1.5	.43	.43			
	30-60	10	68	18-27	1.10-1.20	0.60-2.00	0.18-0.22	0.0-2.9	0.2-0.7	.43	.43			
Hg:														
Holdrege-----	0-11	11	69	15-25	1.40-1.50	0.60-2.00	0.22-0.24	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	11-33	7	62	28-35	1.25-1.35	0.60-2.00	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43			
	33-48	9	67	18-30	1.35-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.43			
	48-66	14	69	15-20	1.40-1.50	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
Hh:														
Holdrege-----	0-10	11	69	15-25	1.40-1.60	0.60-2.00	0.22-0.24	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	10-20	7	62	28-35	1.20-1.40	0.60-2.00	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43			
	20-26	8	68	18-30	1.30-1.50	0.60-2.00	0.17-0.20	3.0-5.9	0.5-1.0	.43	.43			
	26-60	14	69	15-20	1.40-1.60	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			

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Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
Ho:														
Hord-----	0-12	11	67	17-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	12-42	7	65	20-35	1.35-1.45	0.60-2.00	0.17-0.22	0.0-2.9	1.0-2.0	.32	.32			
	42-60	9	67	18-30	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.4-1.0	.43	.43			
La:														
Las Animas---	0-15	86	7	4-10	1.45-1.60	6.00-20.00	0.07-0.09	0.0-2.9	0.5-2.0	.17	.17	5	2	134
	15-45			8-18	1.50-1.70	2.00-6.00	0.12-0.18	0.0-2.9	0.0-1.0	.28	.28			
	45-60	97	1	0-5	1.50-1.60	6.00-20.00	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
Lh:														
Lesho-----	0-18	35	33	28-35	1.30-1.40	0.20-0.60	0.17-0.19	3.0-5.9	1.0-3.0	.28	.28	4	4L	86
	18-32	35	38	18-35	1.35-1.45	0.20-0.60	0.16-0.19	3.0-5.9	0.5-1.0	.28	.28			
	32-60	94	1	1-8	1.45-1.55	2.00-20.00	0.02-0.10	0.0-2.9	0.0-0.5	.15	.15			
Lk:														
Lubbock-----	0-10	24	52	20-27	1.45-1.60	0.60-2.00	0.17-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	10-44	30	30	35-45	1.35-1.45	0.20-0.60	0.11-0.19	6.0-8.9	0.5-1.0	.32	.32			
	44-60	20	53	20-35	1.35-1.50	0.60-2.00	0.15-0.20	0.0-2.9	0.0-0.7	.32	.32			
Na:														
Naron-----	0-12	86	7	4-10	1.50-1.60	2.00-6.00	0.10-0.13	0.0-2.9	1.0-2.0	.17	.17	5	2	134
	12-60	60	18	18-27	1.45-1.55	0.60-2.00	0.15-0.18	0.0-2.9	0.1-0.7	.32	.32			
Nf:														
Naron-----	0-12	63	26	8-14	1.40-1.50	2.00-6.00	0.14-0.18	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	12-60	60	18	18-27	1.45-1.55	0.60-2.00	0.15-0.18	0.0-2.9	0.1-0.7	.32	.32			
Ng:														
Naron-----	0-12	63	26	8-14	1.40-1.50	2.00-6.00	0.14-0.18	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	12-60	60	18	18-27	1.45-1.55	0.60-2.00	0.15-0.18	0.0-2.9	0.1-0.7	.32	.32			
Ns:														
Ness-----	0-31	22	28	40-60	1.35-1.45	0.00-0.06	0.09-0.13	6.0-8.9	1.0-3.0	.28	.28	5	4	86
	31-60	20	50	20-40	1.35-1.45	0.06-2.00	0.18-0.22	3.0-5.9	0.1-1.0	.43	.43			
Pa:														
Platte-----	0-9	44	41	10-20	1.50-1.70	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	9-60	92	7	0-3	1.90-2.00	20.00-99.90	0.02-0.04	0.0-2.9	0.0-0.3	.10	.15			
Pe:														
Plevna-----	0-10	67	20	8-18	1.40-1.50	2.00-6.00	0.14-0.16	0.0-2.9	1.0-4.0	.20	.20	5	3	86
	10-39	67	20	8-18	1.40-1.50	2.00-6.00	0.12-0.16	0.0-2.9	0.5-1.5	.20	.20			
	39-60	61	35	1-7	1.50-1.60	2.00-6.00	0.05-0.07	0.0-2.9	0.2-0.5	.20	.20			
Pf:														
Pratt-----	0-13	79	16	2-8	1.40-1.55	6.00-20.00	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	13-30	86	7	4-11	1.45-1.55	6.00-20.00	0.09-0.12	0.0-2.9	0.1-0.5	.17	.17			
	30-60	79	16	1-8	1.45-1.60	6.00-20.00	0.08-0.12	0.0-2.9	0.0-0.3	.17	.17			
Pg:														
Pratt-----	0-13	79	16	2-8	1.40-1.55	5.95-19.98	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	13-30	86	7	4-11	1.45-1.55	5.95-19.98	0.09-0.12	0.0-2.9	---	.17	.17			
	30-60	79	16	1-8	1.45-1.60	5.95-19.98	0.08-0.12	0.0-2.9	---	.17	.17			
Pr:														
Pratt-----	0-13	79	16	2-8	1.40-1.55	6.00-19.99	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	13-30	86	7	4-11	1.45-1.55	6.00-20.00	0.09-0.12	0.0-2.9	0.1-0.5	.17	.17			
	30-60	79	16	1-8	1.45-1.60	6.00-20.00	0.08-0.12	0.0-2.9	0.0-0.3	.17	.17			
Lincoln-----	0-5	84	6	5-15	1.35-1.50	5.95-19.98	0.06-0.11	0.0-2.9	0.5-0.5	.17	.17	5	2	134
	5-60			5-15	1.30-1.60	5.95-19.98	0.02-0.08	0.0-2.9	0.0-0.5	.17	.17			
PRR:														
Pratt-----	0-12	79	16	2-8	1.40-1.55	5.95-19.98	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	12-36	86	7	4-11	1.45-1.55	5.95-19.98	0.09-0.12	0.0-2.9	---	.17	.17			
	36-60	79	16	1-8	1.45-1.60	5.95-19.98	0.08-0.12	0.0-2.9	---	.17	.17			
PSS:														
Pratt-----	0-8	79	16	2-8	1.40-1.55	5.95-19.98	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	8-28	86	7	4-11	1.45-1.55	5.95-19.98	0.09-0.12	0.0-2.9	---	.17	.17			
	28-60	79	16	1-8	1.45-1.60	5.95-19.98	0.08-0.12	0.0-2.9	---	.17	.17			
Pt:														
Pratt-----	0-8	79	16	2-8	1.40-1.55	5.95-19.98	0.10-0.13	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	8-28	86	7	4-11	1.45-1.55	5.95-19.98	0.09-0.12	0.0-2.9	---	.17	.17			
	28-60	79	16	1-8	1.45-1.60	5.95-19.98	0.08-0.12	0.0-2.9	---	.17	.17			
Tivoli-----	0-6	86	7	5-10	1.35-1.50	5.95-19.98	0.07-0.11	0.0-2.9	0.0-1.0	.17	.17	5	2	134
	6-60	93	1	1-10	1.50-1.70	5.95-19.98	0.02-0.08	0.0-2.9	---	.17	.17			
SAP:														
Sand Pit-----	---			---	---	---	---	---	---	---	---	-	---	---
Ta:														
Tabler-----	0-8	35	34	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	7	38
	8-40	23	29	40-55	1.35-1.60	0.00-0.06	0.12-0.18	6.0-8.9	0.5-1.5	.37	.37			
	40-60	26	28	35-55	1.35-1.65	0.00-0.06	0.12-0.22	6.0-8.9	0.1-0.3	.37	.37			
Tb:														
Tabler-----	0-8	35	34	27-35	1.30-1.60	0.20-0.60	0.15-0.22	3.0-5.9	1.0-3.0	.43	.43	5	7	38
	8-40	23	29	40-55	1.35-1.60	0.00-0.06	0.12-0.18	6.0-8.9	0.5-1.5	.37	.37			
	40-60	26	28	35-55	1.35-1.65	0.00-0.06	0.12-0.22	6.0-8.9	0.1-0.3	.37	.37			
Drummond-----	0-8	38	36	20-30	1.35-1.55	0.60-2.00	0.11-0.18	0.0-2.9	0.5-1.0	.49	.49	2	4L	86
	8-30	25	27	35-60	1.40-1.65	0.00-0.06	0.09-0.17	6.0-8.9	---	.55	.55			
	>30			---	---	---	---	---	0.0-0.5	---	---			
Tf:														
Tivoli-----	0-8	93	1	1-10	1.35-1.50	6.00-20.00	0.02-0.08	0.0-2.9	0.0-1.0	.17	.17	5	1	250
	8-60	93	1	1-10	1.50-1.70	6.00-20.00	0.02-0.08	0.0-2.9	0.0-0.3	.17	.17			
To:														
Tobin-----	0-15	10	68	18-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	1.0-4.0	.32	.32	5	6	48
	15-40	7	66	18-35	1.35-1.50	0.60-2.00	0.17-0.20	3.0-5.9	1.0-4.0	.32	.32			
	40-60	9	64	18-35	1.35-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-0.5	.43	.43			

PHYSICAL PROPERTIES OF THE SOILS--Continued
Edwards County, Kansas: Published

(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
W:														
Water-----	---			---	---	---	---	---	---	---	---	-	---	---
Wa:														
Waldeck-----	0-10	68	20	8-16	1.50-1.60	2.00-6.00	0.14-0.18	0.0-2.9	1.0-2.0	.20	.20	4	3	86
	10-28	68	20	8-16	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	0.5-1.0	.20	.20			
	28-60	96	2	1-4	1.55-1.65	6.00-20.00	0.05-0.07	0.0-2.9	0.1-0.3	.20	.24			
Wc:														
Waldeck-----	0-10	45	41	10-18	1.40-1.55	2.00-6.00	0.18-0.20	0.0-2.9	1.0-3.0	.28	.28	4	5	56
	10-28	68	20	8-16	1.50-1.60	2.00-6.00	0.12-0.17	0.0-2.9	0.5-1.0	.20	.20			
	28-60	96	2	1-4	1.55-1.65	6.00-20.00	0.05-0.07	0.0-2.9	0.1-0.3	.20	.24			
Za:														
Zenda-----	0-15	34	37	27-32	1.45-1.55	0.60-2.00	0.17-0.22	3.0-5.9	1.0-3.0	.28	.28	5	6	48
	15-60	35	38	18-35	1.45-1.60	0.60-2.00	0.15-0.19	3.0-5.9	0.2-0.5	.28	.28			
Ze:														
Lesho-----	0-15	35	33	28-35	1.30-1.40	0.20-0.60	0.17-0.19	3.0-5.9	1.0-2.0	.28	.28	4	4L	86
	15-55	34	37	22-35	1.35-1.45	0.20-0.60	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
	55-60	96	2	1-5	1.45-1.55	6.00-20.00	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
Zs:														
Zenda-----	0-15	34	37	27-32	1.45-1.55	0.60-2.00	0.17-0.22	3.0-5.9	1.0-3.0	.28	.28	5	6	48
	15-60	35	38	18-35	1.45-1.60	0.60-2.00	0.15-0.19	3.0-5.9	0.2-0.5	.28	.28			
Drummond-----	0-8	36	39	20-30	1.35-1.55	0.60-2.00	0.11-0.18	0.0-2.9	0.5-1.0	.49	.49	2	4L	86
	8-60	23	29	35-60	1.40-1.65	0.00-0.06	0.09-0.17	6.0-8.9	0.3-0.8	.55	.55			

CHEMICAL PROPERTIES OF THE SOILS
Edwards County, Kansas

The Chemical Properties table shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils. Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

