

# 28-16



Kansas Administrative Regulations  
Kansas Department of Health and Environment

## Notice to Reader

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Where possible KDHE will append changed regulations to the appropriate article. Once again, the lack of any attachments should not be construed as meaning there are no revisions.

Nothing contained herein should be construed as legal advice by KDHE. If you are not an attorney, you should secure competent counsel to interpret the regulations and advise you.

Office of Public Information  
Kansas Department of Health and Environment

## *Notes*

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The *Kansas Register* notes the following changes:

28-16-28b, c, d, e, f; 28-16-30 through 28-16-36; 28-16-58; and 28-16-60

These regulations are highlighted and available in other PDFfiles on the Bureau of Water Web Site.

(2) There shall be a program review fee for any out-of-state laboratory of \$75.00 for each type of certification review.

(b) The fees set forth in subsection (a) of this regulation shall be submitted with the appropriate application form provided by the Kansas department of health and environment.

(c) Upon receipt and review of the application, a statement of certification fees shall be calculated and issued to the laboratory, by the department as follows.

(1) For each type of certificate, excluding field laboratory certification, the annual fee shall be \$30.00 for each individual chemical parameter and \$50.00 for parametric groups to a maximum of \$800.00.

(2) The fee for microbiology shall be \$200.00.

(3) The fee for biomonitoring shall be \$200.00.

(4) For field laboratory certification, the fee for each parameter shall be \$90.00.

(d) A fee of \$50.00 shall be assessed for each parameter requested as an additional analyte during the certification period. This fee shall be assessed in addition to any maximum limit.

(e) Fees shall be remitted in full prior to the issuance of the certificate. Fees shall not be refunded except in the case of overpayment. Payment of fees shall be made to the Kansas health and environmental laboratory, laboratory certification, Kansas department of health and environment, Topeka, Kansas, 66620-0001. (Authorized by and implementing K.S.A. 65-156, 65-166a; 65-1,109a; effective, E-79-14, June 23, 1978; effective May 1, 1979; amended May 1, 1986; amended Jan. 24, 1994.)

## Article 16.—WATER POLLUTION CONTROL

### SEWAGE DISCHARGE PERMITS

28-16-1. **Information required.** (A) Application on form furnished by the department.

(B) Plans.

(C) Specifications.

(D) Engineer's report. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

28-16-2. **Submission of information.** Plans, specifications, report and application must be submitted to the chief engineer for the board at least three weeks prior to the date on which action is desired. It is not to be inferred, however, that action will always be taken within the time

mentioned. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

28-16-3. **Plans.** Plans for sewerage systems, sewer extensions and sewage treatment plants shall include:

(A) A general map of the municipality or sewer district, showing all proposed and existing streets and alleys, drawn to a scale not smaller than 300 feet to one inch, with all sewer lines, with sizes indicated, and the location of all manholes, cleanouts, and other appurtenances.

(B) The profiles of all sewers, with sizes of sewers, elevations of the sewer inverts of all manholes, and the grade of the sewers between each two adjacent manholes plainly stated. At the sewer outlet shall be shown the approximate elevation of the bottom of the stream, or ordinary low water, and of annual and extraordinary high water. Elevation of extraordinary high water shall be shown on profiles of sewers subject to flooding. Scales of profiles must be clearly stated. The following scale is suggested: vertical, 10 feet to 1 inch; horizontal, 100 feet to 1 inch.

(C) Detail drawings of manholes, cleanouts, inlets, catch basins, overflows, outlets, and all other appurtenances must accompany the application. Unless sewers are other than vitrified clay, detail drawing must be submitted.

(D) The plans for the treatment plant shall include: (1) a general layout, showing areas for future extension, embankments, various parts of plant, course of outfall sewer, outlet, stream with direction of flow, and any branches in immediate neighborhood, etc.; (2) details of longitudinal and transverse sections sufficient to make clear the construction of each unit. Details of each feature, inlet and outlet devices, baffles, valves, overflows, arrangement of automatic devices, etc., the depth and sizes of filtering media, the method of distribution and collection of sewage on the beds, and such other information as is necessary for a complete understanding of the plans.

Each drawing shall have a legible title showing the name of the town or person for whom the drawing is made, name of engineer, scale, date, and substance of drawing. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

28-16-4. **Specifications.** Specifications for the construction of the work shall accompany all plans for new or original systems. Where plans are for extensions to systems, the specifications may be omitted, provided it is stated that work is to be

constructed under specifications already on file. It is desired that the estimate of cost be included, but this is not compulsory. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

**28-16-5. Engineer's report.** A comprehensive report of the proposed work, written or approved by the consulting or designing engineer, must accompany all plans for a complete system or treatment plant, and must give all data upon which the design is based, such as information concerning sewer systems:

(A) The nature and extent of the area included with the present system of sewerage, and of the area which it is planned shall drain into this system ultimately.

(B) Population to be served, present and future, estimated for twenty-five years.

(C) The estimated daily per capita flow of sewage, and the total and per capita water consumption of the town at the present time.

(D) The allowance made for infiltration.

(E) The estimated daily flow of sewage.

(F) The character of the sewage. If domestic and trade wastes, estimate nature, and approximate quantity of each.

(G) Method of flushing or cleaning sewers.

(H) Portion to be built at present time.

(I) Minimum and maximum grade of sewers of each size.

(J) If there are sections which cannot grade into this system, the extent of such sections and the probable future disposition of sewage from these sections.

(K) Distance of houses or buildings from proposed outlet or treatment plant.

(L) Approximate maximum and minimum flow of water in stream receiving flow of sewage.

(M) Drainage area above outlet or treatment plant.

(N) Nearest water supplies taken from stream below plant or outlet; above plant or outlet. Dams in vicinity of plant or outlet. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

**28-16-6. Information concerning treatment plant.** In addition to that concerning sewer systems: Engineer's report should cover the following points: method of treatment and description of units; rate of loading; nature of body of water; disposal of sludge; special devices; special methods of maintenance or operation; results expected from treatment plant. Explain any reserve units in pipelines, filters, tanks, etc. Describe

pumping unit if sewage is pumped, and any automatic arrangements. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

**28-16-7. Deviation from plans.** There shall be no deviation from plans submitted to and approved by the department, unless amended plans showing proposed changes have been submitted to and approved by the department. Copies of approved plans, specifications, application and report must be filed with the department and permit obtained before the contract for the work is let. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

**28-16-8 to 28-16-10.** (Authorized by K.S.A. 65-170, 65-171d; effective Jan. 1, 1966; revoked Jan. 1, 1972.)

#### RIVER BASIN WATER QUALITY CRITERIA

**28-16-11 to 28-16-26.** (Authorized by K.S.A. 1971 Supp. 65-165 through 65-171d; effective, E-67-6, May 31, 1967; effective Jan. 1, 1968; amended, E-71-12, Feb. 1, 1971; amended Jan. 1, 1972; revoked, E-73-16, May 18, 1973; revoked Jan. 1, 1974.)

**28-16-27. Emergency or accidental discharge of sewage or other detrimental material into waters; report to department of health.** The owner or person responsible for the discharge of sewage or other materials detrimental to the quality of waters of the state, under conditions other than provided for by a valid permit issued by the secretary of the state board of health, shall report such discharge to the state department of health, environmental health services.

When sewage treatment facilities or portions thereof are programmed for bypassing for cause, which results in reduced treatment efficiency below acceptable levels, the owner or his representative shall notify and receive approval from the state department of health at least seven (7) days prior to such discharge.

Emergency or accidental discharge of sewage or other materials detrimental to the quality of waters of the state shall be immediately reported to the state department of health by the owner of the treatment plant or his representative. In the event the water pollution-causing material is in transit or in storage within the state, it shall be the responsibility of the owner, the carrier, or person responsible for storage, to immediately notify the state department of health that the pollutant has

gained admittance or there is the potential the pollutant will gain admittance to waters of the state. (Authorized by K.S.A. 65-164, 65-169, 65-171a, 65-171f, K.S.A. 1968 Supp. 65-165, 65-166, 65-167, 65-171d, 65-171h; effective Jan. 1, 1969.)

28-16-28. (Authorized by K.S.A. 1977 Supp. 65-165 through 65-171d; effective, E-73-16, May 18, 1973; effective Jan. 1, 1974; amended, E-76-3, Jan. 1, 1975; amended May 1, 1975; amended May 1, 1978; revoked May 1, 1986.)

28-16-28a. (Authorized by K.S.A. 1977 Supp. 65-165, 65-166, 65-166a, 65-167, 65-169, 65-170, 65-171a through 65-171d; effective, E-76-15, Feb. 28, 1975; effective May 1, 1976; amended May 1, 1978; revoked May 1, 1986.)

#### **SURFACE WATER QUALITY STANDARDS**

28-16-28b. **Definitions.** As used in these regulations: (a) "A condition of acute toxicity" means any concentration of a toxic substance that exceeds the applicable acute criterion for aquatic life support presented in K.A.R. 28-16-28e or, for substances not listed in K.A.R. 28-16-28e or for complex mixtures of toxic substances, any concentration that exceeds 0.3 times the median lethal concentration determined through laboratory toxicity tests conducted in accordance with the United States environmental protection agency's "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms," fourth edition, as published in September 1991 and hereby adopted by reference.

(b) "A condition of chronic toxicity" means any concentration of a toxic substance that exceeds the applicable chronic criterion for aquatic life support presented in K.A.R. 28-16-28e or, for substances not listed in K.A.R. 28-16-28e or for complex mixtures of toxic substances, any concentration that exceeds the no-observed-effect level determined through laboratory toxicity tests conducted in accordance with the United States environmental protection agency's "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," second edition, as published in March 1989 and hereby adopted by reference.

(c) "Alluvial aquifer" means the sediment that is associated with and deposited by a stream, and that contains water capable of being produced from a well.

(d) "Antidegradation" means the regulatory actions and measures taken to prevent or minimize

the lowering of water quality in surface waters of the state, including those streams, lakes and wetlands wherein existing water quality exceeds the level required for maintenance and protection of the existing and designated uses.

(e) "Artificial sources" means sources of pollution that result from human activities which can be abated by construction of control structures, modification of operating practices, complete restraint of activities, or some combination of these methods.

(f) "Base flow" means that portion of a stream's flow contributed by sources of water other than precipitation runoff. Where used in this regulation in the context of stream classification, the term refers to a fair weather flow sustained primarily by springs or groundwater seepage, wastewater discharges, irrigation return flows, releases from reservoirs, or some combination of these factors.

(g) "Bioaccumulation" means the accumulation of toxic substances in plant or animal tissue through either bioconcentration or biomagnification.

(h) "Bioassessment methods and procedures" means the use of biological methods of assessing surface water quality including, but not limited to, field investigations of aquatic organisms and laboratory or field aquatic toxicity tests.

(i) "Bioconcentration" means the concentration and incorporation of toxic substances into body tissues from ambient sources.

(j) "Biomagnification" means the transport of toxic substances through the food chain, through successive cycles of eating and being eaten, and the subsequent accumulation and concentration of such substances in higher-order consumers and predators.

(k) "Biota" means the animal and plant life of a given geographical region.

(l) "Carcinogenic" means having the property of inducing the production of cancerous cells in organisms.

(m) "Classified surface water" means any surface water or surface water segment that supports, or in the absence of artificial sources of pollution would support, one or more of the designated uses of surface water defined in K.A.R. 28-16-28d(a), or that otherwise meets the criteria for classification given in K.A.R. 28-16-28d(b).

(n) "Compliance schedule" means any provision in a discharge permit or license issued by the department pursuant to the federal clean water

- act or K.S.A. 65-165 that, for the purposes of meeting water quality-based effluent limitations or other requirements included in the permit or license, provides a specified period of time for the construction or renovation of a wastewater treatment facility and the completion of any related scientific or engineering studies, reports, plans, or design specifications.
- (o) "Criterion" means any numerical element or narrative provision of the surface water quality standards representing an enforceable water quality condition.
- (p) "Department" means the Kansas department of health and environment.
- (q) "Designated use" means any of the beneficial uses specifically attributed to surface waters in K.A.R. 28-16-28d.
- (r) "Discharge" means the release of effluent, either directly or indirectly, into surface waters.
- (s) "Ecological integrity" means the natural or unimpaired structure and functioning of an aquatic or terrestrial ecosystem.
- (t) "Effluent" means the sewage or wastewater discharged from an artificial source.
- (u) "Existing use" means any of the beneficial uses described in K.A.R. 28-16-28d known to have occurred in, or to have been made of, a surface water or surface water segment on or after November 28, 1975.
- (v) "Fecal coliform bacteria" means facultatively anaerobic, gram negative, non-spore forming, rod-shaped bacteria which, when cultured under specific laboratory conditions, will ferment lactose, thereby producing acid, gas, or both.
- (w) "Federal clean water act" means the federal water pollution control act, 33 U.S.C. 1251 *et seq.*, as amended on February 4, 1987.
- (x) "Flow" means the volume of water moving past a stream cross-sectional plane per unit of time.
- (y) "Groundwater" means water located under the surface of the land that is or can be the source of supply for wells, springs, or seeps, or that is held in aquifers or the soil profile.
- (z) "Implementation policies" means written departmental policies and procedures used for carrying out specific provisions of the surface water quality standards.
- (aa) "Maximum contaminant level" means any of the enforceable standards for finished drinking water quality promulgated by the United States environmental protection agency pursuant to section 300g-1(b)(3) of the federal safe drinking water act, 42 U.S.C. 300f to 300j-9, as amended on June 19, 1986.
- (bb) "Median lethal concentration" means the concentration of a toxic substance or a mixture of toxic substances that is estimated to be lethal to 50 percent of the population of test organisms in an acute toxicity test.
- (cc) "Microfibers per liter (mfibers/L)" means the number of microscopic particles with a length-to-width ratio of 3:1 or greater present in a volume of one liter.
- (dd) "Microgram per liter (mg/L)" means the concentration of a substance at which one one-millionth of a gram ( $10^{-6}$  g) of the substance is present in a volume of one liter.
- (ee) "Milligram per liter (mg/L)" means the concentration of a substance at which one one-thousandth of a gram ( $10^{-3}$  g) of the substance is present in a volume of one liter.
- (ff) "Mixing zone" means the designated portion of a stream or lake where an effluent is incompletely mixed with the receiving surface water and where, in accordance with K.A.R. 28-16-28e, concentrations of certain pollutants may legally exceed water quality criteria applied in most other portions of the receiving surface water.
- (gg) "Mutagenic" means the property of directly or indirectly causing a mutation.
- (hh) "Nonpoint source" means any of a variety of diffuse sources of water pollution including, but not limited to, precipitation runoff from agricultural lands, the aerial drift and deposition of air contaminants, and the intrusion and seepage of subsurface brine or other contaminated groundwaters.
- (ii) "No-observed-effect level" means the highest concentration of a toxic substance, or a mixture of toxic substances, that has no statistically significant adverse effect on the population of test organisms in a chronic toxicity test.
- (jj) "Outstanding natural resource water" means any of the surface waters or surface water segments of exceptional recreational or ecological significance identified in the surface water register, as defined in K.A.R. 28-16-28b(uu), and afforded the highest level of water quality protection under the antidegradation provisions of K.A.R. 28-16-28c(a) and the mixing zone provisions of K.A.R. 28-16-28c(b).
- (kk) "pH" means the common logarithm of the reciprocal of the hydrogen ion concentration measured in moles per liter. pH is expressed on a scale that ranges from 0 to 14, with values less

than 7 being more acidic and values greater than 7 being more alkaline.

