

WATER MANAGEMENT Sumner 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
Sumner 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
015LS: Ladysmith-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
035LG: Lincoln-----	Limitation: deep to water	Limitation: flooding soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
Tivoli-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
035VC: Vanoss-----	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
035VD: Verdigris-----	Limitation: deep to water	Limitation: flooding	Favorable	Favorable
077AN: Kaski-----	Limitation: deep to water	Limitation: flooding	Favorable	Favorable
077BM: Lincoln-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
077BP: Woodward-----	Limitation: deep to water	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
Port-----	Limitation: deep to water	Limitation: erodes easily flooding	Limitation: erodes easily	Limitation: erodes easily
077CE: Corbin-----	Limitation: deep to water	Limitation: percs slowly	Limitation: percs slowly	Limitation: percs slowly
077CF: Corbin-----	Limitation: deep to water	Limitation: percs slowly	Limitation: percs slowly	Limitation: percs slowly
077GN: Grant-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
077GS: Grant-----	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
077KR: Kirkland-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily	Limitation: erodes easily percs slowly
Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
077KW: Kirkland-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily	Limitation: erodes easily percs slowly
Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
077PH: Dale-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
077PT: Pratt-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
Tivoli-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
077SO: Shellabarger----	Limitation: deep to water	Limitation: slope soil blowing	Limitation: slope soil blowing	Limitation: slope
Albion-----	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty

WATER MANAGEMENT--Continued
Sumner County, Kansas

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Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
077TH: Tivoli-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
095DA: Dillwyn-----	Limitation: 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
095OA: Wellsford-----	Limitation: deep to water	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
095RA: Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
173EA: Elandco-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
173LA: Lesho-----	Limitation: flooding cutbanks cave	Limitation: flooding wetness	Limitation: too sandy wetness	Favorable
173PB: Plevna-----	Limitation: flooding	Limitation: flooding wetness soil blowing	Limitation: wetness soil blowing	Limitation: wetness
173RA: Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
1439: Crisfield-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
AED: Arents, Earthen Dam-----	---	---	---	---
Ba: Bethany-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Bb: Bethany-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
BOA: Borrow Areas----	---	---	---	---
Br: Brewer-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Bs: Brewer-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Drummond-----	Limitation: excess sodium percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily excess sodium percs slowly
Ca: Canadian-----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
CAA: Canadian-----	Limitation: deep to water	Favorable	Favorable	Favorable
Cc: Carwile-----	Limitation: percs slowly	Limitation: percs slowly wetness soil blowing	Limitation: erodes easily wetness soil blowing	Limitation: erodes easily percs slowly rooting depth
Cr: Corbin-----	Limitation: deep to water	Limitation: percs slowly	Limitation: percs slowly	Limitation: percs slowly
Da: Dale-----	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily

WATER MANAGEMENT--Continued
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Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Dr: Dale-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Reinach-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Ea: Elandco-----	Limitation: deep to water	Limitation: erodes easily flooding	Limitation: erodes easily	Limitation: erodes easily
Ec: Elandco-----	Limitation: deep to water	Limitation: erodes easily flooding	Limitation: erodes easily	Limitation: erodes easily
Fa: Farnum-----	Limitation: deep to water	Favorable	Favorable	Favorable
Fb: Farnum-----	Limitation: deep to water	Favorable	Favorable	Favorable
Fc: Farnum-----	Limitation: deep to water	Limitation: slope	Favorable	Favorable
Fd: Farnum-----	Limitation: deep to water	Limitation: slope	Favorable	Favorable
GRP: Gravel Pits----	---	---	---	---
INT: Aquolls-----	---	---	---	---
IRR: Irwin-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Ka: Kirkland-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Kb: Kirkland-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Kc: Kirkland-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Lo: Lesho-----	Limitation: flooding cutbanks cave	Limitation: wetness	Limitation: too sandy wetness	Favorable
Ls: Lincoln-----	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
M-W: Miscellaneous Water-----	---	---	---	---
Ma: Milan-----	Limitation: deep to water	Favorable	Favorable	Favorable
Mb: Milan-----	Limitation: deep to water	Favorable	Favorable	Favorable
Mc: Milan-----	Limitation: deep to water	Limitation: slope	Favorable	Favorable
Md: Milan-----	Limitation: deep to water	Limitation: slope	Favorable	Favorable
On: Wellsford-----	Limitation: deep to water	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Oo: Wellsford-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Op: Wellsford-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope depth to rock
Elandco-----	Limitation: deep to water	Limitation: erodes easily flooding	Limitation: erodes easily	Limitation: erodes easily