CHEMICAL PROPERTIES OF THE SOILS--Continued
Edwards County, Kansas

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Map symbol and soil name	Depth	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	
057AN: Roxbury-----	0-20	8.0-19	6.6-8.4	1-5	---	---	---
	20-52	7.0-21	7.4-8.4	1-5	---	---	---
	52-60	7.0-21	7.4-8.4	5-10	---	---	---
057LA: Las Animas, occasionally flooded-----	0-11	3.0-11	7.4-8.4	1-5	---	0.0-4.0	---
	11-32	3.0-11	7.4-8.4	1-5	---	0.0-2.0	---
	32-60	0.0-3.0	7.4-8.4	5-10	---	---	---
057LC: Las Animas-----	0-11	3.0-11	7.4-8.4	1-5	---	0.0-4.0	---
	11-32	3.0-11	7.4-8.4	1-5	---	0.0-2.0	---
	32-60	0.0-3.0	7.4-8.4	5-10	---	---	---
Lincoln-----	0-6	0.0-4.0	7.4-8.4	---	---	---	---
	6-60	2.0-9.0	7.9-8.4	1-5	---	---	---
097AT: Attica-----	0-10	1.0-7.0	5.6-7.3	---	---	---	---
	10-30	3.0-11	5.6-6.5	---	---	---	---
	30-60	1.0-11	6.1-7.8	---	---	---	---
097AX: Attica-----	0-10	1.0-7.0	5.6-7.3	---	---	---	---
	10-30	3.0-11	5.6-6.5	---	---	---	---
	30-60	1.0-11	6.1-7.8	---	---	---	---
Carwile-----	0-15	2.0-13	5.1-7.3	---	---	---	---
	15-36	14-36	6.1-8.4	---	---	---	---
	36-60	8.0-27	6.6-8.4	---	---	---	---
097TH: Tivoli-----	0-6	0.0-7.0	6.1-7.8	---	---	---	---
	6-60	0.0-6.0	6.1-8.4	---	---	---	---
145HC: Harney-----	0-7	12-24	5.6-7.8	0	0	0	0
	7-40	14-25	6.1-8.4	0	0	0	0
	40-60	9.0-21	7.4-8.4	5-10	0	0	0
145HD: Harney-----	0-7	12-24	5.6-7.8	0	0	0	0
	7-40	14-25	6.1-8.4	0	0	0	0
	40-60	9.0-21	7.4-8.4	5-10	0	0	0
Uly-----	0-10	7.0-18	6.1-7.8	0	0	0	0
	10-18	8.0-18	6.1-8.4	1-5	0	0	0
	18-60	7.0-16	7.4-8.4	1-10	0	0	0
145RO: Roxbury-----	0-14	8.0-19	6.6-8.4	1-5	---	---	---
	14-34	7.0-23	7.4-8.4	1-5	---	---	---
	34-60	7.0-21	7.4-8.4	5-10	---	---	---
145UC: Uly-----	0-10	7.0-18	6.1-7.8	0	0	0	0
	10-18	8.0-18	6.1-8.4	1-5	0	0	0
	18-60	7.0-16	7.4-8.4	1-10	0	0	0
151KP: Kanza-----	0-11	1.0-9.0	5.6-6.5	---	---	---	---
	11-40	0.0-7.0	5.6-8.4	---	---	---	---
Plevna-----	0-10	3.0-13	6.6-8.4	0	0	0	0
	10-40	3.0-11	6.6-8.4	0	0	0	0
	40-60	0.0-4.0	6.6-8.4	0	0	0	0
185PR: Pratt-----	0-8	1.0-5.0	5.6-7.3	---	---	---	---
	8-28	1.0-7.0	5.6-7.3	---	---	---	---
	28-60	0.0-5.0	6.1-7.3	---	---	---	---
Carwile-----	0-7	2.0-13	5.1-7.3	---	---	---	---
	7-14	10-24	5.1-7.3	---	---	---	---
	14-38	14-36	6.1-8.4	---	---	---	---
	38-60	8.0-27	6.6-8.4	---	---	---	---
Aa: Attica-----	0-11	2.0-8.0	5.6-7.3	---	---	---	---
	11-30	3.0-11	5.6-6.5	---	---	---	---
	30-60	1.0-11	6.1-7.8	---	---	---	---
Ab: Attica-----	0-11	2.0-8.0	5.6-7.3	---	---	---	---
	11-30	3.0-11	5.6-6.5	---	---	---	---
	30-60	1.0-11	6.1-7.8	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued
Edwards County, Kansas

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Map symbol and soil name	Depth	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	
Ac:							
Attica-----	0-11	2.0-8.0	5.6-7.3	---	---	---	---
	11-30	3.0-11	5.6-6.5	---	---	---	---
	30-60	1.0-11	6.1-7.8	---	---	---	---
Carwile-----	0-11	2.0-13	5.1-7.3	---	---	---	---
	11-17	10-24	5.1-7.3	---	---	---	---
	17-42	14-36	6.1-8.4	---	---	---	---
	42-60	8.0-27	6.6-8.4	---	---	---	---
ARR:							
Arkansas River--	0-6	---	---	---	---	---	---
	6-60	---	---	---	---	---	---
Bk:							
Coly-----	0-6	7.0-16	7.4-8.4	---	0	0	0
	6-60	7.0-14	7.4-8.4	---	0	0	0
Tobin-----	0-15	7.0-19	5.6-7.8	---	---	---	---
	15-60	7.0-24	7.4-8.4	---	---	---	---
BOP:							
Borrow Pits-----	---	---	---	---	---	---	---
Cc:							
Campus-----	0-8	6.0-18	7.4-8.4	---	---	---	---
	8-17	7.0-21	7.4-8.4	---	---	---	---
	17-24	7.0-21	7.9-8.4	---	---	---	---
	>24	---	---	---	---	---	---
Canlon-----	0-4	5.0-18	7.4-8.4	---	0	0	0
	4-11	3.0-16	7.4-8.4	---	0	0	0
	>11	---	---	---	---	---	---
Cd:							
Canadian-----	0-19	2.0-13	5.6-7.3	0	0	0	0
	19-40	4.0-11	6.1-8.4	0	0	0	0
	40-60	2.0-11	6.1-8.4	0	0	0	0
Cf:							
Darr-----	0-19	2.0-13	5.6-7.3	0	0	0	0
	19-32	4.0-11	6.1-8.4	0	0	0	0
	32-60	2.0-11	6.1-8.4	0	0	0	0
Cr:							
Carwile-----	0-11	2.0-13	5.1-7.3	---	---	---	---
	11-17	10-24	5.1-7.3	---	---	---	---
	17-42	14-36	6.1-8.4	---	---	---	---
	42-60	8.0-27	6.6-8.4	---	---	---	---
Cs:							
Carwile-----	0-11	2.0-13	5.1-7.3	---	---	---	---
	11-17	10-24	5.1-7.3	---	---	---	---
	17-42	14-36	6.1-8.4	---	---	---	---
	42-60	8.0-27	6.6-8.4	---	---	---	---
Drummond-----	0-8	8.0-19	6.1-8.4	---	---	0.0-4.0	10-15
	8-60	14-36	7.4-9.0	---	---	2.0-8.0	20-30
Fa:							
Farnum-----	0-14	6.0-18	5.6-7.3	---	---	---	---
	14-26	8.0-16	6.1-7.8	---	---	---	---
	26-42	10-21	6.1-8.4	---	---	---	---
	42-60	4.0-18	6.6-8.4	---	---	---	---
Fr:							
Farnum-----	0-8	6.0-18	5.6-7.3	---	---	---	---
	8-16	8.0-16	6.1-7.8	---	---	---	---
	16-37	10-21	6.1-8.4	---	---	---	---
	37-60	4.0-18	6.6-8.4	---	---	---	---
Ha:							
Harney-----	0-10	9.0-19	5.6-7.8	0	0	0	0
	10-34	14-25	6.1-8.4	0	0	0	0
	34-60	9.0-21	7.4-8.4	5-10	0	0	0
Hb:							
Harney-----	0-10	9.0-19	5.6-7.8	0	0	0	0
	10-34	14-25	6.1-8.4	0	0	0	0
	34-60	9.0-21	7.4-8.4	5-10	0	0	0
Hc:							
Harney-----	0-10	9.0-19	5.6-7.8	0	0	0	0
	10-34	14-25	6.1-8.4	0	0	0	0
	34-60	9.0-21	7.4-8.4	5-10	0	0	0

CHEMICAL PROPERTIES OF THE SOILS--Continued
Edwards County, Kansas

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Map symbol and soil name	Depth	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	
Hd:							
Harney-----	0-6	12-24	5.6-7.8	0	0	0	0
	6-34	14-25	6.1-8.4	0	0	0	0
	34-60	9.0-21	7.4-8.4	5-10	0	0	0
Uly-----	0-8	7.0-18	6.1-7.8	0	0	0	0
	8-30	8.0-18	6.1-8.4	1-5	0	0	0
	30-60	7.0-16	7.4-8.4	1-10	0	0	0
He:							
Harney-----	0-6	12-24	5.6-7.8	0	0	0	0
	6-34	14-25	6.1-8.4	0	0	0	0
	34-60	9.0-21	7.4-8.4	5-10	0	0	0
Uly-----	0-8	7.0-18	6.1-7.8	0	0	0	0
	8-30	8.0-18	6.1-8.4	1-5	0	0	0
	30-60	7.0-16	7.4-8.4	1-10	0	0	0
Hg:							
Holdrege-----	0-11	6.0-17	5.6-7.3	0	0	0	0
	11-33	11-21	6.6-7.8	1-5	0	0	0
	33-48	7.0-18	6.6-7.8	1-5	0	0	0
	48-66	6.0-12	7.4-8.4	1-5	0	0	0
Hh:							
Holdrege-----	0-10	6.0-17	5.6-7.3	0	0	0	0
	10-20	11-21	6.6-7.8	0	0	0	0
	20-26	7.0-18	6.6-7.8	0-10	0	0	0
	26-60	6.0-12	7.4-8.4	1-10	0	0	0
Ho:							
Hord-----	0-12	7.0-19	5.6-7.3	0	0	0	0
	12-42	8.0-21	6.1-7.8	0	0	0	0
	42-60	7.0-18	7.4-8.4	0-5	0	0	0
La:							
Las Animas-----	0-15	1.0-7.0	7.4-8.4	---	---	0.0-4.0	0-5
	15-45	3.0-11	7.4-8.4	1-5	---	0.0-2.0	0-5
	45-60	0.0-3.0	7.4-8.4	5-10	---	---	---
Lh:							
Lesho-----	0-18	11-23	7.4-8.4	---	---	0.0-4.0	0-5
	18-32	7.0-21	7.4-8.4	---	---	0.0-4.0	0-5
	32-60	0.0-5.0	7.4-9.0	---	---	0.0-4.0	0-5
Lk:							
Lubbock-----	0-10	8.0-18	6.6-7.8	---	---	---	---
	10-44	14-27	6.6-8.4	1-5	---	---	---
	44-60	8.0-21	7.9-8.4	5-10	---	---	---
Na:							
Naron-----	0-12	2.0-7.0	5.6-7.3	---	---	---	---
	12-60	7.0-16	5.6-7.8	---	---	---	---
Nf:							
Naron-----	0-12	3.0-10	5.6-7.3	---	---	---	---
	12-60	7.0-16	5.6-7.8	---	---	---	---
Ng:							
Naron-----	0-12	3.0-10	5.6-7.3	---	---	---	---
	12-60	7.0-16	5.6-7.8	---	---	---	---
Ns:							
Ness-----	0-31	16-38	6.1-8.4	---	---	---	---
	31-60	8.0-24	7.4-8.4	1-5	---	---	---
Pa:							
Platte-----	0-9	4.0-14	6.6-8.4	---	0	0.0-2.0	0
	9-60	0.0-2.0	6.6-8.4	---	0	0.0-2.0	0
Pe:							
Plevna-----	0-10	3.0-13	6.6-8.4	0	0	0	0
	10-39	3.0-11	6.6-8.4	0	0	0	0
	39-60	0.0-4.0	6.6-8.4	0	0	0	0
Pf:							
Pratt-----	0-13	1.0-5.0	5.6-7.3	---	---	---	---
	13-30	1.0-7.0	5.6-7.3	---	---	---	---
	30-60	0.0-5.0	6.1-7.3	---	---	---	---
Pg:							
Pratt-----	0-13	1.0-5.0	5.6-7.3	---	---	---	---
	13-30	1.0-7.0	5.6-7.3	---	---	---	---
	30-60	0.0-5.0	6.1-7.3	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued
Edwards County, Kansas

PAGE 5 of 5

Map symbol and soil name	Depth	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	
Pr:							
Pratt-----	0-13	1.0-5.0	5.6-7.3	---	---	---	---
	13-30	1.0-7.0	5.6-7.3	---	---	---	---
	30-60	0.0-5.0	6.1-7.3	---	---	---	---
Lincoln-----	0-5	2.0-9.0	7.4-8.4	---	---	---	---
	5-60	2.0-9.0	7.9-8.4	1-5	---	---	---
PRR:							
Pratt-----	0-12	1.0-5.0	5.6-7.3	---	---	---	---
	12-36	1.0-7.0	5.6-7.3	---	---	---	---
	36-60	0.0-5.0	6.1-7.3	---	---	---	---
PSS:							
Pratt-----	0-8	1.0-5.0	5.6-7.3	---	---	---	---
	8-28	1.0-7.0	5.6-7.3	---	---	---	---
	28-60	0.0-5.0	6.1-7.3	---	---	---	---
Pt:							
Pratt-----	0-8	1.0-5.0	5.6-7.3	---	---	---	---
	8-28	1.0-7.0	5.6-7.3	---	---	---	---
	28-60	0.0-5.0	6.1-7.3	---	---	---	---
Tivoli-----	0-6	2.0-7.0	6.1-7.8	---	---	---	---
	6-60	0.0-6.0	6.1-8.4	---	---	---	---
SAP:							
Sand Pit-----	---	---	---	---	---	---	---
Ta:							
Tabler-----	0-8	11-23	5.6-8.4	0	0	0	0
	8-40	16-33	6.1-8.4	0	0	0	0
	40-60	14-33	7.4-8.4	0	0	0	0
Tb:							
Tabler-----	0-8	11-23	5.6-8.4	0	0	0	0
	8-40	16-33	6.1-8.4	0	0	0	0
	40-60	14-33	7.4-8.4	0	0	0	0
Drummond-----	0-8	8.0-19	6.1-8.4	---	---	0.0-4.0	---
	8-30	14-36	7.4-9.0	---	---	2.0-8.0	---
	>30	---	---	1-5	---	---	---
Tf:							
Tivoli-----	0-8	0.0-7.0	6.1-7.8	---	---	---	---
	8-60	0.0-6.0	6.1-8.4	---	---	---	---
To:							
Tobin-----	0-15	7.0-19	5.6-7.8	---	---	---	---
	15-40	7.0-24	7.4-8.4	---	---	---	---
	40-60	7.0-21	7.4-8.4	---	---	---	---
W:							
Water-----	---	---	---	---	---	---	---
Wa:							
Waldeck-----	0-10	3.0-11	7.4-8.4	---	---	---	---
	10-28	3.0-10	7.4-8.4	---	---	---	---
	28-60	0.0-3.0	7.4-8.4	---	---	---	---
Wc:							
Waldeck-----	0-10	4.0-13	7.4-8.4	---	---	---	---
	10-28	3.0-10	7.4-8.4	---	---	---	---
	28-60	0.0-3.0	7.4-8.4	---	---	---	---
Za:							
Zenda-----	0-15	11-21	6.6-8.4	---	---	0.0-4.0	---
	15-60	7.0-21	7.4-8.4	---	---	0.0-4.0	---
Ze:							
Lesho-----	0-15	11-22	7.4-9.0	---	---	2.0-8.0	1-5
	15-55	8.0-21	7.9-9.0	---	---	4.0-16.0	5-10
	55-60	0.0-3.0	7.4-9.0	---	---	2.0-8.0	5-10
Zs:							
Zenda-----	0-15	11-21	6.6-8.4	---	---	0.0-4.0	---
	15-60	7.0-21	7.4-8.4	---	---	0.0-4.0	---
Drummond-----	0-8	8.0-19	6.1-8.4	---	---	0.0-4.0	10-15
	8-60	14-36	7.4-9.0	---	---	2.0-8.0	20-30