(ll) "Picocurie per liter (pCi/L)" means a volumetric unit of radioactivity equal to 2.22 nuclear transformations per minute per liter.

(mm) "Point source" means any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or floating craft, from which pollutants are or may be discharged. This term includes structures or site conditions which act to collect and convey stormwater runoff from roadways, urban areas or industrial sites. It does not include agricultural stormwater discharges or return flows from irrigated agricultural land.

(nn) "Pollution" means:

(1) contamination or other alteration of the physical, chemical, or biological properties of the surface waters of the state, including, but not limited to, changes in temperature, taste, odor, turbidity or color of the waters, or discharges of gaseous, liquid, solid, radioactive, microbiological, or other substances into surface waters in a manner which may create a nuisance or render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, industrial, agricultural, recreational or other beneficial uses, or to livestock, domestic animals, or native or naturalized plant or animal life; or

(2) any discharge that will or is likely to exceed state effluent standards predicated upon technologically-based effluent limitations.

(oo) "Potable water" means water that is suitable for drinking and cooking purposes in terms of both human health and aesthetic considerations.

(pp) "Precipitation runoff" means the rainwater, or the meltwater derived from snow, hail, sleet or other forms of atmospheric precipitation, that flows by gravity over the surface of the land and into streams, lakes or wetlands.

(qq) "Presedimentation sludge" means a slurry or suspension of residual solid materials derived from an initial step in the production of potable water. The solid materials include sand, silt and other easily settleable particles originating from the raw water supply.

(rr) "Private surface water" means any lake or wetland that is both located on and completely bordered by land under common private ownership.

(ss) "Seven-day, ten-year low flow (7Q10 flow)" means the seven-day average low flow having a recurrence frequency of once in ten years, as statistically determined from historical flow data. Where used in this regulation in the context of mixing zones, the term refers to a minimum stream flow occurring immediately upstream of a wastewater discharge and available, in whole or in part, for effluent dilution purposes.

(tt) "Site-specific criterion" means any criterion applicable to a given classified surface water segment and developed for the protection of the designated uses of that segment alone.

(uu) "Surface water register" means a list of the state's major classified surface waters, surface water use designations, and outstanding natural resource waters periodically updated and published by the department pursuant to the requirements of K.A.R. 28-16-28d(c)(2) and K.A.R. 28-16-28f(a).

(vv) "Surface water segment" means a delineated portion of a stream, lake or wetland.

(ww) "Surface waters" means all:

(1) streams, including rivers, creeks, brooks, sloughs, draws, arroyos, canals, springs, seeps and cavern streams, and any alluvial aquifers associated with these surface waters;

(2) lakes, including oxbow lakes and other natural lakes and man-made reservoirs, lakes and ponds; and

(3) wetlands, including water bodies meeting the technical definition for jurisdictional wetlands given in the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands," as published on January 10, 1989 by the federal interagency committee for wetland delineation and hereby adopted by reference.

(xx) "Surface waters of the state" means all surface waters occurring within the borders of the state of Kansas or forming a part of the border between Kansas and one of the adjoining states.

(yy) "Teratogenic" means having the property of causing abnormalities that originate from impairment of an event that is typical in embryonic or fetal development.

(zz) "Toxic substance" means any substance that produces deleterious physiological effects in humans, animals or plants.

(aaa) "Turbidity" means the cloudiness of water as measured by optical methods (nephelometry) and expressed in standard nephelometric units.

(bbb) "Use attainability analysis" means any study conducted or accepted by the department that is designed to determine whether a surface water or surface water segment supports, or is capable of supporting in the absence of artificial sources of pollution, one or more of the designated uses defined in K.A.R. 28-16-28d(a).

(ccc) "Variance" means the department's written approval and permitting of a proposed action that knowingly will result in a lack of conformity with one or more of the criteria of K.A.R. 28-16-28e(c) but that is deemed necessary based on regional socioeconomic hardship considerations.

(ddd) "Water-effect ratio (WER)" means the numerical toxicity (median lethal concentration or no-observed-effect level) of a chemical pollutant diluted in water from a given stream, lake or wetland divided by the numerical toxicity of the same pollutant diluted in laboratory water.

(eee) "Water quality certification" means the department's written finding that a proposed action that impacts upon water quality will comply with the terms and conditions of the surface water quality standards.

(fff) "Whole-effluent toxicity limitation" means any restriction imposed by the department on the overall acute or chronic toxicity of an effluent discharged into a surface water.

(ggg) "Zone of initial dilution" means the region of a surface water in the immediate vicinity of a discharge which comprises, in terms of volume, no more than ten percent of the mixing zone. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-165 and K.S.A. 65-171d; effective May 1, 1986; amended Aug. 29, 1994.)

**28-16-28c. General provisions.** (a) Anti-degradation.

(1) Levels of water quality necessary to protect existing and designated uses shall be maintained in surface waters of the state.

(2) If existing surface water quality is better than applicable water quality criteria established in these regulations, water quality shall not be lowered unless, after full satisfaction of the inter-governmental coordination and public participation requirements of the Kansas implementation policies on antidegradation, the department has determined that a lowering of water quality is needed to provide for important social and economic development in the geographical area in which the waters are located. In those instances where the department permits the lowering of

surface water quality, the existing and designated uses shall be fully protected and the highest statutory and regulatory requirements for all point sources of pollution and all cost effective and reasonable best management practices for nonpoint sources of pollution shall be achieved.

(3) Existing water quality shall not be lowered by artificial sources of pollution in any outstanding natural resource water designated in accordance with K.A.R. 28-16-28d(c).

(4) No degradation of surface water quality by artificial sources of pollution shall be allowed that would result in harmful effects on populations of any threatened or endangered species of aquatic or semi-aquatic life or terrestrial wildlife in a critical habitat as defined in the federal endangered species act, 16 U.S.C. 1531 *et seq.*, as amended on October 7, 1988, or in K.S.A. 1992 Supp. 32-960 and K.A.R. 115-15-3.

(5) Temporary sources of pollution complying with the provisions of K.A.R. 28-16-28c(d) and K.A.R. 28-16-28e(b), and producing only ephemeral surface water quality degradation not harmful to existing or designated uses, may be allowed by the department.

(6) Implementation of these antidegradation provisions for thermal discharges shall be consistent with the requirements of the federal clean water act.

(b) Mixing zones.

(1) General limitations. Mixing zones shall not extend across public drinking water intakes or swimming or boat ramp areas, nor exist in locations that will preclude the normal upstream or downstream movement or migration of aquatic organisms. Mixing zones associated with separate discharges shall not overlap unless it is demonstrated, to the department's satisfaction, that the overlapping will not result in a violation of any of the general water quality criteria set forth in K.A.R. 28-16-28e(b) or in an impairment of any of the existing or designated uses of the receiving surface water.

(2) Discharges into classified streams.

(A) No mixing zone within a classified stream shall extend beyond the middle of the nearest downstream current crossover point, where the main current flows from one bank to the opposite bank, or more than 300 meters downstream from the point of effluent discharge.

(B) If the ratio of receiving stream 7Q10 flow to discharge design flow is less than 3:1, the cross-sectional area of the mixing zone shall not exceed

the average cross-sectional area of the stream, as measured immediately upstream of the discharge during the 7Q10 flow.

(C) If the ratio of receiving stream 7Q10 flow to discharge design flow is equal to or greater than 3:1, the cross-sectional area of the mixing zone shall not exceed the following percentage of the average cross-sectional area of the stream, as measured immediately upstream of the discharge during the 7Q10 flow:

(i) 25 percent of the average cross-sectional area for any stream designated as an outstanding natural resource water or special aquatic life use water pursuant to K.A.R. 28-16-28d(c);

(ii) 50 percent of the average cross-sectional area for any stream designated as an expected aquatic life use water pursuant to K.A.R. 28-16-28d(c); or

(iii) 100 percent of the average cross-sectional area for any stream designated as a restricted aquatic life use water pursuant to K.A.R. 28-16-28d(c).

(D) In the calculation of the mixing zone cross-sectional area in K.A.R. 28-16-28c(b)(2)(B) and (C), an assumed 7Q10 flow of 0.003 cubic meters per second shall be applied to any outstanding natural resource water or special aquatic life use water whose actual 7Q10 flow is less than 0.003 cubic meters per second; an assumed 7Q10 flow of 0.03 cubic meters per second shall be applied to any expected aquatic life use water or restricted aquatic life use water whose actual 7Q10 flow is less than 0.03 cubic meters per second.

(3) Discharges into classified lakes. Mixing zones shall be prohibited by the department from extending into any lake designated as an outstanding natural resource water or special aquatic life use water pursuant to K.A.R. 28-16-28d(c). Mixing zones in lakes designated as expected aquatic life use waters may be allowed by the department provided they do not extend farther than 50 meters from the point of effluent discharge or comprise more than one percent of the total volume of the receiving lake as measured at conservation pool.

(4) Discharges into classified wetlands. Mixing zones shall be prohibited by the department from extending into any classified lacustrine or palustrine wetland as defined in the United States fish and wildlife service's "Classification of Wetlands and Deepwater Habitats of the United States," as published in December 1979 and hereby adopted by reference.

(5) Where site conditions preclude the rapid dispersion and dilution of effluent within the receiving surface water or where, in the opinion of the department, the presence of a mixing zone would unduly jeopardize human health or any of the existing or designated uses of the receiving surface water, the department shall reserve the right to prohibit the use of mixing zones or to place more stringent limitations on mixing zones than those stipulated in K.A.R. 28-16-28c(b)(2) and (3).

(c) Special conditions. The following special conditions shall not remove the obligation to design, build, or use the required or recommended pollution control structures or methods to control point and nonpoint sources of pollution as defined in K.A.R. 28-16-28b(hh) and (mm).

(1) Low flow. Classified streams may be excluded by the department from the application of some or all of the requirements of K.A.R. 28-16-28e(c) when stream flow is less than the 7Q10 flow or the assumed 7Q10 flow as described in K.A.R. 28-16-28c(b)(2)(D).

(2) High flow. Classified streams may be excluded by the department from the application of the numerical criteria for fecal coliform bacteria in K.A.R. 28-16-28e(c) when stream flow exceeds 50% of the estimated two-year flood flow.

(3) Effluent-created flow. For any classified stream segment in which continuous flow is sustained primarily through the discharge of treated effluent, and in which all designated uses are otherwise unattainable due to low or nonexistent flow, the discharger shall not be required to provide treatment beyond that treatment required in K.A.R. 28-16-28c(d)(1) unless such discharge would otherwise result in violations of one or more of the general surface water quality criteria listed in K.A.R. 28-16-28e(b) or in an impairment of any of the existing or designated uses of a downstream classified surface water segment.

(d) Treatment requirements.

(1) All effluent shall receive appropriate minimum levels of treatment as required by the federal clean water act.

(2) Effluent shall receive a higher level of treatment than that stipulated in K.A.R. 28-16-28c(d)(1), (3), or (4) if the department determines that this higher level of treatment is needed to fully comply with the terms and conditions of K.A.R. 28-16-28c(a) or K.A.R. 28-16-28e.

(3) Waste stabilization ponds providing at least 120 days detention and with at least three cells,

and treating domestic sewage, and meeting "Minimum Standards of Design" as published by the department on August 17, 1978 and hereby adopted by reference, shall be deemed to provide acceptable levels of disinfection and ammonia removal.

(4) Wastewater effluent shall be disinfected if it is determined by the department that the discharge of nondisinfected wastewater will cause a threat to public health. Situations which constitute a threat to public health shall include but not be limited to instances in which a water body is known or likely to be used for:

- (A) contact or noncontact recreation; or
- (B) domestic water supply.

(e) Analytical testing. All methods of sample collection, preservation, and analysis used in applying any of these rules and regulations shall be in accordance with those methods prescribed by the department.

(f) Application of standards to privately-owned surface waters. The application of water quality standards to privately owned water bodies shall be subject to the provisions of K.S.A. 65-171d. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-165 and 65-171d; effective May 1, 1986; amended, T-87-8, May 1, 1986; amended May 1, 1987; amended Aug. 29, 1994.)

**28-16-28d. Surface water use designation and classification.** (a) Designated uses of surface waters are defined as follows.

(1) "Agricultural water supply use" means the use of surface water for agricultural purposes including:

- (A) "Irrigation," which means the withdrawal of surface water for application onto land; and
- (B) "Livestock watering," which means the provision of surface water to livestock for consumption.

(2) "Aquatic life support use" means the use of surface water for the maintenance of the ecological integrity of streams, lakes and wetlands, including the sustained growth and propagation of native aquatic life, indigenous or migratory semi-aquatic life, or terrestrial wildlife directly or indirectly dependent on surface water for survival.