WATER MANAGEMENT--Continued
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Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Or: Wellsford-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Os: Wellsford-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope depth to rock	Limitation: percs slowly slope depth to rock
Shale Outcrop---	---	---	---	---
Pa: Pond Creek-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Pb: Pond Creek-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Pc: Pond Creek-----	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
Pd: Pond Creek-----	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
Px: Pratt-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing	Limitation: droughty
Ra: Renfrow-----	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly
Grainola-----	Limitation: deep to water	Limitation: percs slowly depth to rock droughty	Limitation: erodes easily percs slowly depth to rock	Limitation: erodes easily depth to rock droughty
Ro: Rosehill-----	Limitation: deep to water	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Rs: Rosehill-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Rx: Rosehill-----	Limitation: deep to water	Limitation: percs slowly slope depth to rock	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock
Sa: Shellabarger----	Limitation: deep to water	Limitation: soil blowing	Limitation: soil blowing	Favorable
Sb: Shellabarger----	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Favorable
Sc: Shellabarger----	Limitation: deep to water	Limitation: slope soil blowing	Limitation: soil blowing	Favorable
Ta: Tabler-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly
Tv: Tivoli-----	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
Us: Ustifluvents----	---	---	---	---
Va: Vanoss-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Vb: Vanoss-----	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily

WATER MANAGEMENT--Continued
Sumner County, Kansas

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Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Vc: Vanoss-----	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
W: Water (< 40 Acres)-----	---	---	---	---
Wa: Waurika-----	Limitation: percs slowly	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness

WATER MANAGEMENT--Continued
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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
015LS: Ladysmith-----	90	Somewhat limited Seepage	0.01	Somewhat limited Hard to pack	0.97	Very limited Deep to water	1.00
035LG: Lincoln-----	55	Very limited Seepage	1.00	Somewhat limited Seepage	0.99	Very limited Deep to water	1.00
Tivoli-----	30	Very limited Seepage	1.00	Somewhat limited Seepage	0.97	Very limited Deep to water	1.00
035VC: Vanoss-----	90	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.54	Very limited Deep to water	1.00
035VD: Verdigris-----	85	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.98	Very limited Deep to water	1.00
077AN: Kaski-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping Seepage	0.78 0.09	Very limited Deep to water	1.00
077BM: Lincoln-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.39	Very limited Deep to water	1.00
077BP: Woodward-----	65	Somewhat limited Seepage Depth to bedrock Slope	0.70 0.11 0.00	Very limited Piping Thin layer	1.00 0.85	Very limited Deep to water	1.00
Port-----	35	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.82	Very limited Deep to water	1.00
077CE: Corbin-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
077CF: Corbin-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
077GN: Grant-----	100	Somewhat limited Seepage Depth to bedrock	0.70 0.00	Very limited Piping Thin layer	1.00 0.11	Very limited Deep to water	1.00
077GS: Grant-----	100	Somewhat limited Seepage Depth to bedrock	0.70 0.00	Very limited Piping Thin layer	1.00 0.11	Very limited Deep to water	1.00
077KR: Kirkland-----	70	Somewhat limited Seepage	0.05	Somewhat limited Hard to pack	0.22	Very limited Deep to water	1.00
Renfrow-----	30	Not limited		Somewhat limited Hard to pack	0.19	Very limited Deep to water	1.00
077KW: Kirkland-----	70	Somewhat limited Seepage	0.05	Somewhat limited Hard to pack	0.26	Very limited Deep to water	1.00
Renfrow-----	30	Not limited		Somewhat limited Hard to pack	0.21	Very limited Deep to water	1.00
077PH: Dale-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.82	Very limited Deep to water	1.00
077PT: Pratt-----	50	Very limited Seepage Slope	1.00 0.00	Very limited Seepage	1.00	Very limited Deep to water	1.00
Tivoli-----	50	Very limited Seepage	1.00	Somewhat limited Seepage	0.99	Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
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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
		Slope	0.00				
077SO: Shellabarger-----	70	Somewhat limited Seepage Slope	0.70 0.00	Somewhat limited Seepage	0.09	Very limited Deep to water	1.00
Albion-----	30	Very limited Seepage Slope	1.00 0.00	Somewhat limited Seepage	0.49	Very limited Deep to water	1.00
077TH: Tivoli-----	100	Very limited Seepage Slope	1.00 0.00	Somewhat limited Seepage	0.99	Very limited Deep to water	1.00
095DA: Dillwyn-----	60	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.18	Very limited Cutbanks cave Deep to water	1.00 0.00
Plevna-----	40	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 1.00	Very limited Cutbanks cave	1.00
095OA: Wellsford-----	100	Very limited Seepage Depth to bedrock	1.00 0.61	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00
095RA: Renfrow-----	100	Not limited		Somewhat limited Hard to pack	0.19	Very limited Deep to water	1.00
173EA: Elandco-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.82	Very limited Deep to water	1.00
173LA: Lesho-----	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
173PB: Plevna-----	100	Very limited Seepage	1.00	Very limited Seepage Depth to saturated zone	1.00 1.00	Very limited Cutbanks cave	1.00
173RA: Renfrow-----	100	Not limited		Somewhat limited Hard to pack	0.19	Very limited Deep to water	1.00
1439: Crisfield-----	100	Very limited Seepage	1.00	Somewhat limited Seepage Depth to saturated zone	0.78 0.18	Very limited Cutbanks cave Deep to water	1.00 0.44
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
Ba: Bethany-----	100	Not limited		Not limited		Very limited Deep to water	1.00
Bb: Bethany-----	100	Not limited		Not limited		Very limited Deep to water	1.00
BOA: Borrow Areas-----	100	Not rated		Not rated		Not rated	

WATER MANAGEMENT--Continued
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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
Br: Brewer-----	100	Not limited		Somewhat limited Hard to pack	0.13	Very limited Deep to water	1.00
Bs: Brewer-----	70	Not limited		Somewhat limited Hard to pack	0.13	Very limited Deep to water	1.00
Drummond-----	30	Not limited		Not limited		Somewhat limited Deep to water Cutbanks cave Salty water	0.81 0.10 0.01
Ca: Canadian-----	100	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.09	Very limited Deep to water	1.00
CAA: Canadian-----	90	Very limited Seepage	1.00	Very limited Piping Seepage	1.00 0.09	Very limited Deep to water	1.00
Cc: 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
Cr: Corbin-----	100	Somewhat limited Seepage	0.70	Not limited		Very limited Deep to water	1.00
Da: Dale-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.81	Very limited Deep to water	1.00
Dr: Dale-----	50	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.81	Very limited Deep to water	1.00
Reinach-----	50	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
Ea: Elandco-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.38	Very limited Deep to water	1.00
Ec: Elandco-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.81	Very limited Deep to water	1.00
Fa: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.61	Very limited Deep to water	1.00
Fb: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.61	Very limited Deep to water	1.00
Fc: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.61	Very limited Deep to water	1.00
Fd: Farnum-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.61	Very limited Deep to water	1.00
GRP: Gravel Pits-----	100	Not rated		Not rated		Not rated	
INT: Aquolls-----	100	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Cutbanks cave	0.10