WATER FEATURES Edwards County, Kansas

The Water Features table gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The months in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The Water Features table indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table. Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The Water Features table indicates surface water depth and the duration and frequency of ponding. Duration is expressed as very brief if less than 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. None means that ponding is not probable; rare that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); occasional that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and frequent that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and frequency are estimated. Duration is expressed as extremely brief if 0.1 hour to 4 hours, very brief if 4 hours to 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. None means that flooding is not probable; very rare that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); rare that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); occasional that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); frequent that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and very frequent that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
057AN: Roxbury-----	B	April	---	---	---	---	---	Very brief	Frequent
		May	---	---	---	---	---	Very brief	Frequent
		June	---	---	---	---	---	Very brief	Frequent
		July	---	---	---	---	---	Very brief	Frequent
		August	---	---	---	---	---	Very brief	Frequent
		September	---	---	---	---	---	Very brief	Frequent
057LA: Las Animas, occasionally flooded-----	C	January	1.5-3.0	>6.0	---	---	---	---	None
		February	1.5-3.0	>6.0	---	---	---	---	None
		March	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		April	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		May	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		November	1.5-3.0	>6.0	---	---	---	---	None
		December	1.5-3.0	>6.0	---	---	---	---	None
057LC: Las Animas-----	C	January	1.5-3.0	>6.0	---	---	---	---	None
		February	1.5-3.0	>6.0	---	---	---	---	None
		March	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		April	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		May	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		November	1.5-3.0	>6.0	---	---	---	---	None
		December	1.5-3.0	>6.0	---	---	---	---	None
Lincoln-----	A	January	5.0-6.0	>6.0	---	---	---	---	None
		February	5.0-6.0	>6.0	---	---	---	---	None
		March	5.0-6.0	>6.0	---	---	---	---	None
		April	5.0-6.0	>6.0	---	---	---	Brief	Occasional
		May	5.0-6.0	>6.0	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
		October	---	---	---	---	---	Brief	Occasional
		November	5.0-6.0	>6.0	---	---	---	---	None
		December	5.0-6.0	>6.0	---	---	---	---	None
097AT: Attica-----	B		---	---	---	---	---	---	---
097AX: Attica-----	B		---	---	---	---	---	---	---
Carwile-----	D		---	---	---	---	---	---	---
		January	0.0	>6.0	0.0-1.0	Brief	---	---	None
		February	0.0	>6.0	0.0-1.0	Brief	---	---	None
		March	0.0	>6.0	0.0-1.0	Brief	---	---	None
		April	0.0	>6.0	0.0-1.0	Brief	---	---	None
		October	0.0	>6.0	0.0-1.0	Brief	---	---	None
		November	0.0	>6.0	0.0-1.0	Brief	---	---	None
		December	0.0	>6.0	0.0-1.0	Brief	---	---	None
097TH: Tivoli-----	A		---	---	---	---	---	---	---
145HC: Harney-----	B		---	---	---	---	---	---	---
145HD: Harney-----	B		---	---	---	---	---	---	---
Uly-----	B		---	---	---	---	---	---	---
145RO: Roxbury-----	B		---	---	---	---	---	---	---
		April	---	---	---	---	---	Very brief	Frequent
		May	---	---	---	---	---	Very brief	Frequent
		June	---	---	---	---	---	Very brief	Frequent
		July	---	---	---	---	---	Very brief	Frequent
		August	---	---	---	---	---	Very brief	Frequent
		September	---	---	---	---	---	Very brief	Frequent
145UC: Uly-----	B		---	---	---	---	---	---	---
151KP:			---	---	---	---	---	---	---

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Kanza-----	D		Ft	Ft	Ft				
		January	0.0-3.0	>6.0	---	---	---	Very brief	Frequent
		February	0.0-3.0	>6.0	---	---	---	Very brief	Frequent
		March	0.0-3.0	>6.0	---	---	---	Very brief	Frequent
		April	---	---	---	---	---	Very brief	Frequent
		May	---	---	---	---	---	Very brief	Frequent
		June	---	---	---	---	---	Very brief	Frequent
		July	---	---	---	---	---	Very brief	Frequent
		August	---	---	---	---	---	Very brief	Frequent
		September	---	---	---	---	---	Very brief	Frequent
		October	---	---	---	---	---	Very brief	Frequent
		November	---	---	---	---	---	Very brief	Frequent
		December	0.0-3.0	>6.0	---	---	---	Very brief	Frequent
Plevna-----	D								
		January	0.0-2.0	>6.0	---	---	---	---	None
		February	0.0-2.0	>6.0	---	---	---	---	None
		March	0.0-2.0	>6.0	---	---	---	Long	Frequent
		April	0.0-2.0	>6.0	---	---	---	Long	Frequent
		May	0.0-2.0	>6.0	---	---	---	Long	Frequent
		June	0.0-2.0	>6.0	---	---	---	Long	Frequent
		July	0.0-2.0	>6.0	---	---	---	Long	Frequent
		August	0.0-2.0	>6.0	---	---	---	Long	Frequent
		September	0.0-2.0	>6.0	---	---	---	Long	Frequent
		October	0.0-2.0	>6.0	---	---	---	Long	Frequent
		November	0.0-2.0	>6.0	---	---	---	---	None
		December	0.0-2.0	>6.0	---	---	---	---	None
185PR: Pratt-----	A		---	---	---	---	---	---	---
Carwile-----	D								
		January	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		May	---	---	0.0-	---	---	---	None
		June	---	---	0.0-	---	---	---	None
		July	---	---	0.0-	---	---	---	None
		August	---	---	0.0-	---	---	---	None
		September	---	---	0.0-	---	---	---	None
		October	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
Aa: Attica-----	B		---	---	---	---	---	---	---
Ab: Attica-----	B		---	---	---	---	---	---	---
Ac: Attica-----	B		---	---	---	---	---	---	---
		January	1.0-2.0	>6.0	---	---	---	---	None
		February	1.0-2.0	>6.0	---	---	---	---	None
		March	1.0-2.0	>6.0	---	---	---	---	None
		April	1.0-2.0	>6.0	---	---	---	---	None
		October	1.0-2.0	>6.0	---	---	---	---	None
		November	1.0-2.0	>6.0	---	---	---	---	None
		December	1.0-2.0	>6.0	---	---	---	---	None
Carwile-----	D								
		January	0.0	>6.0	0.0-1.0	Brief	---	---	None
		February	0.0	>6.0	0.0-1.0	Brief	---	---	None
		March	0.0	>6.0	0.0-1.0	Brief	---	---	None
		April	0.0	>6.0	0.0-1.0	Brief	---	---	None
		May	---	---	0.0-	---	---	---	None
		June	---	---	0.0-	---	---	---	None
		July	---	---	0.0-	---	---	---	None
		August	---	---	0.0-	---	---	---	None
		September	---	---	0.0-	---	---	---	None
		October	0.0	>6.0	0.0-1.0	Brief	---	---	None
		November	0.0	>6.0	0.0-1.0	Brief	---	---	None
		December	0.0	>6.0	0.0-1.0	Brief	---	---	None
ARR: Arkansas River-----	D								
		January	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		February	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		March	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		April	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		May	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		June	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		July	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		August	0.0-2.0	>6.0	---	---	---	---	None
		September	0.0-2.0	>6.0	---	---	---	---	None
		October	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		November	0.0-2.0	>6.0	---	---	---	Very long	Frequent
		December	0.0-2.0	>6.0	---	---	---	Very long	Frequent

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Bk:			Ft	Ft	Ft				
Coly-----	B		---	---	---	---	---	---	---
Tobin-----	B	April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
BOP:									
Borrow Pits-----	---		---	---	---	---	---	---	---
Cc:									
Campus-----	B		---	---	---	---	---	---	---
Canlon-----	D		---	---	---	---	---	---	---
Cd:									
Canadian-----	B	April	---	---	---	---	---	Very brief	Rare
		May	---	---	---	---	---	Very brief	Rare
		June	---	---	---	---	---	Very brief	Rare
		July	---	---	---	---	---	Very brief	Rare
		August	---	---	---	---	---	Very brief	Rare
		September	---	---	---	---	---	Very brief	Rare
Cf:									
Darr-----	B	April	---	---	---	---	---	Very brief	Rare
		May	---	---	---	---	---	Very brief	Rare
		June	---	---	---	---	---	Very brief	Rare
		July	---	---	---	---	---	Very brief	Rare
		August	---	---	---	---	---	Very brief	Rare
		September	---	---	---	---	---	Very brief	Rare
Cr:									
Carwile-----	D	January	0.0	>6.0	0.0-1.0	Long	---	---	None
		February	0.0	>6.0	0.0-1.0	Long	---	---	None
		March	0.0	>6.0	0.0-1.0	Long	---	---	None
		April	0.0	>6.0	0.0-1.0	Long	---	---	None
		May	---	---	0.0-	---	---	---	None
		June	---	---	0.0-	---	---	---	None
		July	---	---	0.0-	---	---	---	None
		August	---	---	0.0-	---	---	---	None
		September	---	---	0.0-	---	---	---	None
		October	0.0	>6.0	0.0-1.0	Long	---	---	None
		November	0.0	>6.0	0.0-1.0	Long	---	---	None
		December	0.0	>6.0	0.0-1.0	Long	---	---	None
Cs:									
Carwile-----	D	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
Drummond-----	D	January	2.0-6.0	>6.0	---	---	---	---	None
		February	2.0-6.0	>6.0	---	---	---	---	None
		March	2.0-6.0	>6.0	---	---	---	---	None
		April	2.0-6.0	>6.0	---	---	---	---	None
		November	2.0-6.0	>6.0	---	---	---	---	None
		December	2.0-6.0	>6.0	---	---	---	---	None
Fa:									
Farnum-----	B		---	---	---	---	---	---	---
Fr:									
Farnum-----	B		---	---	---	---	---	---	---
Ha:									
Harney-----	B		---	---	---	---	---	---	---
Hb:									
Harney-----	B		---	---	---	---	---	---	---
Hc:									
Harney-----	B		---	---	---	---	---	---	---
Hd:									
Harney-----	B		---	---	---	---	---	---	---
Uly-----	B		---	---	---	---	---	---	---

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
He: Harney-----	B		Ft	Ft	Ft				
Uly-----	B		---	---	---	---	---	---	---
Hg: Holdrege-----	B		---	---	---	---	---	---	---
Hh: Holdrege-----	B		---	---	---	---	---	---	---
Ho: Hord-----	B		---	---	---	---	---	---	---
		April	---	---	---	---	---	Very brief	Rare
		May	---	---	---	---	---	Very brief	Rare
		June	---	---	---	---	---	Very brief	Rare
		July	---	---	---	---	---	Very brief	Rare
		August	---	---	---	---	---	Very brief	Rare
		September	---	---	---	---	---	Very brief	Rare
La: Las Animas-----	C								
		January	1.5-3.0	>6.0	---	---	---	---	None
		February	1.5-3.0	>6.0	---	---	---	---	None
		March	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		April	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		May	1.5-3.0	>6.0	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		November	1.5-3.0	>6.0	---	---	---	---	None
		December	1.5-3.0	>6.0	---	---	---	---	None
Lh: Lesho-----	C								
		March	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		April	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		May	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		June	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
Lk: Lubbock-----	B								
Na: Naron-----	B								
Nf: Naron-----	B								
Ng: Naron-----	B								
Ns: Ness-----	D								
		January	---	---	0.0-	---	---	---	None
		February	---	---	0.0-	---	---	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		July	---	---	0.0-	---	---	---	None
		August	---	---	0.0-	---	---	---	None
		September	---	---	0.0-	---	---	---	None
		October	---	---	0.0-	---	---	---	None
		November	---	---	0.0-	---	---	---	None
		December	---	---	0.0-	---	---	---	None
Pa: Platte-----	B								
		February	1.0-2.0	>6.0	---	---	---	---	None
		March	1.0-2.0	>6.0	---	---	---	---	None
		April	1.0-2.0	>6.0	---	---	---	Brief	Occasional
		May	1.0-2.0	>6.0	---	---	---	Brief	Occasional
		June	1.0-2.0	>6.0	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
Pe:									

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Plevna-----	D		Ft	Ft	Ft				
		January	0.0-2.0	>6.0	---	---	---	---	None
		February	0.0-2.0	>6.0	---	---	---	---	None
		March	0.0-2.0	>6.0	---	---	---	Long	Frequent
		April	0.0-2.0	>6.0	---	---	---	Long	Frequent
		May	0.0-2.0	>6.0	---	---	---	Long	Frequent
		June	0.0-2.0	>6.0	---	---	---	Long	Frequent
		July	0.0-2.0	>6.0	---	---	---	Long	Frequent
		August	0.0-2.0	>6.0	---	---	---	Long	Frequent
		September	0.0-2.0	>6.0	---	---	---	Long	Frequent
		October	0.0-2.0	>6.0	---	---	---	Long	Frequent
		November	0.0-2.0	>6.0	---	---	---	---	None
		December	0.0-2.0	>6.0	---	---	---	---	None
Pf:									
Pratt-----	A		---	---	---	---	---	---	---
Pg:									
Pratt-----	A		---	---	---	---	---	---	---
Pr:									
Pratt-----	A		---	---	---	---	---	---	---
Lincoln-----	A								
		January	5.0-6.0	>6.0	---	---	---	---	None
		February	5.0-6.0	>6.0	---	---	---	---	None
		March	5.0-6.0	>6.0	---	---	---	---	None
		April	5.0-6.0	>6.0	---	---	---	Brief	Occasional
		May	5.0-6.0	>6.0	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
		October	---	---	---	---	---	Brief	Occasional
		November	5.0-6.0	>6.0	---	---	---	---	None
		December	5.0-6.0	>6.0	---	---	---	---	None
PRR:									
Pratt-----	A		---	---	---	---	---	---	---
PSS:									
Pratt-----	A		---	---	---	---	---	---	---
Pt:									
Pratt-----	A		---	---	---	---	---	---	---
Tivoli-----	A		---	---	---	---	---	---	---
SAP:									
Sand Pit-----	---		---	---	---	---	---	---	---
Ta:									
Tabler-----	D		---	---	---	---	---	---	---
Tb:									
Tabler-----	D		---	---	---	---	---	---	---
Drummond-----	D								
		January	2.0-6.0	>6.0	---	---	---	---	None
		February	2.0-6.0	>6.0	---	---	---	---	None
		March	2.0-6.0	>6.0	---	---	---	---	None
		April	2.0-6.0	>6.0	---	---	---	---	None
		November	2.0-6.0	>6.0	---	---	---	---	None
		December	2.0-6.0	>6.0	---	---	---	---	None
Tf:									
Tivoli-----	A		---	---	---	---	---	---	---
To:									
Tobin-----	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
W:									
Water-----	---		---	---	---	---	---	---	---
Wa:									