(A) "Special aquatic life use waters" means surface waters that contain combinations of habitat types and indigenous biota not found commonly in the state, or surface waters that contain representative populations of threatened or endangered species.

(B) "Expected aquatic life use waters" means surface waters containing habitat types and indigenous biota commonly found or expected in the state.

(C) "Restricted aquatic life use waters" means surface waters containing indigenous biota limited in abundance or diversity by the physical quality of the habitat compared to more suitable habitats in adjacent waters. Habitat availability and habitat diversity in restricted aquatic life use waters are severely limited due to natural deficiencies or artificial modifications.

(3) "Domestic water supply use" means the use of surface water, after appropriate treatment, for the production of potable water.

(4) "Food procurement use" means the use of surface water for the obtaining of edible forms of aquatic or semi-aquatic life for human consumption.

(5) "Groundwater recharge use" means the use of surface water for the replenishing of fresh or usable groundwater resources. This use may involve the infiltration and percolation of surface water through sediments and soils or the direct injection of surface water into underground aquifers.

(6) "Industrial water supply use" means the use of surface water for non-potable purposes by industry, including withdrawals for cooling or process water.

(7) "Recreational use" means the use of surface water for contact or noncontact recreation.

(A) "Contact recreational use" means recreation where the body is immersed in surface water to the extent that some inadvertent ingestion of water is probable. This use includes, but is not limited to, swimming, skin diving, water skiing, and wind surfing.

(B) "Noncontact recreational use" means recreation where ingestion of surface water is not probable. This use includes, but is not limited to, wading, boating, fishing, trapping, mussel harvesting, and hunting.

(b) Surface water classification. Surface waters shall be classified as follows:

(1) Classified streams shall include all streams with mean summer base flows exceeding 0.003 cubic meters per second. Regardless of flow, a stream shall be classified if studies conducted or accepted by the department show that pooling of water during periods of zero flow provides important refuges for aquatic life and permits bio-

logical recolonization of intermittently flowing segments.

(2) Classified lakes shall be all lakes owned by federal, state, county or municipal authorities and all privately owned lakes that serve as public drinking water supplies or that are open to the general public for contact or noncontact recreation.

(3) Classified wetlands shall be all wetlands owned by federal, state, county, or municipal authorities, exclusive of artificial wetlands created for the purpose of wastewater treatment, all privately owned wetlands open to the general public for hunting, trapping or other forms of noncontact recreation, and all wetlands designated as outstanding natural resource waters or special aquatic life use waters pursuant to K.A.R. 28-16-28d(c).

(c) Assignment of uses to surface waters.

(1) At a minimum, all classified surface waters shall be designated for the noncontact recreational use and one of the three categories of aquatic life support use described in K.A.R. 28-16-28d(a)(2). Classified surface waters shall be designated for uses based upon the results of use attainability analyses conducted or accepted by the department. The provisions of the federal water quality standards regulation, 40 CFR 131.10, as in effect on July 1, 1993, shall be followed and are hereby adopted by reference.

(2) A register of surface water use designations and outstanding natural resource waters shall be maintained by the department. This register shall identify the designated uses of all major classified streams and lakes and list those streams, lakes and wetlands designated by the department as outstanding natural resource waters, special aquatic life use waters, or restricted aquatic life use waters. In the application of the current regulations, surface water use designations and outstanding natural resource waters shall be those identified in the "Kansas Surface Water Register," as published by the department on June 20, 1994 and hereby adopted by reference.

(3) Beneficial use designations for classified streams, lakes and wetlands not listed in the surface water register shall be determined by the department on a case-by-case basis in accordance with the requirements of K.A.R. 28-16-28d(c)(1). (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-165 and 65-171d; effective May 1, 1986; amended, T-87-8, May 1, 1986; amended May 1, 1987; amended Aug. 29, 1994.)

28-16-28e. **Surface water quality criteria.**

(a) Criteria development guidance. The development of surface water quality criteria for substances not listed in these standards shall be guided by water quality criteria published by the United States environmental protection agency. When the department finds that the criteria listed herein are underprotective or overprotective for a given surface water segment, the department may, in accordance with K.A.R. 28-16-28f(f), develop and apply appropriate site-specific criteria using bioassessment methods or other related scientific procedures, including those procedures described in the United States environmental protection agency's "Water Quality Standards Handbook," second edition, as published in September 1993.

(b) General criteria for surface waters. The following criteria shall apply to all surface waters, regardless of classification.

(1) Surface waters shall be free, at all times, from the harmful effects of substances that originate from artificial sources of pollution and that produce any public health hazard, nuisance condition, or impairment of designated use.

(2) Hazardous materials derived from artificial sources, including, but not limited to, toxic chemicals, radioactive isotopes, and infectious microorganisms derived directly or indirectly from point or nonpoint sources, shall not occur in surface waters at concentrations or in combinations that jeopardize the public health or the survival or well-being of livestock, domestic animals, terrestrial wildlife, or aquatic or semi-aquatic life.

(3) Surface waters shall be free of all discarded solid materials, including trash, garbage, rubbish, offal, grass clippings, discarded building or construction materials, car bodies, tires, wire, or other unwanted or discarded materials. The placement of stone and concrete rubble for bank stabilization shall be acceptable if authorized in advance by the department.

(4) Surface waters shall be free of floating debris, scum, foam, froth, or other floating materials directly or indirectly attributable to artificial sources of pollution.

(5) Oil and grease from artificial sources shall not cause visible films to form upon the surface of the water or upon submerged substrate or adjoining shorelines, nor shall these materials cause a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines.

(6) Surface waters shall be free of deposits of sludge or fine solids attributable to artificial sources of pollution.

(7) Taste and odor-producing substances of artificial origin shall not occur in surface waters at concentrations that interfere with the production of potable water by conventional water treatment processes, or impart unpalatable flavor to edible aquatic or semi-aquatic life or terrestrial wildlife, or result in noticeable odors in the vicinity of surface waters.

(8) The natural appearance of surface waters shall not be altered by the addition of color-producing or turbidity-producing substances of artificial origin.

(c) Criteria for designated uses of surface waters. The following criteria shall apply to all classified surface waters designated for the indicated beneficial uses.

(1) Agricultural water supply use. The water quality criteria for irrigation and livestock watering set forth in Table 1a of K.A.R. 28-16-28e(d) shall not be exceeded outside of mixing zones due to artificial sources of pollution.

(2) Aquatic life support use.

(A) Dissolved oxygen. The concentration of dissolved oxygen in surface waters shall not be lowered below 5.0 mg/L by the influence of artificial sources of pollution.

(B) Nutrients. The introduction of plant nutrients into streams, lakes or wetlands from artificial sources shall be controlled to prevent the accelerated succession or replacement of aquatic biota or the production of undesirable quantities or kinds of aquatic life.

(C) pH. Artificial sources of pollution shall not cause the pH of any surface water outside of a zone of initial dilution to be below 6.5 nor above 8.5.

(D) Suspended solids. Suspended solids added to surface waters by artificial sources shall not interfere with the behavior, reproduction, physical habitat, or other factors related to the survival and propagation of aquatic or semi-aquatic life or terrestrial wildlife. In the application of this provision, suspended solids associated with discharges of presedimentation sludge from water treatment facilities shall be deemed noninjurious to aquatic and semi-aquatic life and terrestrial wildlife, provided that such discharges comply fully with the requirements of K.A.R. 28-16-28e(b) (6) and (8) and K.A.R. 26-16-28e(c) (2) (F).

(E) Temperature.

(i) Except as provided in K.A.R. 28-16-28e(c) (2) (E) (ii), a discharge shall not elevate the temperature of a receiving surface water beyond the zone of initial dilution above 327C. Heat of artificial origin shall not be added to a surface water in excess of the amount that will raise the temperature of the water beyond the mixing zone more than 37C above natural conditions. The normal daily and seasonal temperature variations occurring within a surface water before the addition of heat of artificial origin shall be maintained.

(ii) Temperature criteria applicable to industrial cooling water recycling reservoirs that meet the requirements for classification presented in K.A.R. 28-16-28d(b) (2) shall be established by the department on a case-by-case basis.

(F) Toxic substances.

(i) Conditions of acute toxicity shall not occur in classified surface waters outside of zones of initial dilution, nor shall conditions of chronic toxicity occur in classified surface waters outside of mixing zones.

(ii) Acute criteria for the aquatic life support use given in tables 1a, 1b and 1c of K.A.R. 28-16-28e(d) shall apply beyond the edge of the zone of initial dilution. Chronic criteria for the aquatic life support use given in tables 1a, 1b and 1c of K.A.R. 28-16-28e(d) shall apply beyond the edge of the mixing zone.

(iii) When a discharge contains a toxic substance that lacks any published criteria for the aquatic life support use, or when a discharge contains a complex mixture of toxic substances capable of additive or synergistic interactions, bioassessment methods and procedures shall be used by the department to establish whole-effluent toxicity limitations which are consistent with paragraph (2) (f) (i) of this subsection.

(3) Domestic water supply use.

(A) Except as provided in K.A.R. 28-16-28e(c) (3) (B), criteria listed in Table 1a of K.A.R. 28-16-28e(d) for domestic water supply use shall not be exceeded at any point of domestic water supply diversion.

(B) Where surface water concentrations of chloride or sulfate, or both, exceed the criteria listed in Table 1a of K.A.R. 28-16-28e(d) due to the naturally occurring intrusion of highly mineralized groundwater, domestic water supply criteria for these ions shall be determined by the department on a case-by-case basis. Criteria developed by the department pursuant to this pro-

vision shall be intended to prevent any further degradation in surface water quality.

(C) Any substance derived from an artificial source that, alone or in combination with other synthetic or naturally occurring substances, causes toxic, carcinogenic, teratogenic or mutagenic effects in humans shall be limited to non-harmful concentrations in surface waters. Unless site-specific water quality conditions warrant the promulgation of more protective criteria under the provisions of K.A.R. 28-16-28e(a) and K.A.R. 28-16-28f(f), maximum contaminant levels for toxic, carcinogenic, teratogenic or mutagenic substances promulgated by the United States environmental protection agency pursuant to section 300g-1 of the federal safe drinking water act, 42 U.S.C. 300f to 300j-9, as amended on June 19, 1986, shall be deemed non-harmful by the department and adopted as domestic water supply criteria.

(4) Food procurement use.

(A) Criteria listed in Table 1a of K.A.R. 28-16-28e(d) for food procurement use shall not be exceeded outside of a mixing zone due to any artificial source of pollution.

(B) Substances that can bioaccumulate in the tissues of edible aquatic or semi-aquatic life or wildlife through bioconcentration or biomagnification shall be limited in surface waters to concentrations that result in no harm to human consumers of these tissues. For bioaccumulative carcinogens, surface water concentrations corresponding to a cancer risk level of less than 0.000001 ( $10^{-6}$ ) in human consumers of aquatic or semi-aquatic life or wildlife shall be deemed non-harmful by the department and adopted as food procurement criteria. Average rates of tissue consumption and lifetime exposure shall be assumed by the department in the estimation of the cancer risk level.

(5) Groundwater recharge use. In surface waters designated for the groundwater recharge use, water quality shall be such that, at a minimum, degradation of groundwater quality does not occur. Degradation shall include any measurable in-

crease in the concentration of any chemical or radiological contaminant or infectious microorganism in groundwater resulting from surface water infiltration or injection.

(6) Industrial water supply use. Surface water quality criteria for industrial water supplies shall be determined by the department on a case-by-case basis.

(7) Recreational use.

(A) General. The introduction of plant nutrients into surface waters designated for contact or noncontact recreational use shall be controlled to prevent the development of objectional concentrations of algae or algal by-products or nuisance growths of submersed, floating or emergent aquatic vegetation.

(B) Contact recreation. Artificial sources of pollution shall not cause concentrations of fecal coliform bacteria in surface waters designated for contact recreational use to exceed a geometric mean of 200 organisms per 100 milliliters outside of mixing zones. Calculation of the geometric mean shall be based on the analysis of at least five consecutive samples collected during separate 24-hour periods. No more than 10 percent of samples taken during any 30-day period shall exceed 400 organisms per 100 milliliter sample. These criteria shall be in effect from April 1 through October 31 of each year.

(C) Noncontact recreation. Artificial sources of pollution shall not cause concentrations of fecal coliform bacteria in surface waters designated for noncontact recreational use to exceed 2,000 organisms per 100 milliliters outside of mixing zones. This criterion shall be in effect from January 1 through December 31 of each year.

(8) Multiple uses. If a classified surface water or surface water segment is designated for more than one beneficial use pursuant to K.A.R. 28-16-28d(c), the water quality of the surface water or surface water segment shall comply with the most stringent of the applicable water quality criteria.

(d) Tables.

1a. Numeric criteria.