WATER MANAGEMENT--Continued
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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
IRR: Irwin-----	85	Not limited		Somewhat limited Hard to pack	0.17	Very limited Deep to water	1.00
Ka: Kirkland-----	100	Not limited		Not limited		Very limited Deep to water	1.00
Kb: Kirkland-----	100	Not limited		Not limited		Very limited Deep to water	1.00
Kc: Kirkland-----	100	Not limited		Not limited		Very limited Deep to water	1.00
Lo: 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
Ls: Lincoln-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.39	Very limited Deep to water	1.00
M-W: Miscellaneous Water-	100	Not rated		Not rated		Not rated	
Ma: Milan-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.08	Very limited Deep to water	1.00
Mb: Milan-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.08	Very limited Deep to water	1.00
Mc: Milan-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.08	Very limited Deep to water	1.00
Md: Milan-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.08	Very limited Deep to water	1.00
On: Wellsford-----	100	Very limited Seepage Depth to bedrock	1.00 0.66	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00
Oo: Wellsford-----	100	Very limited Seepage Depth to bedrock	1.00 0.66	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00
Op: Wellsford-----	65	Very limited Seepage Depth to bedrock Slope	1.00 0.66 0.02	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00
Elandco-----	35	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.81	Very limited Deep to water	1.00
Or: Wellsford-----	65	Very limited Seepage Depth to bedrock	1.00 0.66	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00
Renfrow-----	35	Not limited		Somewhat limited Hard to pack	0.19	Very limited Deep to water	1.00
Os: Wellsford-----	65	Very limited Seepage Depth to bedrock Slope	1.00 0.66 0.06	Very limited Thin layer Hard to pack	1.00 0.50	Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
Sumner 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
Shale Outcrop-----	35	Very limited Seepage Slope	1.00 0.50	Very limited Hard to pack	1.00	Very limited Deep to water	1.00
Pa: Pond Creek-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.71	Very limited Deep to water	1.00
Pb: Pond Creek-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.71	Very limited Deep to water	1.00
Pc: Pond Creek-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.71	Very limited Deep to water	1.00
Pd: Pond Creek-----	100	Somewhat limited Seepage	0.05	Somewhat limited Piping	0.67	Very limited Deep to water	1.00
Px: Pratt-----	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.57	Very limited Deep to water	1.00
Ra: Renfrow-----	70	Not limited		Somewhat limited Hard to pack	0.19	Very limited Deep to water	1.00
Grainola-----	30	Somewhat limited Depth to bedrock	0.03	Somewhat limited Thin layer Hard to pack	0.66 0.50	Very limited Deep to water	1.00
Ro: Rosehill-----	100	Somewhat limited Depth to bedrock	0.03	Very limited Hard to pack Thin layer	1.00 0.66	Very limited Deep to water	1.00
Rs: Rosehill-----	100	Somewhat limited Depth to bedrock	0.03	Very limited Hard to pack Thin layer	1.00 0.66	Very limited Deep to water	1.00
Rx: Rosehill-----	100	Somewhat limited Depth to bedrock	0.03	Very limited Hard to pack Thin layer	1.00 0.66	Very limited Deep to water	1.00
Sa: Shellabarger-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.09	Very limited Deep to water	1.00
Sb: Shellabarger-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.09	Very limited Deep to water	1.00
Sc: Shellabarger-----	100	Somewhat limited Seepage	0.70	Somewhat limited Seepage	0.09	Very limited Deep to water	1.00
Ta: Tabler-----	100	Not limited		Somewhat limited Depth to saturated zone Hard to pack	0.43 0.16	Very limited Deep to water	1.00
Tv: Tivoli-----	100	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.99	Very limited Deep to water	1.00
Us: Ustifluvents-----	100	Very limited Seepage Slope	1.00 0.03	Very limited Hard to pack	1.00	Very limited Deep to water	1.00
Va: Vanoss-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.80	Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
Sumner 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
Vb: Vanoss-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.80	Very limited Deep to water	1.00
Vc: Vanoss-----	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.80	Very limited Deep to water	1.00
W: Water (< 40 Acres)--	100	Not rated		Not rated		Not rated	
Wa: Waurika-----	100	Not limited		Very limited Depth to saturated zone	1.00	Very limited Deep to water	1.00