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
Waldeck-----	C		Ft	Ft	Ft				
		January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	---	None
		April	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		May	---	---	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
		October	2.0-4.0	>6.0	---	---	---	---	None
		November	2.0-4.0	>6.0	---	---	---	---	None
		December	2.0-4.0	>6.0	---	---	---	---	None
Wc: Waldeck-----	C								
		January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	---	None
		April	2.0-4.0	>6.0	---	---	---	Brief	Occasional
		May	---	---	---	---	---	Brief	Occasional
		June	---	---	---	---	---	Brief	Occasional
		July	---	---	---	---	---	Brief	Occasional
		August	---	---	---	---	---	Brief	Occasional
		September	---	---	---	---	---	Brief	Occasional
		October	2.0-4.0	>6.0	---	---	---	---	None
		November	2.0-4.0	>6.0	---	---	---	---	None
		December	2.0-4.0	>6.0	---	---	---	---	None
Za: Zenda-----	C								
		January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	---	None
		April	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
		October	2.0-4.0	>6.0	---	---	---	---	None
		November	2.0-4.0	>6.0	---	---	---	---	None
		December	2.0-4.0	>6.0	---	---	---	---	None
Ze: Lesho-----	C								
		March	2.0-4.0	>6.0	---	---	---	---	None
		April	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		May	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		June	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
Zs: Zenda-----	C								
		January	2.0-4.0	>6.0	---	---	---	---	None
		February	2.0-4.0	>6.0	---	---	---	---	None
		March	2.0-4.0	>6.0	---	---	---	---	None
		April	2.0-4.0	>6.0	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
		October	2.0-4.0	>6.0	---	---	---	---	None
		November	2.0-4.0	>6.0	---	---	---	---	None
		December	2.0-4.0	>6.0	---	---	---	---	None
Drummond-----	D								
		January	2.0-6.0	>6.0	---	---	---	---	None
		February	2.0-6.0	>6.0	---	---	---	---	None
		March	2.0-6.0	>6.0	---	---	---	---	None
		April	2.0-6.0	>6.0	---	---	---	---	None
		November	2.0-6.0	>6.0	---	---	---	---	None
		December	2.0-6.0	>6.0	---	---	---	---	None

The following table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A restrictive layer is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as low, moderate, or high, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as low, moderate, or high. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Map symbol and soil name	Restrictive layer				Potential for Frost action	Risk of corrosion	
	Kind	Depth to top In	Thickness In	Hardness		Uncoated Steel	Concrete
057AN: Roxbury-----	---	---	---	---	Moderate	Low	Low
057LA: Las Animas, occasionally flooded-----	---	---	---	---	Moderate	High	Low
057LC: Las Animas-----	---	---	---	---	Moderate	High	Low
Lincoln-----	---	---	---	---	Low	Low	Low
097AT: Attica-----	---	---	---	---	Moderate	Low	Low
097AX: Attica-----	---	---	---	---	Low	Low	Low
Carwile-----	---	---	---	---	Low	High	Moderate
097TH: Tivoli-----	---	---	---	---	Low	Low	Low
145HC: Harney-----	---	---	---	---	Low	High	Low
145HD: Harney-----	---	---	---	---	Low	High	Low
Uly-----	---	---	---	---	Low	High	Low
145RO: Roxbury-----	---	---	---	---	Low	Low	Low
145UC: Uly-----	---	---	---	---	Low	High	Low
151KP: Kanza-----	---	---	---	---	Low	High	Moderate
Plevna-----	---	---	---	---	Low	High	Low
185PR: Pratt-----	---	---	---	---	Low	Low	Moderate
Carwile-----	---	---	---	---	Low	High	Moderate
Aa: Attica-----	---	---	---	---	---	Low	Low
Ab: Attica-----	---	---	---	---	---	Low	Low
Ac: Attica-----	---	---	---	---	---	Low	Low
Carwile-----	---	---	---	---	---	Low	Low
ARR: Arkansas River--	---	---	---	---	---	---	---
Bk: Coly-----	---	---	---	---	Moderate	High	Low
Tobin-----	---	---	---	---	Moderate	Low	Low
BOP: Borrow Pits-----	---	---	---	---	---	---	---
Cc: Campus-----	20-40	Bedrock (lithic)	---	Strongly cemented	Low	Low	Low
Canlon-----	10-20	Bedrock (lithic)	---	Indurated	Low	Low	Low
Cd: Canadian-----	---	---	---	---	---	Low	Low
Cf: Darr-----	---	---	---	---	---	Low	Low
Cr: Carwile-----	---	---	---	---	---	High	Moderate
Cs: Carwile-----	---	---	---	---	Low	High	Moderate
Drummond-----	---	---	---	---	Low	High	High
Fa: Farnum-----	---	---	---	---	Low	Moderate	Low
Fr: Farnum-----	---	---	---	---	---	Moderate	Low
Ha: Harney-----	---	---	---	---	Low	High	Low
Hb: Harney-----	---	---	---	---	Low	High	Low
Hc: Harney-----	---	---	---	---	Low	High	Low
Hd: Harney-----	---	---	---	---	Low	High	Low
Uly-----	---	---	---	---	Low	High	Low
He: Harney-----	---	---	---	---	Moderate	High	Low
Uly-----	---	---	---	---	Low	High	Low
Hg: Holdrege-----	---	---	---	---	Low	Low	Low
Hh: Holdrege-----	---	---	---	---	Moderate	Low	Low
Ho: Hord-----	---	---	---	---	Low	High	Low
La: Las Animas-----	---	---	---	---	Moderate	High	Low
Lh: Lesho-----	---	---	---	---	---	High	Low
Lk: Lubbock-----	---	---	---	---	Low	High	Low
Na: Naron-----	---	---	---	---	---	Low	Low

Map symbol and soil name	Restrictive layer				Potential for Frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated Steel	Concrete
		In	In				
Nf:							
Naron-----	---	---	---	---	---	Low	Low
Ng:							
Naron-----	---	---	---	---	---	Low	Low
Ns:							
Ness-----	---	---	---	---	Low	High	Low
Pa:							
Platte-----	---	---	---	---	Low	High	Moderate
Pe:							
Plevna-----	---	---	---	---	---	High	Low
Pf:							
Pratt-----	---	---	---	---	---	Low	Moderate
Pg:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Pr:							
Pratt-----	---	---	---	---	---	Low	Moderate
Lincoln-----	---	---	---	---	---	Low	Low
PRR:							
Pratt-----	---	---	---	---	Low	Low	Moderate
PSS:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Pt:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Tivoli-----	---	---	---	---	Low	Low	Low
SAP:							
Sand pit-----	---	---	---	---	---	---	---
Ta:							
Tabler-----	---	---	---	---	---	High	Low
Tb:							
Tabler-----	---	---	---	---	---	High	Low
Drummond-----	---	---	---	---	None	High	High
Tf:							
Tivoli-----	---	---	---	---	---	Low	Low
To:							
Tobin-----	---	---	---	---	Low	Low	Low
W:							
Water-----	---	---	---	---	Low	---	---
Wa:							
Waldeck-----	---	---	---	---	Low	Moderate	Low
Wc:							
Waldeck-----	---	---	---	---	---	Moderate	Low
Za:							
Zenda-----	---	---	---	---	---	High	Low
Ze:							
Lesho-----	---	---	---	---	---	High	Low
Zs:							
Zenda-----	---	---	---	---	---	High	Low
Drummond-----	---	---	---	---	None	High	High

WATER MANAGEMENT
Edwards County, Kansas

The soils of the survey area are rated in the Water Management table according to limitations that affect their suitability for water management. Soils are rated for pond reservoir areas, drainage, irrigation, terraces and diversions, and grassed waterways. Restrictive features that affect each soil for the specified use is also provided in the table.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Moderately limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Limited indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but generally require special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate to high maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Limitation class terms, such as very limited or limited, etc., limitation ratings, and numerical ratings are shown for each soil feature listed. As many as three soil features may be listed for each soil component if applicable. The overall limitation rating for the soil component is based on the most severe limitation.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects traffic ability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditch banks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a very limited hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, which conduct surface water to outlets at a non-erosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
057AN: Roxbury-----	Limitation: deep to water	Limitation: flooding	Limitation: erodes easily	Limitation: erodes easily
057LA: Las Animas, occasionally flooded-----	Limitation: flooding cutbanks cave	Limitation: wetness soil blowing droughty	Limitation: too sandy wetness soil blowing	Limitation: droughty
057LC: Las Animas-----	Limitation: flooding cutbanks cave	Limitation: wetness soil blowing droughty	Limitation: too sandy wetness soil blowing	Limitation: droughty
Lincoln-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
097AT: Attica-----	Limitation: deep to water	Limitation: fast intake soil blowing	Limitation: soil blowing	Favorable
097AX: Attica-----	Limitation: deep to water	Limitation: fast intake soil blowing	Limitation: soil blowing	Favorable
Carwile-----	Limitation: percs slowly ponding	Limitation: wetness soil blowing ponding	Limitation: percs slowly soil blowing ponding	Limitation: percs slowly wetness
097TH: Tivoli-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
145HC: Harney-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
145HD: Harney-----	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
Uly-----	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
145RO: Roxbury-----	Limitation: deep to water	Limitation: flooding	Limitation: erodes easily	Limitation: erodes easily
145UC: Uly-----	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
151KP: Kanza-----	Limitation: flooding cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness soil blowing	Limitation: wetness droughty
Plevna-----	Limitation: flooding	Limitation: flooding wetness soil blowing	Limitation: wetness soil blowing	Limitation: wetness
185PR: Pratt-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing	Limitation: droughty
Carwile-----	Limitation: percs slowly	Limitation: percs slowly wetness soil blowing	Limitation: erodes easily wetness soil blowing	Limitation: erodes easily percs slowly rooting depth
Aa: Attica-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Ab: Attica-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Ac: Attica-----	Limitation: cutbanks cave	Limitation: wetness soil blowing	Limitation: wetness soil blowing	Limitation: wetness
Carwile-----	Limitation: percs slowly	Limitation: percs slowly wetness soil blowing	Limitation: erodes easily wetness soil blowing	Limitation: erodes easily percs slowly rooting depth

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
ARR: Arkansas River--	Limitation: flooding cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: wetness droughty
Bk: Coly-----	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope
Tobin-----	Limitation: deep to water	Limitation: flooding	Favorable	Favorable
BOP: Borrow Pits-----	---	---	---	---
Cc: Campus-----	Limitation: slope deep to water	Limitation: depth to rock slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Canlon-----	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Cd: Canadian-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Cf: Darr-----	Limitation: deep to water	Limitation: soil blowing droughty	Limitation: soil blowing	Limitation: droughty
Cr: Carwile-----	Limitation: percs slowly	Limitation: percs slowly wetness soil blowing	Limitation: erodes easily wetness soil blowing	Limitation: erodes easily percs slowly rooting depth
Cs: Carwile-----	Limitation: percs slowly	Limitation: percs slowly wetness soil blowing	Limitation: erodes easily wetness soil blowing	Limitation: erodes easily percs slowly rooting depth
Drummond-----	Limitation: excess sodium percs slowly	Limitation: percs slowly wetness droughty	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily excess sodium droughty
Fa: Farnum-----	Limitation: deep to water	Favorable	Favorable	Favorable
Fr: Farnum-----	Limitation: deep to water	Favorable	Favorable	Favorable
Ha: Harney-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Hb: Harney-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Hc: Harney-----	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
Hd: Harney-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Uly-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
He: Harney-----	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
Uly-----	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
Hg: Holdrege-----	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Hh: Holdrege-----	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
Ho: Hord-----	Limitation: deep to water	Favorable	Favorable	Favorable
La: Las Animas-----	Limitation: flooding	Limitation: fast intake wetness soil blowing	Limitation: wetness soil blowing	Favorable
Lh: Lesho-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness	Limitation: too sandy wetness	Favorable

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Lk: Lubbock-----	Limitation: deep to water	Favorable	Favorable	Favorable
Na: Naron-----	Limitation: deep to water	Limitation: fast intake soil blowing	Limitation: soil blowing	Favorable
Nf: Naron-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Ng: Naron-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Ns: Ness-----	Limitation: percs slowly	Limitation: percs slowly slow intake wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
Pa: Platte-----	Limitation: flooding cutbanks cave	Limitation: rooting depth wetness droughty	Limitation: too sandy wetness	Limitation: rooting depth wetness droughty
Pe: Plevna-----	Limitation: flooding	Limitation: flooding wetness soil blowing	Limitation: wetness soil blowing	Limitation: wetness
Pf: Pratt-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing	Limitation: droughty
Pg: Pratt-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
Pr: Pratt-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
Lincoln-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
PRR: Pratt-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
PSS: Pratt-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing	Limitation: droughty
Pt: Pratt-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing	Limitation: droughty
Tivoli-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
SAP: Sand Pit-----	---	---	---	---
Ta: Tabler-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
Tb: Tabler-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
Drummond-----	Limitation: excess sodium percs slowly	Limitation: percs slowly wetness droughty	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily excess sodium droughty