PARAMETER	USE CATEGORY					
	AQUATIC LIFE		AGRICULTURE		PUBLIC HEALTH	
	ACUTE	CHRONIC	LIVESTOCK	IRRIGATION	FOOD PROCUREMENT	DOMESTIC WATER SUPPLY
<b>RADIONUCLIDES (pCi/L)</b>						
gross beta radioactivity	a	a	a	a	a	50
gross alpha particles including radium-226, but not radon or uranium	a	a	a	a	a	15
radium 226 and 228 combined	a	a	a	a	a	5
strontium 90	a	a	a	a	a	8
tritium	a	a	a	a	a	20,000
<b>METALS (mg/L)</b>						
antimony, total	88	30	a	a	4,500	6
arsenic, total	a	50	200	100	a	50
arsenic (III)	379	50	a	a	a	a
arsenic (V)	850	48	a	a	a	a
barium	a	a	a	a	a	2,000
beryllium, total	130	5.3	a	100	0.13	4
boron, total	a	a	5,000	750	a	a
cadmium, total	table 1b	table 1b	20	10	170	5
chromium, total	a	40	1,000	100	a	100
chromium (III)	table 1b	table 1b	a	a	3,433,000	50
chromium (VI)	17	12	a	a	3,400	50
copper, total	table 1b	table 1b	500	200	a	1,300
lead, total	table 1b	table 1b	100	5,000	a	15
mercury, total	2.8	0.012	10	a	0.146	2
nickel, total	table 1b	table 1b	500	200	100	100
selenium, total	20	5	50	20	6,800	50
selenium (V)	11.2	a	a	a	a	a
silver, total	table 1b	a	a	a	a	50
thallium, total	1,400	40	a	a	48	2
zinc, total	table 1b	table 1b	25,000	2,000	a	a
<b>OTHER INORGANIC SUBSTANCES (mg/L)</b>						
ammonia	table 1c	table 1c	a	a	a	a
asbestos (mfibers/L)	a	a	a	a	a	7,000,000
chloride	860,000	230,000	a	a	a	250,000
chlorine, total residual	19	11	a	a	a	a
cyanide (free)	22	5.2	a	a	220,000	200
fluoride	a	a	2,000	1,000	a	2,000
nitrate (as N)	a	a	a	a	a	10,000
nitrite 1 nitrate (as N)	a	a	100,000	a	a	10,000
phosphorus, elemental (white)	a	0.1	a	a	a	a
sulfate	a	a	1,000,000	a	a	250,000
<b>ORGANIC SUBSTANCES (mg/L)</b>						
<b>Benzenes</b>						
aminobenzene (aniline)	14	6.7	a	a	a	a
benzene	5,300	a	a	a	40	5
chlorobenzene	250	50	a	a	21,000	100
dichlorobenzenes, total	1,120	763	a	a	2,600	a
o-dichlorobenzene	1,120	763	a	a	2,600	600
m-dichlorobenzene	1,120	763	a	a	2,600	600
p-dichlorobenzene	a	a	a	a	2,600	75
other chlorinated benzenes, total	250	50	a	a	a	a
1,2,4-trichlorobenzene	250	a	a	a	a	70
1,2,4,5-tetrachlorobenzene	250	50	a	a	48	a
pentachlorobenzene	250	50	a	a	85	a
hexachlorobenzene	6.0	3.7	a	a	0.00074	1
ethylbenzene	32,000	a	a	a	28,718	700

PARAMETER	USE CATEGORY					
	AQUATIC LIFE		AGRICULTURE		PUBLIC HEALTH	
	ACUTE	CHRONIC	LIVESTOCK	IRRIGATION	FOOD PROCUREMENT	DOMESTIC WATER SUPPLY
nitrobenzene	27,000	a	a	a	1,900	a
pentachloronitrobenzene	250	50	a	a	a	a
vinylbenzene (styrene)	a	a	a	a	a	100
Ethers .....						
chloroalkyl ethers, total	238,000	a	a	a	a	a
bis(2-chloroethyl)ether	238,000	a	a	a	1.36	a
bis(2-chloroisopropyl)ether	238,000	a	a	a	0.00184	a
bis(chloromethyl)ether	238,000	a	a	a	0.00184	a
2-chloroethyl vinyl ether	360	120	a	a	a	a
halogenated ethers, total	360	122	a	a	a	a
chloromethyl methyl ether	238,000	a	a	a	0.00184	a
4,4'-dibromodiphenyl ether	360	120	a	a	a	a
hexabromodiphenyl ether	360	120	a	a	a	a
nonabromodiphenyl ether	360	120	a	a	a	a
pentabromodiphenyl ether	360	120	a	a	a	a
tetrabromodiphenyl ether	360	120	a	a	a	a
tribromodiphenyl ether	360	120	a	a	a	a
Halogenated Hydrocarbons .....						
chlorinated ethanes						
1,2-dichloroethane	18,000	2,000	a	a	243	5
1,1,1-trichloroethane	18,000	a	a	a	173,077	200
1,1,2-trichloroethane	18,000	9,400	a	a	41.8	5
tetrachloroethanes, total	9,320	a	a	a	a	a
1,1,1,2-tetrachloroethane	9,320	a	a	a	a	a
1,1,1,2,2-tetrachloroethane	9,320	2,400	a	a	10.7	a
pentachloroethane	7,240	1,100	a	a	a	a
hexachloroethane	980	540	a	a	8.74	a
chlorinated ethylenes, total	11,600	a	a	a	1.85	a
1,1-dichloroethylene	11,600	a	a	a	1.85	7
cis-1,2-dichloroethylene	11,600	a	a	a	1.85	70
trans-1,2-dichloroethylene	11,600	a	a	a	140,000	100
trichloroethylene	45,000	21,900	a	a	80.7	5
tetrachloroethylene	5,280	840	a	a	8.85	5
chlorinated propanes/propenes						
1,2-dichloropropane	23,000	5,700	9.0	a	39	5
1,3-dichloropropene	6,600	244	a	a	14.1	a
Other Halogenated Hydrocarbons						
halogenated methanes, total	11,000	a	a	a	15.7	100
bromomethane	11,000	a	a	a	15.7	a
1,2-dibromoethane	a	a	a	a	a	0.05
tribromomethane (bromoform)	11,000	a	a	a	15.7	100
bis(2-chloroethoxy) methane	11,000	a	a	a	15.7	a
bromodichloromethane	11,000	a	a	a	15.7	100
bromochloromethane	11,000	a	a	a	15.7	a
bromotrichloromethane	11,000	a	a	a	15.7	a
dibromochloromethane	11,000	a	a	a	15.7	100
dibromochloropropane	a	a	a	a	15.7	0.2
dibromodichloromethane	11,000	a	a	a	15.7	a
dichlorodifluoromethane	11,000	a	a	a	15.7	a
dichloromethane	11,000	a	a	a	1,600	5
trichloromethane (chloroform)	28,900	1,240	a	a	15.7	100
tribromochloromethane	11,000	a	a	a	15.7	a
trichlorofluoromethane	11,000	a	a	a	15.7	a
tetrachloromethane (carbon tetrachloride)	35,200	a	a	a	6.94	5
di(2-ethylhexyl)adipate	a	a	a	a	a	500
hexachlorobutadiene	90	9.3	a	a	50	a
hexachlorocyclopentadiene	7	5.2	a	a	206	50
vinyl chloride	a	a	a	a	525	2

PARAMETER	USE CATEGORY					
	AQUATIC LIFE		AGRICULTURE		PUBLIC HEALTH	
	ACUTE	CHRONIC	LIVESTOCK	IRRIGATION	FOOD PROCUREMENT	DOMESTIC WATER SUPPLY
Miscellaneous Organics .....						
dioxin (2,3,7,8 TCDD)	0.01	0.00001	a	a	0.000000014	0.00000003
isosphorone	117,000	a	a	a	520,000	a
polychlorinated biphenyls, total	2	0.014	a	a	0.0000079	0.5
tributyltin oxide	0.149	0.026	a	a	a	a
Nitrogen Compounds .....						
nitrosamines, total	5,850	a	a	a	1.24	a
N-nitrosodibutylamine	5,850	a	a	a	0.587	a
N-nitrosodiethanolamine	5,850	a	a	a	1.24	a
N-nitrosodiethylamine	5,850	a	a	a	1.24	a
N-nitrosodimethylamine	5,850	a	a	a	1.6	a
N-nitrosodiphenylamine	5,850	a	a	a	16.1	a
N-nitrosodi-n-propylamine	a	a	a	a	1.24	a
N-nitrosopyrrolidine	5,850	a	a	a	91.9	a
acrylonitrile	7,550	2,600	a	a	0.65	a
benzidene	2,500	a	a	a	0.000535	a
3,3'-dichlorobenzidine	a	a	a	a	0.02	a
1,2-diphenyl hydrazine	270	a	a	a	0.56	a
Polynuclear Aromatic Hydrocarbons, total	a	a	a	a	0.0311	0.2
acenaphthene	1,700	520	a	a	a	a
acenaphthylene	a	a	a	a	0.0311	a
anthracene	a	a	a	a	0.0311	a
benzo(a)anthracene	a	a	a	a	0.0311	0.2
benzo(a)pyrene	a	a	a	a	0.0311	0.2
benzo(b)fluoranthene	a	a	a	a	0.0311	0.2
benzo(g,h,i)perylene	a	a	a	a	0.0311	a
benzo(k)fluoranthene	a	a	a	a	0.0311	0.2
chrysene	a	a	a	a	0.0311	0.2
dibenzo(a,h)anthracene	a	a	a	a	0.0311	0.3
fluoranthene	3,980	a	a	a	a	a
fluorene	a	a	a	a	0.0311	a
ideno(1,2,3-cd)pyrene	a	a	a	a	0.0311	0.4
naphthalene	2,300	620	a	a	a	a
phenanthrene	30	6.3	a	a	0.0311	a
pyrene	a	a	a	a	0.0311	a
Phthalate Esters .....						
phthalates, total	940	3	a	a	a	a
butylbenzyl phthalate	a	a	a	a	5,200	100
di(2-ethylhexyl)phthalate	400	360	a	a	5,000	4
dibutyl phthalate	940	3	a	a	154,000	a
diethyl phthalate	a	a	a	a	1,800,000	5
dimethyl phthalate	940	3	a	a	2,900,000	a
Phenolic Compounds .....						
phenol	10,200	2,560	a	a	4,600,000	a
2,4-dimethyl phenol	1,300	530	a	a	2,300	a
chlorinated phenols						
2-chlorophenol	4,380	2,000	a	a	400	a
3-chlorophenol	a	a	a	a	29,000	a
2,4-dichlorophenol	2,020	365	a	a	3,090	a
2,4,5-trichlorophenol	100	63	a	a	a	a
2,4,6-trichlorophenol	a	970	a	a	3.6	a
pentachlorophenol	table 1b	table 1b	a	a	8.2	1
3-methyl-4-chlorophenol	30	a	a	a	a	a
nitrophenols, total	230	150	a	a	a	a
2,4-dinitrophenol	a	a	a	a	765	a
4,6-dinitro-o-cresol	a	a	a	a	765	a
Toluenes .....						
toluene	17,500	a	a	a	424,000	1,000
dinitrotoluenes, total	330	230	a	a	9.1	a

PARAMETER	USE CATEGORY					
	AQUATIC LIFE		AGRICULTURE		PUBLIC HEALTH	
	ACUTE	CHRONIC	LIVESTOCK	IRRIGATION	FOOD PROCUREMENT	DOMESTIC WATER SUPPLY
2,4-dinitrotoluene	330	230	a	a	9.1	a
xylene	a	a	a	a	a	10,000
PESTICIDES (mg/L)						
acrolein	68	21	a	a	780	a
acrylamide	a	a	a	a	a	0.01
alachlor (lasso)	760	76	100	a	a	2
aldicarb	a	a	a	a	a	3
aldicarb sulfone	a	a	a	a	a	2
aldicarb sulfoxide	a	a	a	a	a	3
aldrin	3	0.001	1	a	0.000079	a
atrazine (aatrex)	170	1	a	a	a	3
bromoxynil (MCPA)	a	a	20	a	a	a
carbaryl (sevin)	a	0.02	100	a	a	a
carbofuran (furan)	a	a	100	a	a	40
chlordane	2.4	0.0043	3	a	0.00048	2
chlorpyrifos	0.083	0.041	100	a	a	a
2,4-D	a	a	a	a	a	70
dacthal (DCPA)	a	14,300	a	a	a	a
dalapon	a	110	a	a	a	200
diazinon (spectracide)	a	0.08	100	a	a	a
DDT and Metabolites .....						
4,4'-DDE (p,p'-DDE)	1,050	a	a	a	0.00059	a
4,4'-DDD (p,p'-DDD)	a	a	a	a	0.00084	a
DDT, total	1.1	0.001	50	a	0.000024	a
dieldrin	1.0	0.0019	1	a	0.000076	a
dinoseb (DNBP)	a	a	a	a	a	7
diquat	a	a	a	a	a	20
disulfoton (disyston)	a	a	100	a	a	a
endosulfan, total	0.22	0.056	a	a	159	a
alpha-endosulfan	0.22	0.056	a	a	159	a
beta-endosulfan	0.22	0.056	a	a	159	a
endosulfan sulfate	a	a	a	a	159	a
endothall	a	a	a	a	a	100
endrin	0.18	0.0023	0.5	a	0.81	2
endrin aldehyde	a	a	a	a	0.81	a
epichlorohydrin	a	a	a	a	a	4
ethylene dibromide	a	a	a	a	a	0.05
fenchlorfos (ronnel)	a	a	100	a	a	a
glyphosate (roundup)	a	a	a	a	a	700
guthion	a	0.010	100	a	a	a
heptachlor	0.52	0.0038	0.1	a	0.00029	0.4
heptachlor epoxide	0.52	0.0038	0.1	a	0.00029	0.2
hexachlorocyclohexane	100	a	a	a	a	a
alpha-HCH	100	a	a	a	0.0031	a
beta-HCH	100	a	a	a	0.0547	a
delta-HCH	100	a	a	a	a	a
gamma-HCH (lindane)	2	0.08	5	a	0.0625	0.2
technical-HCH	a	a	a	a	0.0414	a
malathion	a	0.10	100	a	a	a
methoxychlor	a	0.03	1,000	a	a	40
methyl parathion	a	a	100	a	a	a
metribuzin (sencor)	a	100	a	a	a	a
mirex	a	0.001	a	a	0.000097	a
oxamyl (vydate)	a	a	a	a	a	200
parathion	0.065	0.013	100	a	a	a
picloram (tordon)	a	a	a	a	a	500
propachlor (ramrod)	a	8	a	a	a	a
simazine (princep)	a	a	10	a	a	4

PARAMETER	USE CATEGORY					
	AQUATIC LIFE		AGRICULTURE		PUBLIC HEALTH	
	ACUTE	CHRONIC	LIVESTOCK	IRRIGATION	FOOD PROCUREMENT	DOMESTIC WATER SUPPLY
toxaphene	0.73	0.0002	5	a	0.00073	3
2,4,5-T	a	a	2	a	a	a
2,4,5-TP (silvex)	a	a	a	a	a	50

a—criterion not available

Table 1b. Formulae for calculation of hardness-dependent aquatic life support criteria for chromium III and total cadmium, total copper, total lead, total nickel, total silver and total zinc and pH-dependent aquatic life support criteria for pentachlorophenol. A WER value of 1.0 is applied in the hardness-dependent equations for total metals unless a site-specific WER has been determined and adopted by the department in accordance with K.A.R. 28-16-28e(a) and K.A.R. 28-16-28f(f). Hardness values in metal formulae are entered in units of mg/L as CaCO<sub>3</sub>. Pentachlorophenol formulae apply only over the pH range 6.5-8.5.