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Tf: Tivoli-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
To: Tobin-----	Limitation: deep to water	Limitation: flooding	Favorable	Favorable
W: Water-----	---	---	---	---
Wa: Waldeck-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness soil blowing	Limitation: too sandy wetness soil blowing	Favorable
Wc: Waldeck-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness	Limitation: too sandy wetness	Favorable
Za: Zenda-----	Limitation: flooding	Limitation: flooding wetness	Limitation: wetness	Favorable
Ze: Lesho-----	Limitation: excess salt flooding	Limitation: excess salt flooding wetness	Limitation: wetness	Limitation: excess salt
Zs: Zenda-----	Limitation: flooding	Limitation: flooding wetness	Limitation: wetness	Favorable
Drummond-----	Limitation: excess sodium percs slowly	Limitation: percs slowly wetness droughty	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily excess sodium droughty

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.60	Very limited Deep to water	1.00
057LA: Las Animas, occasionally flooded-----	100	Very limited Seepage	 1.00	Very limited Seepage Depth to saturated zone	 1.00 0.95	Very limited Cutbanks cave Deep to water	 1.00 0.02
057LC: Las Animas-----	80	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 0.95	Very limited Cutbanks cave Deep to water	1.00 0.02
Lincoln-----	20	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Deep to water	1.00
097AT: Attica-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.09	Very limited Deep to water	1.00
097AX: Attica-----	60	Very limited Seepage	1.00	Somewhat limited Seepage	0.09	Very limited Deep to water	1.00
Carwile-----	40	Somewhat limited Seepage	0.57	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Cutbanks cave	0.30 0.10
097TH: Tivoli-----	100	Very limited Seepage Slope	1.00 0.12	Somewhat limited Seepage	0.99	Very limited Deep to water	1.00
145HC: Harney-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
145HD: Harney-----	70	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
Uly-----	30	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
145RO: Roxbury-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.54	Very limited Deep to water	1.00
145UC: Uly-----	100	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
151KP: Kanza-----	50	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.98	Very limited Cutbanks cave	1.00
Plevna-----	50	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 1.00	Very limited Cutbanks cave	1.00
185PR: Pratt-----	60	Very limited Seepage	1.00	Somewhat limited Seepage	0.57	Very limited Deep to water	1.00
Carwile-----	40	Somewhat limited Seepage	0.57	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.02	Somewhat limited Slow refill Cutbanks cave	0.30 0.10

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Aa: Attica-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.72	Very limited Deep to water	1.00
Ab: Attica-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.72	Very limited Deep to water	1.00
Ac: Attica-----	75	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.72	Very limited Cutbanks cave	1.00
Carwile-----	25	Somewhat limited Seepage	0.57	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Cutbanks cave	0.30 0.10
ARR: Arkansas River-----	100	Not rated		Not rated		Not rated	
Bk: Coly-----	75	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
Tobin-----	25	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.55	Very limited Deep to water	1.00
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	
Cc: Campus-----	75	Somewhat limited Depth to bedrock Seepage Slope	0.98 0.70 0.00	Somewhat limited Thin layer Piping	0.98 0.68	Very limited Deep to water	1.00
Canlon-----	25	Very limited Seepage Depth to bedrock Slope	1.00 1.00 0.00	Very limited Thin layer Piping	1.00 0.92	Very limited Deep to water	1.00
Cd: Canadian-----	100	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.09	Very limited Deep to water	1.00
Cf: Darr-----	100	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.07	Very limited Deep to water	1.00
Cr: Carwile-----	100	Somewhat limited Seepage	0.57	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Cutbanks cave	0.30 0.10
Cs: Carwile-----	90	Somewhat limited Seepage	0.57	Very limited Ponding Depth to saturated zone	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.30 0.10
Drummond-----	10	Not limited		Very limited Piping	1.00	Very limited Slow refill Deep to water Cutbanks cave Salty water	1.00 0.81 0.10 0.01
Fa: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping Seepage	0.57 0.06	Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Fr: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.40	Very limited Deep to water	1.00
Ha: Harney-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.00	Very limited Deep to water	1.00
Hb: Harney-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.00	Very limited Deep to water	1.00
Hc: Harney-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.00	Very limited Deep to water	1.00
Hd: Harney-----	80	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.00	Very limited Deep to water	1.00
Uly-----	20	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
He: Harney-----	70	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.00	Very limited Deep to water	1.00
Uly-----	30	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
Hg: Holdrege-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.22	Very limited Deep to water	1.00
Hh: Holdrege-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.77	Very limited Deep to water	1.00
Ho: Hord-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.58	Very limited Deep to water	1.00
La: Las Animas-----	100	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 0.95	Very limited Cutbanks cave Deep to water	1.00 0.02
Lh: Lesho-----	100	Very limited Seepage	1.00	Somewhat limited Seepage Depth to saturated zone	1.00 0.43	Very limited Cutbanks cave Deep to water	1.00 0.25
Lk: Lubbock-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
Na: Naron-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.62	Very limited Deep to water	1.00
Nf: Naron-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.07	Very limited Deep to water	1.00
Ng: Naron-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.07	Very limited Deep to water	1.00
Ns: Ness-----	100	Somewhat limited Seepage	0.43	Very limited Ponding Depth to saturated zone	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.57 0.10
Pa: Platte-----	100	Very limited Seepage	1.00	Very limited Depth to saturated zone	1.00	Very limited Cutbanks cave	1.00

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pe: Plevna-----	100	Very limited Seepage	1.00	Seepage Very limited Depth to saturated zone Seepage	0.97 1.00 0.09	Somewhat limited Cutbanks cave	0.10
Pf: Pratt-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.57	Very limited Deep to water	1.00
Pg: Pratt-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.57	Very limited Deep to water	1.00
Pr: Pratt-----	65	Very limited Seepage	1.00	Somewhat limited Seepage	0.57	Very limited Deep to water	1.00
Lincoln-----	35	Very limited Seepage	1.00	Somewhat limited Seepage	0.39	Very limited Deep to water	1.00
PRR: Pratt-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.57	Very limited Deep to water	1.00
PSS: Pratt-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.57	Very limited Deep to water	1.00
Pt: Pratt-----	65	Very limited Seepage	1.00	Somewhat limited Seepage	0.57	Very limited Deep to water	1.00
Tivoli-----	35	Very limited Seepage	1.00	Somewhat limited Seepage	0.99	Very limited Deep to water	1.00
SAP: Sand Pit-----	100	Not rated		Not rated		Not rated	
Ta: Tabler-----	100	Not limited		Somewhat limited Hard to pack	0.17	Very limited Deep to water	1.00
Tb: Tabler-----	90	Not limited		Somewhat limited Hard to pack	0.17	Very limited Deep to water	1.00
Drummond-----	10	Not limited		Not limited		Somewhat limited Deep to water Cutbanks cave Salty water	0.81 0.10 0.01
Tf: Tivoli-----	100	Very limited Seepage Slope	1.00 0.03	Somewhat limited Seepage	0.99	Very limited Deep to water	1.00
To: Tobin-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.55	Very limited Deep to water	1.00
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 0.43	Very limited Cutbanks cave Deep to water	1.00 0.25
Wc: Waldeck-----	100	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Cutbanks cave	1.00

WATER MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer- fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Za: Zenda-----	100	Somewhat limited Seepage	0.70	Depth to saturated zone	0.43	Deep to water	0.25
				Somewhat limited Depth to saturated zone Piping	0.43	Somewhat limited Slow refill	0.30
					0.15	Deep to water Cutbanks cave	0.25 0.10
Ze: Lesho-----	100	Very limited Seepage	1.00	Very limited Seepage Piping Depth to saturated zone Salinity	1.00	Very limited Cutbanks cave Salty water Deep to water	1.00
					0.69		0.50
					0.43		0.25
Zs: Zenda-----	85	Somewhat limited Seepage	0.70	Somewhat limited Depth to saturated zone Piping	0.12	Somewhat limited Slow refill Deep to water Cutbanks cave	0.30 0.25 0.10
					0.43		
					0.15		
Drummond-----	15	Not limited		Very limited Piping	1.00	Very limited Slow refill Deep to water Cutbanks cave Salty water	1.00 0.81 0.10 0.01

SANITARY FACILITIES
Edwards County, Kansas

Sanitary Facilities

The following tables show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A trench sanitary landfill is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

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In an area sanitary landfill, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

SANITARY FACILITIES--Continued
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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Very limited Flooding Restricted permeability	1.00 0.50	Very limited Flooding Seepage	1.00 0.50
057LA: Las Animas, occasionally flooded-----	100	Very limited Flooding Depth to saturated zone Filtering capacity	 1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	 1.00 1.00 1.00
057LC: Las Animas-----	80	Very limited Flooding Depth to saturated zone Filtering capacity	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
Lincoln-----	20	Very limited Flooding Filtering capacity Depth to saturated zone	1.00 1.00 0.08	Very limited Flooding Seepage	1.00 1.00
097AT: Attica-----	100	Not limited		Very limited Seepage Slope	1.00 0.09
097AX: Attica-----	60	Not limited		Very limited Seepage Slope	1.00 0.09
Carwile-----	40	Very limited Restricted permeability Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.32
097TH: Tivoli-----	100	Very limited Slope Filtering capacity	1.00 1.00	Very limited Slope Seepage	1.00 1.00
145HC: Harney-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage Slope	0.50 0.00
145HD: Harney-----	70	Very limited Restricted permeability	1.00	Somewhat limited Slope Seepage	0.67 0.50
Uly-----	30	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope Seepage	0.67 0.50
145RO: Roxbury-----	100	Very limited Flooding Restricted permeability	1.00 0.50	Very limited Flooding Seepage	1.00 0.50
145UC: Uly-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope Seepage	0.67 0.50
151KP: Kanza-----	50	Very limited Flooding Depth to saturated zone Filtering capacity	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
Plevna-----	50	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Seepage	1.00 1.00

SANITARY FACILITIES--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
185PR: Pratt-----	60	Very limited Filtering capacity	1.00	Depth to saturated zone	1.00
Carwile-----	40	Very limited Restricted permeability	1.00	Slope	0.67
		Ponding	1.00	Very limited Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
Aa: Attica-----	100	Not limited		Seepage	0.32
Ab: Attica-----	100	Not limited		Very limited Seepage	1.00
Ac: Attica-----	75	Very limited Depth to saturated zone	1.00	Slope	1.00
Carwile-----	25	Very limited Restricted permeability	1.00	Seepage	0.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
ARR: Arkansas River-----	100	Not rated		Seepage	0.32
Bk: Coly-----	75	Somewhat limited Restricted permeability	0.50	Not rated	
		Slope	0.00	Very limited Slope	1.00
Tobin-----	25	Very limited Flooding	1.00	Seepage	0.50
		Restricted permeability	0.50	Very limited Flooding	1.00
BOP: Borrow Pits-----	100	Not rated		Seepage	0.50
Cc: Campus-----	75	Very limited Depth to bedrock	1.00	Not rated	
		Restricted permeability	0.50	Very limited Depth to hard bedrock	1.00
		Slope	0.37	Slope	1.00
Canlon-----	25	Very limited Depth to bedrock	1.00	Seepage	0.50
		Slope	0.37	Very limited Depth to hard bedrock	1.00
Cd: Canadian-----	100	Very limited Filtering capacity	1.00	Slope	1.00
		Flooding	0.40	Very limited Seepage	1.00
Cf: Darr-----	100	Very limited Filtering capacity	1.00	Flooding	0.40
		Flooding	0.40	Very limited Seepage	1.00
Cr: Carwile-----	100	Very limited Restricted permeability	1.00	Flooding	0.40
		Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Cs: Carwile-----	90	Very limited		Seepage	0.32

SANITARY FACILITIES--Continued
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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Drummond-----	10	Restricted permeability	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.32
		Very limited Restricted permeability	1.00	Somewhat limited Depth to saturated zone	0.71
Fa: Farnum-----	100	Depth to saturated zone	1.00		
Fr: Farnum-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
Ha: Harney-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
				Slope	0.00
Hb: Harney-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage	0.50
Hc: Harney-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage	0.50
				Slope	0.00
Hd: Harney-----	80	Very limited Restricted permeability	1.00	Somewhat limited Slope	0.67
				Seepage	0.50
Uly-----	20	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope	0.00
				Seepage	0.50
He: Harney-----	70	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope	0.67
				Seepage	0.50
Hg: Holdrege-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope	0.67
				Seepage	0.50
Hh: Holdrege-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Slope	0.67
				Seepage	0.50
Ho: Hord-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
		Flooding	0.40	Flooding	0.40
La: Las Animas-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
Lh: Lesho-----	100	Filtering capacity	1.00	Depth to saturated zone	1.00
		Very limited Flooding	1.00	Very limited Flooding	1.00
		Restricted permeability	1.00	Seepage	1.00

SANITARY FACILITIES--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00		
Lk: Lubbock-----	100	Very limited Restricted permeability	1.00	Somewhat limited Seepage	0.50
Na: Naron-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
Nf: Naron-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
Ng: Naron-----	100	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage	0.50
Ns: Ness-----	100	Very limited Restricted permeability	1.00	Slope	0.00
		Ponding	1.00	Very limited Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
Pa: Platte-----	100	Very limited Flooding	1.00	Depth to saturated zone	0.18
		Depth to saturated zone	1.00	Very limited Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
Pe: Plevna-----	100	Very limited Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Very limited Flooding	1.00
				Seepage	1.00
Pf: Pratt-----	100	Very limited Filtering capacity	1.00	Depth to saturated zone	1.00
				Very limited Seepage	1.00
Pg: Pratt-----	100	Very limited Filtering capacity	1.00	Slope	1.00
				Very limited Seepage	1.00
Pr: Pratt-----	65	Very limited Filtering capacity	1.00	Slope	0.09
				Very limited Seepage	1.00
Lincoln-----	35	Very limited Flooding	1.00	Slope	0.00
		Filtering capacity	1.00	Very limited Flooding	1.00
		Depth to saturated zone	0.08	Seepage	1.00
PRR: Pratt-----	100	Very limited Filtering capacity	1.00	Slope	0.00
				Very limited Seepage	1.00
PSS: Pratt-----	100	Very limited Filtering capacity	1.00	Slope	0.09
		Slope	0.00	Very limited Seepage	1.00
Pt: Pratt-----	65	Very limited Filtering capacity	1.00	Slope	1.00
		Slope	0.00	Very limited Seepage	1.00
Tivoli-----	35	Very limited		Slope	1.00
				Very limited	