CADMIUM (ug/L):

acute criterion 5 WER  $[[EXP[(1.1280*(LN(hardness)))-3.828]]*1.2]$

chronic criterion 5 WER  $[[EXP[(0.7852*(LN(hardness)))-3.490]]*1.2]$

CHROMIUM III (ug/L):

acute criterion 5 WER  $[[EXP[(0.819*(LN(hardness)))-1.36880]]*1.2]$

chronic criterion 5 WER  $[[EXP[(0.819*(LN(hardness)))-1.5610]]*1.2]$

COPPER (ug/L):

acute criterion 5 WER  $[[EXP[(0.9422*(LN(hardness)))-1.464]]*1.2]$

chronic criterion 5 WER  $[[EXP[(0.8545*(LN(hardness)))-1.465]]*1.2]$

LEAD (ug/L):

acute criterion 5 WER  $[[EXP[(1.273*(LN(hardness)))-1.460]]*2.0]$

chronic criterion 5 WER  $[[EXP[(1.273*(LN(hardness)))-4.705]]*4.0]$

NICKEL (ug/L):

acute criterion 5 WER  $[[EXP[(0.846*(LN(hardness)))-1.3612]]*1.2]$

chronic criterion 5 WER  $[[EXP[(0.846*(LN(hardness)))-1.1645]]*1.2]$

PENTACHLOROPHENOL (ug/L):

acute criterion 5  $EXP[(1.005*pH)-4.830]$

chronic criterion 5  $EXP[(1.005*pH)-5.290]$

SILVER (ug/L):

acute criterion 5 WER  $[[EXP[(1.72*(LN(hardness)))-6.52]]*1.2]$

ZINC (ug/L):

acute criterion 5 WER  $[[EXP[(0.8473*(LN(hardness)))-1.08604]]*1.2]$

chronic criterion 5 WER  $[[EXP[(0.8473*(LN(hardness)))-1.07614]]*1.2]$

Table 1c. Temperature- and pH-dependent aquatic life support criteria for total ammonia. For other temperature and pH combinations within the temperature and pH ranges shown, acute and chronic criteria for total ammonia are derivable through linear interpolation of the bracketing table values.

CRITERION ACUTE CONCENTRATIONS  
(TOTAL AMMONIA AS N, MG/L)

pH	TEMPERATURE (DEGREES CELSIUS)						
	0.0	5.0	10.0	15.0	20.0	25.0	30.0
6.50	41.75	39.14	37.06	36.03	34.41	34.04	24.06
6.75	38.45	35.84	34.37	32.75	31.74	31.57	22.33
7.00	33.39	31.69	29.66	28.98	28.18	27.76	19.65
7.25	27.77	25.95	24.69	23.51	23.08	22.74	16.13
7.50	20.69	19.49	18.63	17.88	17.49	17.63	12.57
7.75	14.51	13.74	13.07	12.57	12.07	12.37	8.85
8.00	9.51	8.93	8.52	8.28	8.16	8.24	5.95
8.25	5.38	5.07	4.86	4.75	4.72	4.83	3.54
8.50	3.06	2.90	2.80	2.77	2.79	2.91	2.18
8.75	1.75	1.68	1.64	1.65	1.71	1.83	1.42
9.00	1.02	0.99	0.99	1.03	1.10	1.22	0.99

CRITERION CHRONIC CONCENTRATIONS  
(TOTAL AMMONIA AS N, MG/L)

pH	TEMPERATURE (DEGREES CELSIUS)						
	0.0	5.0	10.0	15.0	20.0	25.0	30.0
6.50	2.20	2.06	1.95	1.90	1.81	1.79	1.27
6.75	2.58	2.41	2.31	2.20	2.13	2.12	1.50
7.00	3.12	2.96	2.77	2.71	2.63	2.59	1.84
7.25	4.27	3.99	3.80	3.62	3.55	3.50	2.48
7.50	3.18	3.00	2.87	2.75	2.69	2.71	1.93
7.75	2.23	2.11	2.01	1.93	1.86	1.90	1.36
8.00	1.46	1.37	1.31	1.27	1.26	1.27	0.92
8.25	0.83	0.78	0.75	0.73	0.73	0.74	0.54
8.50	0.47	0.45	0.43	0.43	0.43	0.45	0.34
8.75	0.27	0.26	0.25	0.25	0.26	0.28	0.22
9.00	0.16	0.15	0.15	0.16	0.17	0.19	0.15

(Authorized by K.S.A. 65-171d; implementing K.S.A. 65-165 and 65-171d; effective May 1, 1986; amended, T-87-8, May 1, 1986; amended May 1, 1987; amended Aug. 29, 1994.)

28-16-28f. **Administration of surface water quality standards.** (a) Review and revision. At least once every three years, a public hearing shall be held for the purpose of reviewing, and as appropriate, modifying the surface water quality standards and the surface water register.

(b) Application of modified surface water quality standards. A modification to the surface water quality standards, the surface water register, or

both, shall have no effect on the requirements of any unexpired discharge permit issued under K.S.A. 65-165, unless the discharge fails to meet the requirements of the permit or the department has reason to believe that continuation of the discharge will result in public health hazards or in irreversible water use impairments.

(c) Water quality certification. No action identified below shall be taken unless the department

has issued a water quality certification for the action:

(1) any action requiring a federal license or permit to the federal clean water act;

(2) any action subject to the permitting provisions of K.S.A. 65-165;

(3) any water development project subject to the provisions of K.S.A. 82a-325 *et seq.*, as amended;

(4) any solid waste processing or disposal system subject to the permitting provisions of K.S.A. 65-3041 *et seq.*;

(5) any hazardous waste treatment, storage or disposal facility subject to the permitting provisions of K.S.A. 65-3430 *et seq.*; and

(6) any action undertaken by any Kansas state agency which, in the opinion of the department, has a potential water quality impact.

(d) Compliance schedules.

(1) Except as provided in K.A.R. 28-16-28f(d)(2), compliance schedules contained in any discharge permit or license issued by the department pursuant to the federal clean water act or K.S.A. 65-165 shall not extend more than three years beyond the date of permit issuance.

(2) Compliance schedules of up to five years total duration may be granted if it is demonstrated, to the department's satisfaction, that the strict application of K.A.R. 28-16-28f(d)(1) is not feasible due to construction scheduling constraints or other technical limitations.

(e) Variances. If, upon written application by any person, the department finds that by reason of substantial and widespread socioeconomic impact the strict enforcement of the water quality criteria of K.A.R. 28-16-28e(c) is not feasible, the department may permit a variance.

(1) The provisions of 40 CFR 131.10(g), as in effect on July 1, 1993 and hereby adopted by reference, shall be considered by the department in reviewing the need for a variance.

(2) In granting a variance the department may set conditions and time limitations with the intent that progress be made toward improvements in surface water quality.

(3) A variance shall be granted only after public notification and opportunity for public comment.

(4) No action that impacts upon water quality shall be granted a variance from the terms and conditions of K.A.R. 28-16-28e(b).

(f) Site-specific criteria. Whenever the department proposes to use any site-specific criterion, a public notice stating the intention to use a site-

specific criterion shall be issued by the department. The public notice shall include a description of the affected surface water or surface water segment and the reasons for applying the proposed criterion. If the department determines there is significant public interest, a public hearing shall be held in the geographical vicinity of the affected surface water or surface water segment. A public notice of the final site-specific criterion shall be published in the Kansas register.

(g) Enforcement. Upon finding a violation of the surface water quality standards, an investigation to determine the cause of the violation shall be conducted by the department. If the department finds the violation to be caused by an artificial source of pollution, the person or persons responsible for the source of pollution shall be required by the department to initiate corrective actions that fully restore the designated uses of the affected surface water or surface water segment and provide for the return of the original surface water quality conditions. Nothing in this regulation shall abridge the right of the department to proceed with enforcement actions as provided in other Kansas statutes, or regulations, or both. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-165 and K.S.A. 65-171d; effective May 1, 1986; amended Aug. 29, 1994.)

28-16-29. (Authorized by K.S.A. 1976 Supp. 65-4512; effective, E-77-43, Sept. 23, 1976; effective Feb. 15, 1977; revoked Sept. 28, 1992.)

28-16-30. **Requirements for water and wastewater operator certification.** (a) Each operator who desires or is required to obtain a water supply system or wastewater treatment facility operator certificate shall meet the following requirements.

(b) Each applicant shall own, be employed by or under contract to persons having a water supply system or wastewater treatment facility and shall be engaged in the daily operation, maintenance, or both, of the system or facility.

(c) Each applicant shall submit a completed and approved application and the appropriate fee to the department. The application shall be received by the department at least two weeks before the test date. Late applications shall not be accepted for that test date.

(d) If an applicant willfully provides false information on the application, the applicant shall not be accepted for examination and the fee shall not be returned. The applicant shall be notified of this

decision and shall not be allowed to take the examination for two years. (Authorized by and implementing K.S.A. 65-4512; effective Sept. 28, 1992.)

**28-16-31. Eligibility for water and wastewater operator certification.** (a) Applicants for certification shall meet eligibility requirements as noted in the following table.

CERTIFICATE CLASS	POINTS	EXPERIENCE
Small System	0.5	None
I	13.0	1 year
II	14.0	1 year
III	16.0	2 years
IV	18.0	2 years

(1) Point totals shall be determined using the following table.

EXPERIENCE OR EDUCATION	POINTS
One year of operating experience	1.0
One year of primary, secondary or postsecondary education completed	1.0
High school graduation (GED or equivalent)	12.0
One full year of college (30 hours credit)	1.0
Approved training (40 contact hours)	1.0
California State University correspondence courses (each volume)	1.0
Department correspondence course	0.5
Approved semester courses (60 contact hours)	1.5
Approved two year environmental technology degree	6.0

(2) Completion of an approved two year environmental technology degree provides the year of experience requirement for taking a Class I examination.

(b) Minimum training requirements. An operator who holds a certificate of competency shall be required to meet minimum training requirements prior to certificate renewal. All Class I, II, III, and IV certified operators shall acquire at least ten hours of approved training every two years. Small system operators shall acquire ten hours of approved training every four years. Operators who conduct approved training for water supply system operators and wastewater treatment facility operators may receive credit equal to the hours of training provided. (Authorized by and implementing K.S.A. 65-4512; effective Sept. 28, 1992.)

**28-16-32. Operator certification examinations.** (a) To be certified, each applicant shall pass the appropriate written examination.

(b) Examinations shall be given at least twice each year at times and locations set by the department. Notice of examinations shall be sent to certified operators and communities or districts

having a water supply system or wastewater treatment facility, or both, at least 30 days prior to the date of examination.

(c) The written examinations shall be graded by the department and the applicant shall be notified of the results. Examinations shall not be returned to the applicant. Upon receiving a written request, an analysis of the failed examination shall be provided to the applicant. The analysis shall indicate areas in which the applicant needs further study. (Authorized by and implementing K.S.A. 65-4512; effective Sept. 28, 1992.)

**28-16-33. Operator responsible for the operation and management of a water supply system or wastewater treatment facility, or both.** (a) When a new operator responsible for the operation or management of a system or facility is hired, the employer shall, within 30 days, notify the department. The person named shall be designated as an operator in training (OIT). As soon as possible after completing one full year of operation as an OIT, the operator shall take the appropriate certification examination. Upon failing the examination, the applicant shall make additional preparation and take the examination again at the next opportunity.

(b) The OIT designation shall be renewed once if the operator demonstrates to the Department that he or she is attending training sessions, studying correspondence courses or otherwise preparing to pass the operator certification examination. (Authorized by and implementing K.S.A. 65-4512; effective Sept. 28, 1992.)

**28-16-34. Issuance of certificate of competency.** Upon satisfactory fulfillment of the requirements as set forth in K.A.R. 28-16-30, and upon consideration of the recommendations of the division training officer, a suitable certificate shall be issued to the applicant. The certificate shall designate the class or classes of either water supply systems or wastewater treatment facilities that the applicant is qualified to operate. The certificate shall be good for two years from date of issuance. (Authorized by and implementing K.S.A. 65-4512; effective Sept. 28, 1992.)

**28-16-35. Operator certification fees.** (a) Fees for certification shall be as follows:

OIT (one-year certificate) .....	No charge
OIT (renewal for one year).....	\$5.00
Examination fee.....	\$25.00
Two-year renewal for all classes except OIT ...	\$20.00

Reinstatement of lapsed certificate up to one year after renewal date .....	\$35.00	CLASS	POPULATION SERVED
between one and two years after renewal date .....	\$45.00	Small Systems	
Water or wastewater correspondence course...	\$40.00	Non-overflowing municipal wastewater ponds	All, no limit
Reciprocity fee .....	\$35.00	Class I	

(b) Fees from applicants who are ineligible to take the certification examination shall be returned. Fees from applicants who fail the examination shall not be returned. Fees for department sponsored training sessions shall be established by the department. (Authorized by and implementing K.S.A. 65-4512; effective Sept. 28, 1992.)

**28-16-36. Classification of water supply systems and wastewater treatment facilities.**

(a) Each water supply system and wastewater treatment facility shall have an operator responsible for the operation and management of the system or facility, or both, whose qualifications are commensurate with the following:

SYSTEM OR FACILITY CLASS	OPERATOR CLASS
Small System	Small System, I, II, III or IV
I	I, II, III or IV
II	II, III or IV
III	III or IV
IV	IV

(b) Classification of water supply systems.

CLASS	POPULATION SERVED
Small System	
Distribution system only or Chlorination only	All, no limit
Class I	
Chlorination only or Treatment	less than 501
Class II	
Chlorination only or Treatment	501 - 1,500
Class III	
Chlorination only or Treatment	less than 501
Class II	
Chlorination only or Treatment	1,501-5,000
Class III	
Chlorination only or Treatment	501-2,500
Class III	
Chlorination only or Treatment	5,001-20,000
Class IV	
Chlorination only or Treatment	2,501-10,000
Class IV	
Chlorination only or Treatment	over 20,000
Class IV	
Chlorination only or Treatment	over 10,000

(c) Classification of commercial, industrial and municipal wastewater treatment facilities is as follows:

Any secondary facility or Overflowing wastewater ponds	less than 1,000
Class II	
Any secondary facility	All, no limit
Class III	
Any secondary facility or Advanced or specialized facility	1,001-5,000
Class IV	
Any secondary facility or Advanced or specialized facility	5,001-25,000
Class IV	
Any secondary facility or Advanced or specialized facility	less than 5,000
Class IV	
Any secondary facility or Advanced or specialized facility	over 25,000
Class IV	
Any secondary facility or Advanced or specialized facility	over 5,000

(d) For purposes of this regulation, treatment of water supply systems shall include but not be limited to the following processes: Iron and manganese removal, softening, coagulation sedimentation and filtration, recarbonation, and addition of chemicals other than chlorine for improved water quality.

(e) For purposes of this regulation, "secondary facility," shall be any department approved biological treatment facility, including: waste stabilization ponds, trickling filter plants, rotating biological contactor plants, and activated sludge plants.

(f) For purposes of this regulation advanced or specialized treatment shall include but not be limited to the following processes: Chemical, biological, or physical treatment to provide additional nutrient removal beyond secondary treatment or effluent clarification. (Authorized by and implementing K.S.A. 65-4512; effective Sept. 28, 1992.)

28-16-37 to 28-16-49. **Reserved.**

**STATE GRANTS TO MUNICIPALITIES FOR THE CONSTRUCTION OF WATER POLLUTION CONTROL PROJECTS BENEFITTING FROM FEDERAL GRANTS**

28-16-50 to 28-16-54. (Authorized by K.S.A. 1971 Supp. 65-3305; effective, E-71-16, April 1, 1971; effective Jan. 1, 1972; revoked May 10, 1996.)

**28-16-55. Inspection of sewerage systems during construction and prohibited connections.** This regulation pertains to the inspection of all components of a sewerage system

during construction including, but not limited to, treatment facilities, lift stations and force mains, outfall sewers, interceptor sewers, main and lateral sewers and their extensions, manholes, clean-outs, and building sewers.

I. *Definitions*: Where used in these regulations the following terms shall be understood to have the meaning as given below in their corresponding definitions regardless of any other meaning which may be implied by common or local usage. (A) *Areaways*. An areaway is a sunken yard, patio, court, driveway or window well leading into a basement or crawlspace for entrance, light or ventilation.

(B) *Building*. A building is a structure built, erected, or framed of component structural parts designed for the housing, shelter, enclosure, or support of persons, animals, equipment or property of any kind.

(C) *Building drain*. The building drain is that part of the lowest piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer beginning three (3) feet outside the building wall.

(D) *Building sewer*. The building sewer is that part of the piping of a drainage system which extends from the end of the building drain and which receives the discharge of the building drain and conveys it to a public sanitary sewer, private sanitary sewer, individual sewage disposal system, or other point of disposal.

(E) *Crawlspace drain*. A crawlspace drain is a drain installed to collect drainage from the surface of any area that is entirely enclosed by foundation walls and beneath a building which area is not covered by a concrete or other form of permanent surfacing.

(F) *Garage drain*. A garage drain is a drain located in a garage or, in case of a basement garage, within ten (10) feet of garage area.

(G) *Inspector*. An inspector shall be a consulting engineer, municipal engineer, sewer district engineer, county engineer, or his authorized representative.

(H) *Roof drain*. A roof drain is a drain which is installed to collect stormwater from building roofs.

(I) *Saddle*. A saddle is a fitting attached to an existing sanitary sewer to receive a building sewer connection.

(J) *Sanitary sewer (sewer)*. A sanitary sewer (sewer) shall mean a pipe which carries sewage

and insofar as practical, excludes infiltration of storm, surface and ground water.

(K) *Sewage*. Sewage is any substance that contains any of the waste products or excrementitious or other discharges from the bodies of human beings, animals, or chemical or other wastes from domestic, manufacturing or other forms of industry.

(L) *Shall*. The word "shall" is a mandatory term.

(M) *Foundation drains*. A foundation drain is a pipe with open joints and/or porous material installed either outside exterior foundation walls or inside and beneath a basement floor for the purpose of preventing the build-up of water pressure and water capillarity beneath the floor.

II. *Inspection of sewerage system construction*:

(A) *Treatment facilities, mains and laterals*. All sewerage construction projects shall have continuous inspections by a qualified inspector during active phases of sewerage construction to insure that they comply with plans and specifications approved by the Kansas state department of health and to insure elimination of extraneous surface and groundwater. This shall include inspection of all sewers and manholes before they are covered but after the sewers are bedded.

(B) *Building sewers*. All building sewers shall be constructed of materials which are approved by the state department of health for the construction of lateral sewers. Building sewers shall be left uncovered until inspected. In case of saddle connections, after the saddle hole has been made in the receiving pipe, the pipe thoroughly cleaned and all excavation and bracing has been completed for the encasement, the inspector shall see the saddle installed and properly anchored.

(C) *Prohibited connections*. No roof, areaway, garage, or foundation drain shall be connected with or flow into any building or sanitary sewer.

III. *Municipal regulations and fees*. These regulations do not affect the right of the municipality to adopt stricter regulations, connection fees, connection and use permits, and sewer service charges. (Authorized by K.S.A. 65-171d; effective, E-74-7, Nov. 26, 1973; effective May 1, 1975.)

28-16-56. (Authorized by K.S.A. 1975 Supp. 65-166a; effective, E-74-7, Nov. 26, 1973; effective, E-76-3, Jan. 1, 1975; effective May 1, 1975; amended, E-76-39, Aug. 1, 1975; amended May 1, 1976; revoked, T-85-30, Nov. 14, 1984; revoked May 1, 1985.)

28-16-56a. (Authorized by and implementing K.S.A. 65-166a; effective, T-85-30, Nov. 14, 1984; effective May 1, 1985; amended May 1, 1986; amended May 1, 1988; revoked Sept. 27, 1996.)

28-16-56b. (Authorized by and implementing K.S.A. 1984 65-166a; effective, T-85-30, Nov. 14, 1984; effective May 1, 1985; revoked Sept. 27, 1996.)

28-16-56c. **Sewage permit fees; definitions.** For the purposes of K.A.R. 28-16-56d the following terms shall be defined as set out in this regulation:

(a) "Sewage" shall be defined as in K.S.A. 65-164.

(b) "Domestic sewage" means sewage originating primarily from kitchen, bathroom and laundry sources, including waste from food preparation, dishwashing, garbage-grinding, toilets, baths, showers and sinks.

(c) "Municipal wastewater treatment facility" means a facility serving a city, county, township, sewer district, or other local governmental unit, or a facility serving a state or federal agency, establishment, or institution, for the purpose of treating primarily domestic sewage by physical, chemical or biological means or by a combination of those methods.

(d) "Commercial wastewater treatment facility" means a facility serving a commercial enterprise or group or a combination thereof, for the purposes of treating primarily domestic sewage by physical, chemical or biological means or by a combination of those methods. "Commercial wastewater treatment facility" shall include any slaughter house with an average slaughter rate of 50 animals or less per week.

(e) "Industrial wastewater treatment facility" means a facility serving a city, county, township, sewer district, or other governmental unit; a state or federal agency, establishment, or institution; an industrial or commercial enterprise; or a group or combination thereof, for the purpose of treating primarily sewage or process-generated wastewater, other than domestic sewage, by physical, chemical or biological means or by a combination of those methods. "Industrial wastewater treatment facility" shall include any truck washing facility except truck washing facilities for animal waste, municipally-owned electricity generating facilities, facilities using contaminated ground-

water for cooling or process water, and water treatment plants.

(f) "Point source" means any discernible, confined, and discrete conveyance from which pollutants are or may be discharged, including any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, confined animal feeding facility, landfill leachate collection system, or any vessel or other floating craft. This term shall not include return flows from irrigated agriculture or agricultural storm water runoff.

(g) "Storm water discharge" means any discharge of storm water runoff from a point source. This designation may include storm water runoff from a municipal, industrial or commercial facility, or from a construction site, or a discharge from any conveyance or system of conveyances used for collecting and conveying storm water runoff or a system of discharges from municipal separate storm sewers.

(h) "Cooling water discharge" means cooling water discharged from any system in which there is no contact with process pollutants and where there is no measured chemical buildup.

(i) "Treated cooling water discharge" means cooling water discharged from any system in which there is no contact with process pollutants and where there is no measured chemical buildup other than chemicals added for biological or corrosion control, or from evaporative losses.

(j) "Dewatering discharge" means a discharge resulting from drainage or removal of water from a lagoon, quarry, pit or any other holding device. Dewatering discharge shall not include any discharge in which there is measured chemical buildup or to which chemicals have been added for any purpose.

(k) "Pretreatment permit" means a permit issued to a source subject to pretreatment standards and which discharges to a municipal wastewater treatment facility not having an approved pretreatment program.

(l) "General permit" means an NPDES "permit" issued under K.A.R. 28-16-150 et seq.

(m) "Truck washing facility for animal wastes" means a facility which exists solely for the purpose of washing animal wastes from trucks or trailers.

(n) "Confined feeding facility" means any lot, pen, pool or pond which is:

- (1) used for the confined feeding of animals or fowl for food, fur or pleasure purposes;
- (2) not normally used for raising crops; and

(3) not used for growing vegetation for animal food.

Confined feeding facilities on separate pieces of land without a contiguous ownership boundary shall be classified as separate operations and each operation shall be assessed a fee under K.A.R. 28-16-56d.

(o) "Animal unit" means a unit of measurement calculated by adding the following numbers:

(1) the number of beef cattle weighing more than 700 pounds multiplied by 1.0;

(2) plus the number of cattle weighing less than 700 pounds multiplied by 0.5;

(3) plus the number of mature dairy cattle multiplied by 1.4;

(4) plus the number of swine weighing more than 55 pounds multiplied by 0.4;

(5) plus the number of sheep or lambs multiplied by 0.1;

(6) plus the number of horses multiplied by 2.0;

(7) plus the number of turkeys multiplied by 0.018;

(8) plus the number of laying hens or broilers, if the facility has continuous overflow watering, multiplied by 0.01;

(9) plus the number of laying hens or broilers, if the facility has a liquid manure system, multiplied by 0.033; and

(10) plus the number of ducks multiplied by 0.2.

However, each head of cattle will be counted as one full animal unit for the purpose of determining the need for a federal permit.

(p) "Animal unit capacity" means the maximum number of animal units which a confined feeding facility is designed to accommodate at any one time. (Authorized by and implementing K.S.A. 1995 Supp. 65-166a; effective Sept. 27, 1996.)

**28-16-56d. Sewage permit fees; schedules.** (a) Each applicant applying for a permit pursuant to K.S.A. 65-165, and each holder of a permit issued pursuant to K.S.A. 65-165 and amendments thereto, shall submit the appropriate fee in accordance with the following schedule:

Schedule of Fees at Annual Rate

<i>Classification</i>	<i>Unit Rates and Minimum Rates</i>
(1) Municipal or commercial wastewater treatment facility.	\$185/year/million gallons per day permitted capacity and for any portion thereof. \$185 minimum fee per year.

(2) Municipal stormwater system. 100,000 <sup>1</sup> population.	\$2,000 per year.
(3) Industrial wastewater treatment facility.	\$320/year/million gallons per day permitted capacity and for any portion thereof. \$320 minimum fee per year.
(4) Cooling water discharge—surface disposal.	\$60 per year.
(5) Treated cooling water discharge—surface disposal.	\$120/year/million gallons per day permitted capacity and for any portion thereof. \$120 minimum fee per year.
(6) Dewatering discharge.	\$60 per year.
(7) Pretreatment permit.	\$320 per year.
(8) General permit.	\$60 per year.
(9) Industrial stormwater discharge—general permit.	\$60 per year.
(10) Industrial stormwater discharge—individual permit.	\$320 per year.
(11) Confined feeding facility:	
(A) Initial registration fee, regardless of capacity	\$25 one-time fee.
(B) Permit fee:	
(i) animal unit capacity of 999 or less	\$25 per year.
(ii) animal unit capacity of 1,000-4,999	\$100 per year.
(iii) animal unit capacity of 5,000-9,999	\$200 per year.
(iv) animal unit capacity of 10,000 or more	\$400 per year.
(12) Truck washing facility for animal wastes.	\$320 per year.

(b)(1) Plans and specifications shall not be reviewed and processing and issuance of a permit shall not take place until the required fee is paid. Fees shall be made payable to the "Kansas department of health and environment—water pollution control permit."

(2) Fees paid in accordance with the above schedule, including fees paid for facilities which are never built or which are abandoned, shall not be refunded.

(3) Each applicant operating a facility in which two or more of the wastewaters identified in the above fee schedule are discharged shall pay the appropriate fee for each type of wastewater dis-

charged, even if only one permit has been issued for the facility.

(4) Permit fees shall be based on the minimum rate or unit rate, whichever is greater. The full unit rate shall be applied to any portion of a unit. The fee per unit shall not be prorated.

(5) A permit fee shall be paid annually in accordance with the above schedule.

(6) If ownership of the permitted facility changes during the term of a valid permit no additional fee shall be required unless a change occurs which results in a new or expanded facility or operation.

(7) If a change occurs during the term of a valid permit which results in an expanded capacity of the facility or operation, a new application shall be required. Upon approval, the existing permit shall be amended and shall continue in effect for the remainder of its original term, unless revoked. The additional fee shall be based only on the difference between the original permitted capacity and the expanded capacity. The new annual fee for the expanded facility shall be based on the unit rate at the expanded capacity or the minimum rate, whichever is greater, for the remainder of the term of the permit. (Authorized by and implementing K.S.A. 1995 Supp. 65-166a; effective Sept. 27, 1996.)