SANITARY FACILITIES--Continued
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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
SAP: Sand Pit-----	100	Not rated		Not rated	
Ta: Tabler-----	100	Very limited Restricted permeability	1.00	Not limited	
Tb: Tabler-----	90	Very limited Restricted permeability	1.00	Not limited	
Drummond-----	10	Very limited Restricted permeability	1.00	Somewhat limited Depth to saturated zone	0.71
		Depth to saturated zone	1.00		
Tf: Tivoli-----	100	Very limited Filtering capacity	1.00	Very limited Slope	1.00
		Slope	1.00	Seepage	1.00
To: Tobin-----	100	Very limited Flooding Restricted permeability	1.00 0.50	Very limited Flooding Seepage	1.00 0.50
W: Water-----	100	Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
Wc: Waldeck-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
Za: Zenda-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
Ze: Lesho-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
Zs: Zenda-----	85	Very limited Flooding	1.00	Very limited Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
Drummond-----	15	Very limited Restricted permeability	1.00	Somewhat limited Depth to saturated zone	0.71
		Depth to saturated zone	1.00		

SANITARY FACILITIES--Continued
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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Not limited	
057LA: Las Animas, occasionally flooded-----	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too Sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Depth to saturated zone	0.68
		Too Sandy	1.00				
057LC: Las Animas-----	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too Sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Depth to saturated zone	0.68
		Too Sandy	1.00				
Lincoln-----	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too Sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00		
		Too Sandy	1.00				
097AT: Attica-----	100	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.50
097AX: Attica-----	60	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.50
Carwile-----	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
097TH: Tivoli-----	100	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Too Sandy	1.00
		Too Sandy	1.00	Slope	1.00	Seepage	1.00
		Slope	1.00			Slope	1.00
145HC: Harney-----	100	Somewhat limited		Not limited		Very limited	
		Too clayey	0.50			Hard to compact	1.00
						Too clayey	0.50
145HD: Harney-----	70	Somewhat limited		Not limited		Very limited	
		Too clayey	0.50			Hard to compact	1.00
						Too clayey	0.50
Uly-----	30	Not limited		Not limited		Not limited	
145RO: Roxbury-----	100	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
145UC: Uly-----	100	Not limited		Not limited		Not limited	
151KP: Kanza-----	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too Sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Depth to saturated zone	1.00
		Too Sandy	1.00				
Plevna-----	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.50
		Seepage	1.00	Seepage	1.00		
185PR: Pratt-----	60	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too Sandy	1.00			Too Sandy	0.50
Carwile-----	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Hard to compact	1.00
						Too clayey	0.50

SANITARY FACILITIES--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Aa: Attica-----	100	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Somewhat limited Seepage Too Sandy	0.50 0.50
Ab: Attica-----	100	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Somewhat limited Seepage Too Sandy	0.50 0.50
Ac: Attica-----	75	Very limited Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Depth to saturated zone Seepage Too Sandy	1.00 0.50 0.50
Carwile-----	25	Very limited Depth to saturated zone Too clayey	1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey Hard to compact	1.00 1.00 1.00
ARR: Arkansas River-----	100	Not rated		Not rated		Not rated	
Bk: Coly-----	75	Somewhat limited Too clayey Slope	0.50 0.00	Somewhat limited Slope	0.00	Somewhat limited Too clayey Slope	0.50 0.00
Tobin-----	25	Very limited Flooding Too clayey	1.00 0.50	Very limited Flooding	1.00	Somewhat limited Too clayey	0.50
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	
Cc: Campus-----	75	Very limited Depth to bedrock Seepage Too clayey Slope	1.00 1.00 0.50 0.37	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.37
Canlon-----	25	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.37	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Slope	1.00 0.37
Cd: Canadian-----	100	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage Flooding	1.00 0.40	Somewhat limited Seepage	0.50
Cf: Darr-----	100	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage	1.00
Cr: Carwile-----	100	Very limited Depth to saturated zone Too clayey	1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey Hard to compact	1.00 1.00 1.00
Cs: Carwile-----	90	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey Hard to compact	1.00 1.00 1.00 1.00
Drummond-----	10	Very limited Depth to saturated zone Sodium content Too clayey	1.00 1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Sodium content Too clayey Hard to compact	1.00 1.00 1.00
Fa: Farnum-----	100	Not limited		Not limited		Not limited	
Fr: Farnum-----	100	Not limited		Not limited		Not limited	
Ha: Harney-----	100	Not limited		Not limited		Not limited	
Hb: Harney-----	100	Not limited		Not limited		Not limited	
Hc: Harney-----	100	Not limited		Not limited		Not limited	
Hc: Harney-----	100	Not limited		Not limited		Not limited	

SANITARY FACILITIES--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Hd:							
Harney-----	80	Not limited		Not limited		Not limited	
Uly-----	20	Not limited		Not limited		Not limited	
He:							
Harney-----	70	Not limited		Not limited		Not limited	
Uly-----	30	Not limited		Not limited		Not limited	
Hg:							
Holdrege-----	100	Somewhat limited Too clayey	0.50	Not limited		Very limited Hard to compact Too clayey	1.00 0.50
Hh:							
Holdrege-----	100	Not limited		Not limited		Not limited	
Ho:							
Hord-----	100	Somewhat limited Too clayey Flooding	0.50 0.40	Somewhat limited Flooding	0.40	Somewhat limited Too clayey	0.50
La:							
Las Animas-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Somewhat limited Depth to saturated zone Seepage	0.68 0.50
Lh:							
Lesho-----	100	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
Lk:							
Lubbock-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Na:							
Naron-----	100	Not limited		Not limited		Not limited	
Nf:							
Naron-----	100	Not limited		Not limited		Not limited	
Ng:							
Naron-----	100	Not limited		Not limited		Not limited	
Ns:							
Ness-----	100	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Hard to compact	1.00 1.00 1.00
Pa:							
Platte-----	100	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 1.00
Pe:							
Plevna-----	100	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.50
Pf:							
Pratt-----	100	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Seepage Too Sandy	1.00 0.50
Pg:							
Pratt-----	100	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Seepage Too Sandy	1.00 0.50
Pr:							
Pratt-----	65	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Seepage Too Sandy	1.00 0.50
Lincoln-----	35	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage	1.00 1.00

SANITARY FACILITIES--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
PRR: Pratt-----	100	Very limited Seepage Too Sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Seepage Too Sandy	1.00 0.50
PSS: Pratt-----	100	Very limited Seepage Too Sandy Slope	1.00 1.00 0.00	Very limited Seepage Slope	1.00 0.00	Very limited Seepage Too Sandy Slope	1.00 0.50 0.00
Pt: Pratt-----	65	Very limited Seepage Too Sandy Slope	1.00 1.00 0.00	Very limited Seepage Slope	1.00 0.00	Very limited Seepage Too Sandy Slope	1.00 0.50 0.00
Tivoli-----	35	Very limited Seepage Too Sandy Slope	1.00 1.00 0.16	Very limited Seepage Slope	1.00 0.16	Very limited Too Sandy Seepage Slope	1.00 1.00 0.16
SAP: Sand Pit-----	100	Not rated		Not rated		Not rated	
Ta: Tabler-----	100	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Tb: Tabler-----	90	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
Drummond-----	10	Very limited Depth to saturated zone Too clayey Seepage	1.00 1.00 1.00	Very limited Depth to saturated zone	1.00	Very limited Too clayey Hard to compact	1.00 1.00
Tf: Tivoli-----	100	Very limited Seepage Too Sandy Slope	1.00 1.00 1.00	Very limited Seepage Slope	1.00 1.00	Very limited Too Sandy Seepage Slope	1.00 1.00 1.00
To: Tobin-----	100	Very limited Flooding Too clayey	1.00 0.50	Very limited Flooding	1.00	Somewhat limited Too clayey	0.50
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
Wc: Waldeck-----	100	Very limited Flooding Depth to saturated zone Seepage Too Sandy	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Too Sandy Seepage Depth to saturated zone	1.00 1.00 0.09
Za: Zenda-----	100	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.09
Ze: Lesho-----	100	Very limited Flooding Depth to saturated zone Seepage Too clayey	1.00 1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.09
Zs: Zenda-----	85	Very limited Flooding Depth to saturated zone Too clayey	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.09
Drummond-----	15	Very limited		Very limited		Very limited	

SANITARY FACILITIES--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Sodium content	1.00
		Sodium content	1.00			Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00

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The nature of the soil is also important in the application of organic wastes and wastewater to land as fertilizers and irrigation; it is also important when the soil is used as a medium for treatment and disposal of these wastes. Favorable soil properties are required to prevent environmental damage.

The use of organic wastes and wastewater as production resources will result in energy conservation, prevent the waste of these important resources, and prevent problems associated with their disposal. Where disposal is the goal, and a maximum amount is disposed in a minimum area to hold costs to a minimum, risk of environmental damage is the principal constraint. Where the reuse goal is pursued, and a minimum amount is applied to a maximum area to obtain the greatest benefit, environmental damage is unlikely.

Interpretations developed for waste management may include ratings for (1) manure and food processing wastes; (2) municipal sewage sludge; (3) irrigation use of wastewater; or (4) treatment of wastewater by the slow rate process, overland flow process, or rapid infiltration process. If available, these should be located in this subsection.

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

The Ag-Waste tables show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, phosphorus, heavy metals, and salts are not added in excessive amounts.

The ratings in the tables are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are generally favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

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The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding.

The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

See the National Soil Handbook, September 1992, Part 620, for criteria used in rating soils for sanitary facilities and waste management.

AGRICULTURAL WASTE MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
057AN: Roxbury-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
057LA: Las Animas, occasionally flooded-----	100	Very limited		Very limited		Very limited	
		Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
		Depth to saturated zone	0.95	Flooding	1.00	Depth to saturated zone	0.95
057LC: Las Animas-----	80	Flooding	0.60	Depth to saturated zone	0.95	Flooding	0.60
		Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Depth to saturated zone	0.95	Flooding	1.00	Depth to saturated zone	0.95
Lincoln-----	20	Flooding	0.60	Depth to saturated zone	0.95	Flooding	0.60
		Leaching limitation	0.45	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Flooding	0.60	Flooding	1.00	Flooding	0.60
097AT: Attica-----	100	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity Too steep for surface application	0.00
097AX: Attica-----	60	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity Too steep for surface application	0.00
Carwile-----	40	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Runoff limitation Too acid	0.40 0.02	Too acid	0.07	Too acid	0.07
097TH: Tivoli-----	100	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Too steep for surface application	1.00
		Filtering capacity	1.00	Filtering capacity	1.00	Too steep for sprinkler application	1.00
		Droughty	1.00	Droughty	1.00	Filtering capacity	1.00
		Leaching limitation	0.45			Droughty	1.00
145HC: Harney-----	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
145HD: Harney-----	70	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Too steep for surface application	0.31
						Restricted permeability	0.22
Uly-----	30	Not limited		Not limited		Somewhat limited Too steep for surface application	0.31
145RO: Roxbury-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00

AGRICULTURAL WASTE MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
145UC: Uly-----	100	Not limited		Not limited		Somewhat limited Too steep for surface application	0.31
151KP: Kanza-----	50	Very limited Flooding 1.00 Depth to 1.00 saturated zone Filtering 1.00 capacity Droughty 0.82 Runoff limitation 0.40		Very limited Flooding 1.00 Depth to 1.00 saturated zone Filtering 1.00 capacity Droughty 0.82 Too acid 0.14		Very limited Flooding 1.00 Depth to 1.00 saturated zone Filtering 1.00 capacity Droughty 0.82 Too acid 0.14	
Plevna-----	50	Very limited Flooding 1.00 Depth to 1.00 saturated zone Runoff limitation 0.40 Filtering 0.00 capacity		Very limited Flooding 1.00 Depth to 1.00 saturated zone Filtering 0.00 capacity		Very limited Flooding 1.00 Depth to 1.00 saturated zone Filtering 0.00 capacity	
185PR: Pratt-----	60	Very limited Filtering 1.00 capacity Leaching 0.45 limitation		Very limited Filtering 1.00 capacity		Very limited Filtering 1.00 capacity Too steep for surface application 0.31	
Carwile-----	40	Very limited Ponding 1.00 Depth to 1.00 saturated zone Restricted 1.00 permeability Runoff limitation 0.40 Too acid 0.02		Very limited Ponding 1.00 Depth to 1.00 saturated zone Restricted 1.00 permeability Too acid 0.07		Very limited Ponding 1.00 Depth to 1.00 saturated zone Restricted 1.00 permeability Too acid 0.07	
Aa: Attica-----	100	Somewhat limited Filtering 0.00 capacity		Somewhat limited Filtering 0.00 capacity		Somewhat limited Filtering 0.00 capacity	
Ab: Attica-----	100	Somewhat limited Filtering 0.00 capacity		Somewhat limited Filtering 0.00 capacity		Somewhat limited Filtering 0.00 capacity	
Ac: Attica-----	75	Very limited Depth to 1.00 saturated zone Filtering 0.00 capacity		Very limited Depth to 1.00 saturated zone Filtering 0.00 capacity		Very limited Depth to 1.00 saturated zone Filtering 0.00 capacity	
Carwile-----	25	Very limited Depth to 1.00 saturated zone Restricted 1.00 permeability Runoff limitation 0.40 Too acid 0.02		Very limited Depth to 1.00 saturated zone Restricted 1.00 permeability Too acid 0.07		Very limited Depth to 1.00 saturated zone Restricted 1.00 permeability Too acid 0.07	
ARR: Arkansas River-----	100	Not rated		Not rated		Not rated	
Bk: Coly-----	75	Somewhat limited Slope 0.00		Somewhat limited Slope 0.00		Very limited Too steep for surface application 1.00 Too steep for sprinkler application 0.10	
Tobin-----	25	Somewhat limited Flooding 0.60		Very limited Flooding 1.00		Somewhat limited Flooding 0.60	
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	