**28-16-57. Procedures relating to discharge of wastewaters.** These regulations are intended to comply with state statutes relative to water pollution control discharge permits and to comply with all requirements of the federal water pollution control act, 33 U.S.C. Section 1251 *et seq.* concerning the national pollutant discharge elimination system and federal regulations adopted pursuant thereto. (Authorized by K.S.A. 65-171d, as amended by L. 1986, Ch. 204, Sec. 3, Sec. 6 and L. 1986, Ch. 201, Sec. 22; implementing K.S.A. 65-165, 65-166; effective, E-74-32, June 14, 1974; effective May 1, 1975; amended May 1, 1987.)

**28-16-57a. Effluent standards.** (a) Incorporation. 40 C.F.R. Parts 133, 405 through 436, 439, 440, 443, 446, 447, 454, 455, 457 through 461, 463, 465, and 469, as in effect on July 1, 1985, are adopted by reference.

(b) To the extent that the above effluent limitations are inapplicable, the limitations shall be set on a case-by-case basis using the methodology described in 40 CFR Sections 122.44(a) and

125.3(c)(2) as in effect on July 1, 1985. (Authorized by K.S.A. 65-171d, as amended by L. 1986, Ch. 204, Sec. 3, Sec. 6 and L. 1986, Ch. 201, Sec. 22; implementing K.S.A. 65-171d as amended by L. 1986, Ch. 204, Sec. 3, Sec. 6 and L. 1986, Ch. 201, Sec. 22, effective May 1, 1987.)

**28-16-58. Definitions.** (a) "Waters of the state" means all streams and springs, and all bodies of surface and subsurface waters within the boundaries of the state.

(b) "Application" means the properly executed documents as furnished by the division, and any additional required documents, that are necessary for obtaining a permit.

(c) "EPA" means the United States environmental protection agency.

(d) "Administrator" means the administrator of the United States environmental protection agency.

(e) "Regional administrator" means the regional administrator for region VII of the United States environmental protection agency.

(f) "Director" means the director of the division of environment, Kansas department of health and environment.

(g) "Secretary" means the executive secretary of the Kansas department of health and environment.

(h) "Department" means the Kansas department of health and environment (KDHE).

(i) "Division" means the division of environment, Kansas department of health and environment.

(j) "National pollutant discharge elimination system (NPDES)" means the national system for the issuance of permits under 42 U.S.C. Section 1342 and includes any state or interstate program which has been approved by the administrator, in whole or in part, pursuant to 42 U.S.C. Section 1342.

(k) "Refuse act application" means an application for a permit under 33 U.S.C. Section 407 *et seq.*

(l) The definitions of the following terms contained in 42 U.S.C. Section 1362 shall be applicable to such terms as used in this part unless the context otherwise requires: "state," "municipality," "person," "pollutant," "navigable waters," "effluent limitations," "discharge of a pollutant," "toxic pollutant," "point source," "biological mon-

itoring," "discharge," "schedule of compliance," "industrial user," and "pollution."

(m) "National data bank" means a facility or system established or to be established by the administrator for the purposes of assembling, organizing, and analyzing data pertaining to water quality and the discharge of pollutants.

(n) "Water quality standards" means all water quality standards as provided in K.A.R. 28-16-28b through 28-16-28f, to which a discharge is subject.

(o) "Municipal system" means a system under the jurisdiction of a city, county, township, district or other governmental unit.

(p) "Minimum standards of design, construction, and maintenance" means effluent standards, effluent limitations, pretreatment requirements, other performance standards and other standards of design, construction and maintenance for wastewater control facilities published by the department, as "Minimum Standards of Design for Water Pollution Control Facilities", 1978. (Authorized by K.S.A. 65-171d; as amended by L. 1986, Ch. 204, Sec. 3, Sec. 6 and L. 1986, Ch. 201, Sec. 22; implementing K.S.A. 65-165, 65-166; effective, E-74-32, June 14, 1974; effective May 1, 1975; amended May 1, 1987.)

**28-16-59. Filing of applications.** (a) Each person presently discharging or having a potential to discharge pollutants into any "waters of the state" shall file one copy of the appropriate application within 30 days of a written notification by the division.

(b) Each person proposing commencement of a discharge of pollutants after enactment of these regulations shall file a complete application:

(1) no less than 180 days in advance of the date on which the person desires to commence the discharge of pollutants; or

(2) in sufficient time prior to commencement of the discharge of pollutants to insure compliance with the requirements of state or federal law.

(c) Each application shall be considered to be complete when the appropriate fee has been paid in accordance with K.A.R. 28-16-56c and 28-16-56d and when the applicant has filed:

(1) A refuse act application and any additional information required by the director; or

(2) a complete application form, as prescribed for the type, category, or size of discharge, facility, or activity, and plans, specifications and an engineering report in accordance with K.A.R. 28-16-

1 through 28-16-7 and any additional information required by the director.

(d) Notification to and approval by the director is required prior to any of the following:

(1) The connection of an industrial waste discharge to a municipal system or the addition of a new process or product by an existing industrial facility;

(2) A significant change in disposal method, including change from a land disposal to direct discharge to water, or a change in the method of treatment which would significantly alter the characteristics of the waste;

(3) A significant change in the disposal area or point of discharge, including discharging into another drainage area or into a different water body, or to a disposal area different from the existing approved area;

(4) An increase in flow beyond that specified in the issued permit or the application thereto; or

(5) Other circumstances which result in a change in character, amount or location of waste discharge.

(e) The application shall be signed and certified in accordance with the provisions of 40 CFR Section 122.22 as in effect on July 1, 1985.

(f) A permit shall not be issued on the basis of any application which the director has identified as incomplete or otherwise deficient until the director receives sufficient information to correct any deficiency. (Authorized by K.S.A. 1995 Supp. 65-171d; implementing K.S.A. 65-165, 65-166; effective, E-74-32, June 14, 1974; effective May 1, 1975; amended May 1, 1987; amended Sept. 27, 1996.)

**28-16-60. Development of draft permit.**

(a) The application and any other relevant facts shall be reviewed by the director to determine if:

(1) A permit should be issued allowing the discharge;

(2) a permit should be issued providing for no discharge; or

(3) a permit should not be issued.

(b) If the issuance of a permit is deemed advisable, the proposed permit conditions shall be formulated by the director, including:

(1) Effluent limitations;

(2) Schedule of compliance including any necessary interim dates;

(3) Special conditions; and

(4) A monitoring program if appropriate. (Authorized by K.S.A. 65-171d, as amended by L.

1986, Ch. 204, Sec. 3, Sec. 6 and L. 1986, Ch. 201, Sec. 22; implementing K.S.A. 65-165, 65-166; effective, E-74-32, June 14, 1974; effective May 1, 1975; amended May 1, 1987.)

**28-16-61. Public notice of permit actions, public comment period, and public hearings.** (a) Definitions.

(1) "Clean Water Act (CWA)" means the federal water pollution control act, or federal pollution control act amendments of 1972, P.L. 92-500, as amended by P.L. 95-217, P.L. 95-576, P.L. 96-438, and P.L. 97-117; 33 U.S.C. 1251 et seq.

(2) "Draft permit" means a document prepared under K.A.R. 28-16-60 indicating the director's tentative decision to issue, reissue, deny, modify, revoke and reissue, or terminate a permit.

(3) "Facility or activity" means any NPDES point source as defined in K.A.R. 28-16-57a or any other facility or activity, including land or appurtenances thereto, that is subject to regulation under K.A.R. 28-16-57.

(4) "General permit" means a permit authorizing a category of discharges or activities under the CWA within a geographical area. For NPDES, a general permit means a permit issued under K.A.R. 28-16-150 to 154, inclusive.

(5) "Indian tribe" means any indian tribe having a federally recognized governing body carrying out substantial governmental duties and powers over a defined area.

(6) "Major facilities" are those facilities which are on a mutually agreed list as determined by EPA and the department.

(7) "Permit" means an authorization, license, or equivalent control document issued by the director to implement the requirements of K.A.R. 28-16-57. Permit does not include any document which has not yet been the subject of final agency action, such as a draft permit.

(8) "Resource Conservation and Recovery Act (RCRA)" means the solid waste disposal act of 1965, as amended in 1970, as amended by the resource conservation and recovery act of 1976, P.L. 94-580, as amended by P.L. 95-609, P.L. 98-616, and P.L. 99-499; 42 U.S.C. 6901 et seq.

(9) "UIC" means the underground injection control program under part C of the safe drinking water act, 42 U.S.C. 300f et seq.

(b) Public Notice and Comment Period.

(1) Scope and Timing. Public notice shall be given when a draft permit has been prepared un-

der K.A.R. 28-16-60 and when a hearing has been scheduled under subsection (d) of this regulation.

(A) A public notice shall not be required when a request for permit modification, revocation and reissuance, or termination is denied under K.A.R. 28-16-62. Written notification of that denial shall be given both to the person who requests this change and to the permittee.

(B) Public notices may describe more than one permit or permit action.

(C) Public notice of the preparation of a draft permit shall allow at least 30 days for public comment.

(D) Public notice of a public hearing shall be given at least 30 days before the hearing. Public notice of the hearing may be combined with the public notice of the draft permit.

(2) Methods.

(A) Incorporation. 40 CFR sections 124.8 (a), (b)(1), (2), (4), (5), (6), (7), and (8); 124.10 (c)(1)(i), (ii), (iii), (iv), (v), and (x); (c)(2)(i); (c)(3); and (c)(4); and 124.56, as in effect on July 1, 1991, are adopted by reference.

(B) Each person who is on a mailing list maintained by the department shall also be mailed a copy of the notice. The mailing list shall include:

(i) each person who requests in writing to be placed on the list;

(ii) each person solicited for "area lists" from participants in past permit proceedings in that area; and

(iii) each person who responds to a notice, published in the Kansas Register once a year, of the opportunity to be placed on the list. The mailing list may be updated from time to time by a request from the director for a written indication of continued interest from those listed. The name of any person who fails to respond to such a request may be deleted from the list.

(3) Contents.

(A) Public notice. Each public notice issued under this regulation shall contain the following minimum information:

(i) the name and address of the office processing the permit action for which notice is being given;

(ii) the name and address of the permittee or the permit applicant, and if different, the name of the facility or activity regulated by the permit;

(iii) a brief description of the business conducted at the facility or the activity described in the permit application;

(iv) the name, address, and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit, fact sheet, and the application; and

(v) a brief description of the comment procedures established by subsections (c) and (d) of this regulation and of the time and place of any hearing that will be held. The notice shall also include a statement of procedures to request a hearing, if a hearing has not already been scheduled, and other procedures by which the public may participate in the final permit decision.

(B) Public notices for hearings. In addition to the general public notice described in paragraph (3)(A) of this subsection, each public notice of a hearing shall contain the following:

(i) reference to the date of any previous public notices relating to the permit at issue; and

(ii) a brief description of the nature and purpose of the hearing, including the applicable rules and procedures.

(C) In addition to the general public notice described in paragraph (3)(A) of this subsection, each person identified in 40 CFR 124.10(c)(1)(i), (ii), (iii), and (iv) shall be mailed a copy of the fact sheet, the permit application, if any, and the draft permit, if any.

(c) Public comments and request for public hearings. During the public comment period provided under subsection (b) of this regulation, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised during the hearing. All comments shall be considered in making the final decision and shall be answered as provided in subsection (e) of this regulation.

(d) Public hearings; incorporation. 40 CFR section 124.12(a)(1) and (2), as in effect on July 1, 1991, are adopted by reference.

(e) Response to comments. A response to comments shall be issued at the time that any final permit decision is issued. The response to comments shall be available to the public and shall:

(1) specify which provision, if any, of the draft permit has been changed in the final permit decision, and the reasons for the change; and

(2) briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any hearings. (Authorized by K.S.A. 65-171d; implement-

ing K.S.A. 65-165, and K.S.A. 65-166; effective, E-74-32, June 14, 1974; effective May 1, 1975; amended May 1, 1987; amended Sept. 27, 1993.)

**28-16-62. Terms and conditions of permits.** (a) Prohibitions. A permit shall not be issued:

(1) By the director when the regional administrator has objected to issuance of the permit under 40 CFR Section 123.44, as in effect on July 1, 1985;

(2) when comments, if any, received from neighboring states, indicate that such discharge will violate the water quality of such states. The neighboring states shall be notified in advance, pursuant to K.A.R. 28-16-61;

(3) when, in the judgment of the secretary of the army, acting through the chief of engineers, anchorage and navigation in or on any of the waters of the United States would be substantially impaired by the discharge;

(4) for the discharge of any radiological, chemical, or biological warfare agent or high level radioactive waste;

(5) for any discharge inconsistent with a plan or plan amendment approved under 33 U.S.C. Section 1288(b); or

(6) to a new source or new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards.

(b) Minimum standards of design, construction and maintenance for owners and operators of water pollution control facilities. (1) Each owner or operator of a sewage system, industrial facility, commercial establishment, or agricultural activity discharging or having a potential to discharge sewage to waters of the state shall have approved water pollution control facilities. In approving and issuing permits to each existing or proposed facility, the director shall insure that such facility conforms to published minimum standards of design, construction, and maintenance. In approving and publishing minimum standards of design, construction and maintenance, the director shall insure that such standards are at least as stringent as the requirements of 33 U.S.C. Sections 1311, 1312, 1316, 1317, 1318, and 1343.

(2) Treatment over and above minimum standards shall be required to comply with applicable water quality standards. When minimum standards do not provide compliance with the applicable water quality standards, a waste-loading al-

location shall be prepared to insure that the discharge authorized is consistent with the applicable water quality standards.

(3) Each permit shall also include a schedule of compliance for any facility which is not in full compliance with minimum standards of design, construction, and maintenance and other requirements. If the discharger fails or refuses to comply with the specified schedule of compliance, the regional administrator shall be notified by the director within 30 days of such failure or refusal. If a schedule of compliance exceeds nine months, one or more interim reporting dates shall be required. No more than nine months shall elapse between interim dates contained in a schedule of compliance.

(4) Upon request of the applicant or permittee, a schedule of compliance may be modified by the director if good and valid cause exists for such revision, and if within 30 days following receipt of notice, the regional administrator does not object in writing.