AGRICULTURAL WASTE MANAGEMENT--Continued
Edwards County, Kansas

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Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Cc: Campus-----	75	Somewhat limited Depth to bedrock	0.90	Somewhat limited Depth to bedrock	0.90	Very limited Too steep for surface application	1.00
		Droughty Slope	0.46 0.37	Droughty Slope	0.46 0.37	Depth to bedrock Too steep for sprinkler application	0.90 0.59
						Droughty	0.46
Canlon-----	25	Very limited Depth to bedrock	1.00	Very limited Droughty	1.00	Very limited Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Runoff limitation	0.40	Slope	0.37	Too steep for surface application	1.00
		Slope	0.37			Too steep for sprinkler application	0.59
Cd: Canadian-----	100	Somewhat limited Filtering capacity	0.00	Somewhat limited Flooding	0.40	Somewhat limited Filtering capacity	0.00
				Filtering capacity	0.00		
Cf: Darr-----	100	Somewhat limited Filtering capacity	0.00	Somewhat limited Flooding	0.40	Somewhat limited Filtering capacity	0.00
				Filtering capacity	0.00		
Cr: Carwile-----	100	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Runoff limitation	0.40	Too acid	0.07	Too acid	0.07
		Too acid	0.02				
Cs: Carwile-----	90	Very limited Ponding	1.00	Very limited Ponding	1.00	Very limited Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Runoff limitation	0.40	Too acid	0.07	Too acid	0.07
		Too acid	0.02				
Drummond-----	10	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Runoff limitation	0.40				
		Salinity	0.01				
Fa: Farnum-----	100	Not limited		Not limited		Not limited	
Fr: Farnum-----	100	Not limited		Not limited		Not limited	
Ha: Harney-----	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
Hb: Harney-----	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
Hc: Harney-----	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Too steep for surface application	0.31
						Restricted permeability	0.22
Hd: Harney-----	80	Somewhat limited		Somewhat limited		Somewhat limited	

AGRICULTURAL WASTE MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Uly-----	20	Restricted permeability Not limited	0.30	Restricted permeability Not limited	0.22	Restricted permeability Not limited	0.22
He: Harney-----	70	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Too steep for surface application Restricted permeability Somewhat limited Too steep for surface application	0.31 0.22 0.31
Uly-----	30	Not limited		Not limited		Too steep for surface application	0.31
Hg: Holdrege-----	100	Not limited		Not limited		Not limited	
Hh: Holdrege-----	100	Not limited		Not limited		Somewhat limited Too steep for surface application	0.31
Ho: Hord-----	100	Not limited		Somewhat limited Flooding	0.40	Not limited	
La: Las Animas-----	100	Very limited Filtering capacity Depth to saturated zone Flooding	1.00 0.95 0.60	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 1.00 0.95	Very limited Filtering capacity Depth to saturated zone Flooding	1.00 0.95 0.60
Lh: Lesho-----	100	Somewhat limited Flooding Depth to saturated zone Restricted permeability Filtering capacity	0.60 0.43 0.30 0.00	Very limited Flooding Depth to saturated zone Restricted permeability Filtering capacity	1.00 0.43 0.22 0.00	Somewhat limited Flooding Depth to saturated zone Restricted permeability Filtering capacity	0.60 0.43 0.22 0.00
Lk: Lubbock-----	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
Na: Naron-----	100	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00
Nf: Naron-----	100	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00
Ng: Naron-----	100	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00	Somewhat limited Filtering capacity	0.00
Ns: Ness-----	100	Very limited Restricted permeability Ponding Depth to saturated zone Runoff limitation	1.00 1.00 1.00 0.40	Very limited Restricted permeability Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Restricted permeability Ponding Depth to saturated zone	1.00 1.00 1.00
Pa: Platte-----	100	Very limited Filtering capacity Depth to saturated zone Droughty Flooding	1.00 1.00 0.93 0.60	Very limited Filtering capacity Flooding Depth to saturated zone Droughty	1.00 1.00 1.00 0.93	Very limited Filtering capacity Depth to saturated zone Droughty Flooding	1.00 1.00 0.93 0.60
Pe: Plevna-----	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00

AGRICULTURAL WASTE MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pf: Pratt-----	100	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Runoff limitation	0.40	Filtering capacity	0.00	Filtering capacity	0.00
		Filtering capacity	0.00				
		Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
Pg: Pratt-----	100	Leaching limitation	0.45			Too steep for surface application	0.91
						Too steep for sprinkler application	0.02
		Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Leaching limitation	0.45			Too steep for surface application	0.00
Pr: Pratt-----	65	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Leaching limitation	0.45				
		Very limited Filtering capacity	1.00	Very limited Flooding	1.00	Very limited Filtering capacity	1.00
		Droughty	0.99	Filtering capacity	1.00	Droughty	0.99
Lincoln-----	35	Flooding Leaching limitation	0.60 0.45	Droughty	0.99	Flooding	0.60
		Very limited Filtering capacity	1.00				
		Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Leaching limitation	0.45			Too steep for surface application	0.00
PRR: Pratt-----	100	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Leaching limitation	0.45			Too steep for surface application	0.00
		Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Leaching limitation	0.45			Too steep for surface application	0.00
PSS: Pratt-----	100	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Leaching limitation	0.45	Slope	0.00	Too steep for surface application	1.00
		Slope	0.00			Too steep for sprinkler application	0.10
Pt: Pratt-----	65	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00
		Leaching limitation	0.45	Slope	0.00	Too steep for surface application	1.00
		Slope	0.00			Too steep for sprinkler application	0.10
Tivoli-----	35	Very limited Filtering capacity	1.00	Very limited Filtering capacity	1.00	Very limited Too steep for surface application	1.00
		Droughty	0.98	Droughty	0.98	Filtering capacity	1.00
		Leaching limitation	0.45	Slope	0.16	Droughty	0.98
		Slope	0.16			Too steep for sprinkler application	0.39
SAP: Sand Pit-----	100	Not rated		Not rated		Not rated	

AGRICULTURAL WASTE MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ta: Tabler-----	100	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
Tb: Tabler-----	90	Very limited Restricted permeability Runoff limitation	1.00 0.40	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
Drummond-----	10	Very limited Restricted permeability Droughty Runoff limitation Salinity	1.00 0.73 0.40 0.01	Very limited Restricted permeability Droughty	1.00 0.73	Very limited Restricted permeability Droughty	1.00 0.73
Tf: Tivoli-----	100	Very limited Filtering capacity Slope	1.00 1.00	Very limited Filtering capacity Slope	1.00 1.00	Very limited Filtering capacity Too steep for surface application	1.00 1.00
		Droughty	1.00	Droughty	1.00	Too steep for sprinkler application	1.00
		Leaching limitation	0.45			Droughty	1.00
To: Tobin-----	100	Somewhat limited Flooding	0.60	Very limited Flooding	1.00	Somewhat limited Flooding	0.60
W: Water-----	100	Not rated		Not rated		Not rated	
Wa: Waldeck-----	100	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 0.60 0.43	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 1.00 0.43	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 0.60 0.43
Wc: Waldeck-----	100	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 0.60 0.43	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 1.00 0.43	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 0.60 0.43
Za: Zenda-----	100	Somewhat limited Flooding Depth to saturated zone	0.60 0.43	Very limited Flooding Depth to saturated zone	1.00 0.43	Somewhat limited Flooding Depth to saturated zone	0.60 0.43
Ze: Lesho-----	100	Very limited Filtering capacity Flooding Salinity	1.00 0.60 0.50	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 1.00 0.43	Very limited Filtering capacity Flooding Depth to saturated zone	1.00 0.60 0.43
		Depth to saturated zone	0.43	Sodium content	0.32	Sodium content	0.32
		Sodium content	0.32	Restricted permeability	0.22	Restricted permeability	0.22
Zs: Zenda-----	85	Somewhat limited Flooding Depth to saturated zone	0.60 0.43	Very limited Flooding Depth to saturated zone	1.00 0.43	Somewhat limited Flooding Depth to saturated zone	0.60 0.43
Drummond-----	15	Very limited Restricted permeability Sodium content Runoff limitation	1.00 1.00 0.40	Very limited Restricted permeability Sodium content	1.00 1.00	Very limited Restricted permeability Sodium content	1.00 1.00

AGRICULTURAL WASTE MANAGEMENT--Continued
Edwards County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food- processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Salinity	0.01				

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Edwards County, Kansas: KS047

							SPISP II Ratings		
MUSYM/SEQ#	COMPONENT/TEXTURE/MU%	HYD	KFACT	SURFACE DEPTH	% OM	Leaching (SLP)	Solution Adsorbed		
							Runoff (SSRP)	Runoff (SARP)	
057AN 1	ROXBURY SIL 100%	B	0.32	20"	3.0%	L	I	I	
057LA 1	LAS ANIMAS SL 100%	C	0.24	11"	0.8%	H (w)	H	H	
057LC 1	LAS ANIMAS SL 80%	C	0.24	11"	0.8%	H (w)	H	H	
057LC 2	LINCOLN S 20%	A	0.15	6"	0.8%	H	L	L	
097AT 1	ATTICA LFS 100%	B	0.17	10"	0.8%	H	I	I	
097AX 1	ATTICA LFS 60%	B	0.17	10"	0.8%	H	I	I	
097AX 2	CARWILE FSL 40%	D	0.24	15"	2.0%	H (w)	H	H	
097TH 1	TIVOLI FS 100%	A	0.17	6"	0.5%	H	L	I (s)	
145HC 1	HARNEY SICL 100%	B	0.32	7"	2.5%	I	I	I	
145HD 1	HARNEY SICL 70%	B	0.32	7"	2.0%	I	I	I	
145HD 2	ULY SIL 30%	B	0.32	10"	2.0%	I	I	I	
145RO 1	ROXBURY SIL 100%	B	0.32	14"	3.0%	I	I	I	
145UC 1	ULY SIL 100%	B	0.32	10"	2.0%	I	I	I	
151KP 1	KANZA LFS 50%	D	0.17	11"	2.0%	H (w)	H	H	
151KP 2	PLEVNA FSL 50%	D	0.20	10"	2.5%	H (w)	H	H	
185PR 1	PRATT LFS 60%	A	0.17	8"	0.8%	H	L	L	
185PR 2	CARWILE FSL 40%	D	0.24	7"	2.0%	H (w)	H	H	
Aa 1	ATTICA FSL 100%	B	0.24	11"	0.8%	H	I	I	
Ab 1	ATTICA FSL 100%	B	0.24	11"	0.8%	H	I	I	
Ac 1	ATTICA FSL 75%	B	0.24	11"	0.8%	H (w)	I	I	
ARR 1	ARKANSAS RIVER S 100%	D	0.00	6"	0.1%	H (w)	H	L	
Bk 1	COLY SIL 75%	B	0.43	6"	1.5%	H	I	I	
Bk 2	TOBIN SIL 25%	B	0.32	15"	2.5%	I	I	I	
BOP 1	BORROW PITS 100%		0.00	0"	0.0%	?	?	?	
Cc 1	CAMPUS L 75%	B	0.28	8"	1.5%	I	I	I	
Cc 2	CANLON L 25%	D	0.32	4"	1.3%	V	H	H	
Cd 1	CANADIAN FSL 100%	B	0.20	19"	2.0%	I	I	I	
Cf 1	DARR FSL 100%	B	0.20	19"	2.0%	I	I	I	

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Edwards County, Kansas: KS047

Cr 1	CARWILE FSL 100%	D	0.24	11"	2.0% H (w)	H	H
Cs 1	CARWILE FSL 90%	D	0.24	11"	2.0% H (w)	H	H
Cs 2	DRUMMOND L 10%	D	0.49	8"	0.8% H (w)	H	H
Fa 1	FARNUM L 100%	B	0.28	14"	2.0% I	I	I
Fr 1	FARNUM L 100%	B	0.28	8"	2.0% I	I	I
Ha 1	HARNEY SIL 100%	B	0.32	10"	2.0% I	I	I
Hb 1	HARNEY SIL 100%	B	0.32	10"	2.0% I	I	I
Hc 1	HARNEY SIL 100%	B	0.32	10"	2.0% I	I	I
Hd 1	HARNEY SICL 80%	B	0.32	6"	2.0% I	I	I
Hd 2	ULY SIL 20%	B	0.32	8"	2.0% I	I	I
He 1	HARNEY SICL 70%	B	0.32	6"	2.0% I	I	I
He 2	ULY SIL 30%	B	0.32	8"	2.0% I	I	I
Hg 1	HOLDREGE SIL 100%	B	0.32	11"	2.0% I	I	I
Hh 1	HOLDREGE SIL 100%	B	0.32	10"	2.0% I	I	I
Ho 1	HORD SIL 100%	B	0.32	12"	3.0% I	I	I
La 1	LAS ANIMAS LFS 100%	C	0.17	15"	1.3% H (w)	H	I
Lh 1	LESHO CL 100%	C	0.28	18"	2.0% H (w)	H	H
Lk 1	LUBBOCK SIL 100%	B	0.32	10"	2.0% I	I	I
Na 1	NARON LFS 100%	B	0.17	12"	1.5% I	I	I
Nf 1	NARON FSL 100%	B	0.20	12"	2.0% I	I	I
Ng 1	NARON FSL 100%	B	0.20	12"	2.0% I	I	I
Ns 1	NESS C 100%	D	0.28	31"	2.0% H (w)	H	H
Pa 1	PLATTE L 100%	B	0.28	9"	2.0% H (w)	I	I
Pe 1	PLEVNA FSL 100%	D	0.20	10"	2.5% H (w)	H	H
Pf 1	PRATT LFS 100%	A	0.17	13"	0.8% H	L	L
Pg 1	PRATT LFS 100%	A	0.17	13"	0.8% H	L	L
Pr 1	PRATT LFS 65%	A	0.17	13"	0.8% H	L	L
Pr 2	LINCOLN LFS 35%	A	0.17	5"	0.5% H	L	L
PRR 1	PRATT LFS 100%	A	0.17	12"	0.8% H	L	L
PSS 1	PRATT LFS 100%	A	0.17	8"	0.8% H	L	L

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Edwards County, Kansas: KS047

Pt 1	PRATT LFS 65%	A	0.17	8"	0.8% H	L	L
Pt 2	TIVOLI LFS 35%	A	0.17	6"	0.5% H	L	L
SAP 1	SAND PIT 100%		0.00	0"	0.0% ?	?	?
Ta 1	TABLER CL 100%	D	0.43	8"	2.0% V	H	H
Tb 1	TABLER CL 90%	D	0.43	8"	2.0% V	H	H
Tf 1	TIVOLI FS 100%	A	0.17	8"	0.5% H	L	I (s)
To 1	TOBIN SIL 100%	B	0.32	15"	2.5% I	I	I
W 1	WATER 100%		0.00	0"	0.0% ?	?	?
Wa 1	WALDECK FSL 100%	C	0.20	10"	1.5% H (w)	H	I
Wc 1	WALDECK L 100%	C	0.28	10"	2.0% H (w)	H	H
Za 1	ZENDA CL 100%	C	0.28	15"	2.0% H (w)	H	H
Ze 1	LESHO CL 100%	C	0.28	15"	1.5% H (w)	H	H
Zs 1	ZENDA CL 85%	C	0.28	15"	2.0% H (w)	H	H
Zs 2	DRUMMOND CL 15%	D	0.49	8"	0.8% H (w)	H	H

(.\REPORTS\SOILS.TXT generated on 12/12/01 at 12:11:15)

H -- High
I -- Intermediate
L -- Low
V -- Very Low

Conditions that affect ratings:

- m -- There are macropores in the surface horizon deeper than 24"
- w -- The high water table comes within 24" of the surface during the growing season
- s -- The field slope is greater than 15%

SPISP II S-Ratings:

- SLP -- Soil Leaching Potential
- SSRP -- Soil Solution Runoff Potential
- SARP -- Soil Adsorbed Runoff Potential

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed. The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (USDA, 1999) and "Keys to Soil Taxonomy" (USDA, 1998) and in the "Soil Survey Manual" (USDA, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1996).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units in the Hydric Soil Interpretations table meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1996).

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

These map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Edwards County, Kansas

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All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
057AN: ROXBURY SILT LOAM, CHANNELED	ROXBURY	No	flood plain	---	---	---	---
057LA: LAS ANIMAS SANDY LOAM, OCCASIONALLY FLOODED	LAS ANIMAS	No	flood plain	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
057LC: LAS ANIMAS-LINCOLN COMPLEX, OCCASIONALLY FLOODED	LAS ANIMAS	No	flood plain	---	---	---	---
	LINCOLN UNNAMED HYDRIC SOILS	No Yes	flood plain depression	---	---	---	---
				2B3	YES	NO	NO
097AT: ATTICA LOAMY FINE SAND, 1 TO 4 PERCENT SLOPES	ATTICA	No	dune, paleoterrace	---	---	---	---
	CARWILE Unnamed wet soils	Yes Yes	depression depression	2A 3, 2B3, 2A, 4	YES YES	NO YES	NO YES
097AX: ATTICA-CARWILE COMPLEX, 0 TO 4 PERCENT SLOPES	ATTICA	No	paleoterrace	---	---	---	---
	CARWILE Unnamed wet soils	Yes Yes	depression depression	2A 2B2, 3, 4	YES YES	NO YES	NO YES
097TH: TIVOLI FINE SAND, 15 TO 30 PERCENT SLOPES	TIVOLI	No	dune, paleoterrace	---	---	---	---
145HC: HARNEY SILTY CLAY LOAM, 1 TO 3 PERCENT SLOPES, ERODED	HARNEY	No	plain	---	---	---	---
145HD: HARNEY-ULY COMPLEX, 3 TO 6 PERCENT SLOPES, ERODED	HARNEY	No	plain	---	---	---	---
	ULY UNNAMED HYDRIC SOILS	No Yes	plain depression	---	---	---	---
				2A, 3	YES	NO	YES
145RO: ROXBURY SILT LOAM, FREQUENTLY FLOODED	ROXBURY	No	flood plain	---	---	---	---
	NESS UNNAMED HYDRIC SOILS	Yes Yes	playa drainageway	2A 2A, 3	YES YES	NO NO	NO YES
	Unnamed wet soils	Yes	depression	2A, 3, 2B3, 4	YES	YES	YES
145UC: ULY SILT LOAM, 3 TO 6 PERCENT SLOPES	ULY	No	plain	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A, 2B3	YES	NO	NO
151KP: KANZA-PLEVNA COMPLEX, FREQUENTLY FLOODED	KANZA	Yes	flood plain	2B3	YES	NO	NO
	PLEVNA	Yes	flood plain	2B3, 4	YES	YES	NO
185PR: PRATT-CARWILE COMPLEX, 0 TO 8 PERCENT SLOPES	PRATT	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A, 3	YES	NO	YES
	UNNAMED HYDRIC SOILS	Yes	depression	3, 2B3	YES	NO	YES
	Unnamed wet soils	Yes	depression	2A, 2B2	YES	NO	NO
Aa: ATTICA FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	ATTICA	No	dune, paleoterrace	---	---	---	---
	CARWILE Unnamed wet soils	Yes Yes	depression depression	2A 3, 2A, 2B3	YES YES	NO NO	NO YES
Ab: ATTICA FINE SANDY LOAM, 1 TO 3 PERCENT SLOPES	ATTICA	No	dune, paleoterrace	---	---	---	---
	CARWILE Unnamed wet soils	Yes Yes	depression depression	2A 2A, 3, 2B3	YES YES	NO NO	NO YES

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Edwards County, Kansas

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All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Ac: ATTICA-CARWILE FINE SANDY LOAMS, 0 TO 3 PERCENT SLOPES	ATTICA	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression	2A	YES	NO	NO
	CARWILE	Yes	depression	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
ARR: ARKANSAS RIVER	ARKANSAS RIVER	Unranked	---	---	---	---	---
Bk: COLY-TOBIN SILT LOAMS, 0 TO 15 PERCENT SLOPES	COLY	No	break	---	---	---	---
	TOBIN	No	flood plain	---	---	---	---
	Unnamed wet soils	Yes	drainageway	2A,2B3	YES	NO	NO
BOP: Borrow Pits	BORROW PITS	Unranked	---	---	---	---	---
Cc: CAMPUS-CANLON COMPLEX, 6 TO 15 PERCENT SLOPES	CAMPUS	No	break	---	---	---	---
	CANLON	No	break	---	---	---	---
Cd: CANADIAN FINE SANDY LOAM, RARELY FLOODED	CANADIAN	No	flood plain	---	---	---	---
Cf: DARR FINE SANDY LOAM, RARELY FLOODED	DARR	No	flood plain	---	---	---	---
Cr: CARWILE FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	CARWILE	Yes	depression	2A,3	YES	NO	YES
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
Cs: CARWILE-DRUMMOND COMPLEX, 0 TO 1 PERCENT SLOPES	CARWILE	Yes	depression, paleoterrace	2A,3	YES	NO	YES
	DRUMMOND	No	terrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
Fa: FARNUM LOAM, 0 TO 1 PERCENT SLOPES	FARNUM	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
Fr: FARNUM LOAM, 1 TO 3 PERCENT SLOPES	FARNUM	No	paleoterrace	---	---	---	---
Ha: HARNEY SILT LOAM, 0 TO 1 PERCENT SLOPES	HARNEY	No	divide	---	---	---	---
	NESS	Yes	playa	2B3,3	YES	NO	YES
	Unnamed wet soils	Yes	depression	2A,3,2B3,4	YES	YES	YES
Hb: HARNEY SILT LOAM, 1 TO 3 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
Hc: HARNEY SILT LOAM, 3 TO 6 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
Hd: HARNEY-ULY COMPLEX, 1 TO 3 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
	ULY	No	paleoterrace	---	---	---	---
He: HARNEY-ULY COMPLEX, 3 TO 6 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
	ULY	No	plain	---	---	---	---
Hg: HOLDREGE SILT LOAM, 1 TO 3 PERCENT SLOPES	HOLDREGE	No	plain	---	---	---	---
Hh: HOLDREGE SILT LOAM, 3 TO 6 PERCENT SLOPES	HOLDREGE	No	plain	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Edwards County, Kansas

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All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Ho: HORD SILT LOAM, RARELY FLOODED	HORD	No	flood plain	---	---	---	---
	UNNAMED HYDRIC SOIL 1	Yes	drainageway	2B3,4	YES	YES	NO
	UNNAMED HYDRIC SOIL 2	Yes	depression	2A,3,2B3	YES	NO	YES
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
La: LAS ANIMAS LOAMY FINE SAND, OCCASIONALLY FLOODED	LAS ANIMAS	No	flood plain	---	---	---	---
Lh: LESHO CLAY LOAM, OCCASIONALLY FLOODED	LESHO	No	flood plain	---	---	---	---
Lk: LUBBOCK SILT LOAM, 0 TO 1 PERCENT SLOPES	LUBBOCK	No	plain	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
Na: NARON LOAMY FINE SAND, 0 TO 1 PERCENT SLOPES	NARON	No	dune, paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
Nf: NARON FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	NARON	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
Ng: NARON FINE SANDY LOAM, 1 TO 3 PERCENT SLOPES	NARON	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2A,3,2B3	YES	NO	YES
Ns: NESS CLAY	NESS	Yes	playa	2B3,3	YES	NO	YES
Pa: PLATTE SOILS, OCCASIONALLY FLOODED	PLATTE	No	flood plain	---	---	---	---
Pe: PLEVNA FINE SANDY LOAM, FREQUENTLY FLOODED	PLEVNA	Yes	flood plain	4,2B3	YES	YES	NO
	Unnamed wet soils	Yes	drainageway	2B2,2B3,2A	YES	NO	NO
Pf: PRATT LOAMY FINE SAND, 4 TO 10 PERCENT SLOPES	PRATT	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2B3,2A,3	YES	NO	YES
Pg: PRATT LOAMY FINE SAND, 1 TO 4 PERCENT SLOPES	PRATT	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2B3,2A,3	YES	NO	YES
Pr: PRATT-LINCOLN LOAMY FINE SANDS, 0 TO 4 PERCENT SLOPES	PRATT	No	dune, paleoterrace	---	---	---	---
PRR: PRATT LOAMY FINE SAND, 1 TO 5 PERCENT SLOPES	LINCOLN	No	flood plain	---	---	---	---
	PRATT	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2A,2B3,3	YES	NO	YES

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				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
PSS: PRATT LOAMY FINE SAND, 5 TO 10 PERCENT SLOPES	PRATT	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A	YES	NO	NO
	Unnamed wet soils	Yes	depression	2A, 2B2, 3, 2B3	YES	NO	YES
Pt: PRATT-TIVOLI LOAMY FINE SANDS, 5 TO 15 PERCENT SLOPES	PRATT	No	dune, paleoterrace	---	---	---	---
	TIVOLI	No	dune, paleoterrace	---	---	---	---
	CARWILE	Yes	depression, paleoterrace	2A, 3	YES	NO	YES
	Unnamed wet soils	Yes	depression	2A, 2B3, 2B2, 3	YES	NO	YES
SAP: Sand Pits	SAND PIT	Unranked	---	---	---	---	---
Ta: TABLER CLAY LOAM, 0 TO 1 PERCENT SLOPES	TABLER	No	plain	---	---	---	---
	CARWILE	Yes	depression	2A, 3	YES	NO	YES
	NESS	Yes	playa	2B3, 3	YES	NO	YES
	Unnamed wet soils	Yes	depression	2A, 3, 2B3	YES	NO	YES
Tb: TABLER-DRUMMOND COMPLEX, 0 TO 1 PERCENT SLOPES	TABLER	No	plain	---	---	---	---
	DRUMMOND	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A, 3, 2B3	YES	NO	YES
Tf: TIVOLI FINE SAND, 10 TO 20 PERCENT SLOPES	TIVOLI	No	dune, paleoterrace	---	---	---	---
To: TOBIN SILT LOAM, OCCASIONALLY FLOODED	TOBIN	No	flood plain	---	---	---	---
W: Water	WATER	Yes	---	4, 3	NO	YES	YES
Wa: WALDECK FINE SANDY LOAM, OCCASIONALLY FLOODED	WALDECK	No	flood plain	---	---	---	---
	UNNAMED HYDRIC SOIL	Yes	drainageway	4, 2B3	YES	YES	NO
	Unnamed wet soils	Yes	depression	2B3, 3, 2A	YES	NO	YES
Wc: WALDECK LOAM, OCCASIONALLY FLOODED	WALDECK	No	flood plain	---	---	---	---
Za: ZENDA CLAY LOAM, OCCASIONALLY FLOODED	ZENDA	No	flood plain	---	---	---	---
Ze: LESHO CLAY LOAM, SALINE, OCCASIONALLY FLOODED	LESHO	No	flood plain	---	---	---	---
Zs: ZENDA-DRUMMOND COMPLEX, OCCASIONALLY FLOODED	ZENDA	No	flood plain	---	---	---	---
	DRUMMOND	No	paleoterrace	---	---	---	---
	Unnamed wet soils	Yes	depression	2A, 3, 2B3	YES	NO	YES

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria

FOOTNOTE: There may be small areas of included soils or miscellaneous areas that are significant to use and management of the soil; yet are too small to delineate on the soil map at the map's original scale. These may be designated as spot symbols and are defined in the published Soil Survey Report or the USDA-NRCS Technical Guide, Part II.

Areas mapped as water or any map unit that contains one of the following conventional symbols is considered a hydric soil map unit: marshes or swamps; wet spots; depressions; streams, lakes and ponds.

1. All Histosols except Folists, or
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:
 - a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or
 - b. poorly drained or very poorly drained and have either:
 - (1) water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in), or for other soils
 - (2) water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or
 - (3) water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or
3. Soils that are frequently ponded for long duration or very long duration during the growing season, or
4. Soils that are frequently flooded for long duration or very long duration during the growing season.