(5) No later than 14 days following each interim date, the discharger shall be required to provide the director with a written notice of progress toward compliance with interim or final permit requirements.

(A) On the last day of the months of February, May, August, and November, a list of all instances, as of 30 days prior to the date of the report, of failure or refusal of a permittee to comply with interim or final requirements or to notify the director of compliance or noncompliance with each interim or final requirement shall be transmitted to the regional administrator by the director. The list shall be available to the public for inspection and copying and shall contain at least the following information with respect to each instance of noncompliance:

(i) The name and address of each noncomplying permittee;

(ii) a short description of each instance of noncompliance;

(iii) a short description of any actions or proposed actions by the permittee or the director to comply or enforce compliance with the interim or final requirements; and

(iv) any details which tend to explain or mitigate an instance of noncompliance with an interim or final requirement.

(B) A permit may be revoked for failure to comply with any provision of an applicable schedule of compliance in conformance with K.S.A. 65-

165. Nothing in this regulation shall be construed to limit the applicability of civil or criminal penalties as provided by law.

(c) Other terms and conditions of permit.

(1) Each permit for a publicly-owned treatment facility shall contain a requirement that the operating agency must notify the director of:

(A) A sewer extension or other means whereby a new introduction of pollutants is discharged to the treatment works; or

(B) A change in the volume or character or pollutants being introduced into such works by a source introducing pollutants into such works at the time the permit was issued.

(2) Each permit shall contain a requirement that the operator of the publicly-owned treatment works insure that each industrial user:

(A) Pays a charge for the user's fair share of the operating and maintenance cost of treatment and a fair share of the federal grant portion of the cost of construction of the treatment plant in accordance with any applicable provisions of the act and the federal grant agreement; and

(B) Complies with applicable toxic and pretreatment guidelines as contained in the minimum standards of design, construction and maintenance.

(3) Each permit shall contain a condition which states that the discharge of any pollutant not identified and authorized by the permit or the discharge of any pollutant in a manner or quantity which differs from that stated in the application is prohibited.

(4) Each permit shall contain a condition that the discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the discharger to achieve compliance with the permit.

(d) Duration of permits. Each Permit shall be issued for a fixed term not to exceed five years.

(e) Modification or revocation and reissuance of permits. When the director receives any information regarding a permittee, receives a request for modification or revocation and reissuance of a permit, or conducts a review of the permit file, the director may determine whether or not one or more of the causes listed in paragraphs (1) or (2) of this subsection for modification or revocation and reissuance or both exist. If cause exists, the permit may be modified or revoked and reissued accordingly and an updated application may be requested, if necessary. When a permit is modified, only the conditions subject to modification

are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.

(1) Causes for modification. The following are causes for modification of a permit. However, these causes should not be basis for revocation and reissuance of permits except when the permittee requests or agrees to such an action.

(A) Alterations. Material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance may be the basis for modification of a permit, if those alterations or additions justify application or permit conditions that are different or absent in the existing permit.

(B) Information. If the director has received new information regarding a permittee's facility or activities, the permit may be modified during its term only if the information received was not available at the time of permit issuance and would have justified the application of different permit conditions at the time of issuance.

(C) New regulations. If the standards or regulations upon which a permit was based have been changed by promulgation of amended standards or regulations after the permit was issued, the permit may be modified during its term only when:

(i) The permit condition requested to be modified was based on a promulgated effluent limitations guideline, EPA-approved or promulgated water quality standards, or secondary treatment regulations;

(ii) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based or has approved KDHE action with regard to a water quality standard on which the permit condition was based; and

(iii) a permittee requests modification in accordance with subsection (g) of this regulation within 90 days after notice of action on which the request is based.

(D) Judicial Decisions. Any permit may be modified if:

(i) a court of competent jurisdiction has remanded and stayed EPA-promulgated regulations or effluent limitation guidelines;

(ii) the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based; and

(iii) a request is filed by the permittee in accordance with subsection (g) of this regulation within 90 days of judicial remand.

(E) Compliance Schedules. Any permit may be modified if the director determines good cause exists for modification of a compliance schedule, including such causes as an act of God, a strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonable available remedy. However, in no case may a compliance schedule be modified to extend beyond a statutory deadline.

(F) Any permit may be modified when the permittee has filed a request for a variance under 33 U.S.C. Sections 301(c), 301(g), 301(h), 301(i), 301(k), or 316(a) or for "fundamentally different factors" within the time specified in 40 CFR Section 122.21 or 125.27(a), as in effect on July 1, 1985.

(G) 33 U.S.C. Section 1317(a) toxics. Any permit may be modified when required to incorporate an applicable 33 U.S.C. Section 1317(a) toxic effluent standard or prohibition.

(H) Reopener. Any permit may be modified when required by "reopener" conditions in a permit that are established for toxic effluent limitations or pretreatment programs.

(I) Net Limits. (i) Incorporation. 40 CFR Section 122.45(h), as in effect on July 1, 1985, is adopted by reference.

(ii) Any permit may be modified upon request of a permittee who qualifies for effluent limitations on a net basis under 40 CFR Section 122.45(h), as in effect on July 1, 1985.

(iii) A permit may be modified when a discharge is no longer eligible for net limitations, as provided in 40 CFR Section 122.45(h), as in effect on July 1, 1985.

(J) Pretreatment. Any permit may be modified as necessary under the compliance schedule for development of a publicly-owned treatment works pretreatment program.

(K) Failure to notify. A permit may be modified upon failure of the department to notify another state whose waters may be affected by a discharge from this state.

(L) Non-limited pollutants. When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by technology-based treatment requirements appropriate to the permittee, the permit may be modified.

(M) Notification Level.

(i) Incorporation. 40 CFR Section 122.44(f), as in effect on July 1, 1985, is adopted by reference.

(ii) A permit may be modified to establish a "notification level" as provided in 40 CFR Section 122.44(f), as in effect on July 1, 1985.

(N) Compliance Schedule. A permit may be modified to change a schedule of compliance to reflect time lost during construction of an innovative or alternate facility.

(O) When the permittee's effluent limitations were imposed under 33 U.S.C. Section 1342(a)(1) and the permittee demonstrates operation and maintenance costs that are totally disproportionate from the operation and maintenance costs considered in the development of a subsequently promulgated effluent limitations guideline, the permit may be modified. However, the limitations shall not be less stringent than the subsequent guideline.

(P) Any permit may be modified to correct technical mistakes, including errors in calculation or mistaken interpretations of law made in determining permit conditions.

(Q) When the discharger has installed the treatment technology considered by the permit writer in setting effluent limitations imposed under 33 U.S.C. Section 1342(a)(1) and has properly operated and maintained the facilities but nevertheless has been unable to achieve those effluent limitations, the permit may be modified. In this case, the limitations in the modified permit may reflect the level of pollutant control actually achieved, but shall not be less stringent than required by a subsequently promulgated effluent limitations guideline.

(2) Causes for modification or revocation and reissuance. Any permit may be modified, or alternatively, may be revoked and reissued when:

(A) Cause exists for termination under subsection (f) of this regulation, and the director determines that modification or revocation and reissuance is appropriate; or

(B) the director has received notification of a proposed transfer of the permit.

(f) Termination of permits.

(1) A permit may be terminated during its term or a permit may be denied for:

(A) Noncompliance by the permittee with any condition of the permit;

(B) the permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

(C) a determination that the permitted activity endangers human health or the environment and

can only be regulated to acceptable levels by permit modification or termination; or

(D) a change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit.

(2) The applicable procedures in subsection (g) of this regulation shall be followed for termination of any permit.

(g) Procedures for modifications, revocation and reissuance, or termination of permits.

(1) Any permit may be modified, revoked and reissued, or terminated either at the request of any interested person, including the permittee, or upon the director's initiative. All requests shall be in writing and shall contain facts or reasons supporting the request.

(2) If the director decides that the request is not justified, the requester shall be provided with a brief written response giving a reason for the decision. Denial of requests for modification, revocation and reissuance, or termination shall not be subject to public notice, comment, or hearings. Denials by the director may be informally appealed to the secretary by a letter briefly setting forth the relevant facts. The secretary may direct the director to begin modification, revocation and reissuance, or termination proceedings under paragraph (3) of this subsection. The appeal shall be considered denied if the secretary takes no action on the letter within 60 days after receiving it. This informal appeal shall be a prerequisite to seeking judicial review of agency action in denying a request for modification, revocation and reissuance, or termination.

(3)(A) If the director tentatively decides to modify or revoke and reissue a permit under subsection (e) of this regulation, the director shall prepare a draft permit under K.A.R. 28-16-60 incorporating the proposed changes. The director may request additional information, and in the case of a modified permit, may require the submission of an updated application. A new application for a permit shall be submitted for the reissuance of a revoked permit.

(B) In a permit modification under this regulation, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit. When a permit is revoked and reissued under this section, the entire permit shall be reopened just as if the permit had expired and was

being reissued. During any revocation and reissuance proceeding, the permittee shall comply with all conditions of the existing permit until a new final permit is reissued.

(4) If the director tentatively decides to terminate a permit under subsection (f) of this regulation, the director shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit which follows the same procedures as any draft permit prepared under K.A.R. 28-16-60.

(h) Transmission to regional administrator of permits. Upon issuance of any permit, a copy of the permit shall be forwarded to the regional administrator by the director.

(i) Reissuance of permits.

(1) At least 180 days prior to expiration of a permit, a permit holder wishing to renew the permit shall file an application, as required by the director.

(2) Permits shall not be reissued unless:

(A) The discharger is in compliance with or has substantially complied with all the terms, conditions, requirements and schedules of compliance contained in the existing permit;

(B) The discharger files an application and other necessary data as required by the director; and

(C) The discharge is consistent with applicable minimum standards of design, construction, and maintenance and water quality standards.

(3) The notice and hearing procedure for reissuance shall be the same as for the issuance of new permits. (Authorized by K.S.A. 65-171d, as amended by L. 1986, Ch. 204, Sec. 3, Sec. 6 and L. 1986, Ch. 201, Sec. 22; implementing K.S.A. 65-165, 65-166, effective, E-74-32, June 14, 1974; effective May 1, 1975, amended May 1, 1987.)

28-16-63. **Monitoring.** I. An appropriate monitoring program shall be included in all permits. The program may require the discharger to install, use and maintain at his expense, adequate monitoring equipment or methods (including, where appropriate, biological monitoring methods.)

II. Any discharge which 1) is not a minor discharge, 2) the regional administrator requests in writing to be monitored, or 3) contains a toxic pollutant for which an effluent standard has been established shall be monitored by the discharger for at least the following: (A) Flow (in gallons per day);

(B) Pollutants which are subject to reduction or elimination under the requirements, pollutants which would have a significant impact on the quality of the receiving waters, and pollutants specified by the regional administrator; and

(C) Each effluent flow or pollutant shall be monitored at intervals sufficiently frequent to yield data which reasonably characterize the nature of the discharge. Variable effluent flows and constituent levels shall be monitored at more frequent intervals.

III. Recording. (A) The discharger shall record the results of all monitoring and shall include for all samples: (1) The date, exact place, time of sampling, and who took the sample;

(2) The dates analyses were performed and who performed the analyses;

(3) Analytical techniques/methods used; and

(4) The results of such analyses.

(B) The discharger shall be required to retain for a minimum of three years any records of monitoring activities and results, including all original strip chart recording and calibration and maintenance records. The period of retention shall be extended during the course of any unresolved administrative enforcement action or litigation regarding the discharge of pollutants by the discharger or when ordered by the director.

IV. Reporting. (A) Monitoring results shall be reported on forms required by the director and forwarded to the director at specified time periods of not less than once per year.

(B) The director shall require the use of monitoring, recording, and reporting procedures which at a minimum are at least as stringent as any national monitoring, recording, and reporting requirements specified by the administrator in regulations issued pursuant to the act. (Authorized by K.S.A. 1974 Supp. 65-165, 65-166, 65-171d; effective, E-74-32, June 14, 1974; effective May 1, 1975.)

28-16-64. **Reserved.**

28-16-65. (Authorized by K.S.A. 12-3710 et seq.; effective, E-74-33, June 21, 1974; effective, E-76-20, May 1, 1975; effective May 1, 1976; revoked May 10, 1996.)

28-16-66. **Reserved.**

28-16-67. (Authorized by K.S.A. 12-3711; effective, E-78-4, Dec. 1, 1977; effective May 1, 1978; revoked May 10, 1996.)

**ESTABLISHMENT AND ADMINISTRATION  
OF CRITICAL WATER QUALITY  
MANAGEMENT AREAS**

**28-16-68. Reserved.**

**28-16-69. Definitions.** (a) Agricultural pollutants means sediments, organic material or microorganisms from cultivated fields, pastures or grazing land; pesticides; runoff from feedlots or other animal holding areas; fertilizers; or minerals contained in irrigation return flow.

(b) Critical water quality management area means a watershed, or a portion of a watershed, in which application of minimum state or national wastewater and water quality management practices and procedures cannot be reasonably expected to result in attainment of water quality goals, attainment of water quality standards, protection of resources of the state, prevention of excessive sediment deposition in stream beds, lakes or reservoirs, or prevention of destruction of fishery habitat; or an area in which additional treatment and control of pollutants can result in additional cost effective benefits.

(c) Critical area water quality management plan means a plan providing for the control of all pollutant sources within the critical area.

(d) Endangered species means those species of wildlife indigenous to the state whose existence is in immediate jeopardy due to a combination of natural or man-made factors.

(e) Kansas water quality management plan means the plan approved by senate concurrent resolution 1640 dated April 2, 1979.

(f) Rural clean water program means a program for the control of wastes from agricultural sources for improved water quality, promulgated in conformity with Section 208(j) (1)-(9) of the federal water pollution control act as amended, 33 U.S.C. 166, *et seq.*

(g) Rural clean water program coordinating committee means the state administrative committee, established pursuant to U.S. department of agriculture regulations, to administer the rural clean water program.

(h) Threatened species means those species of wildlife indigenous to the state whose existence may become endangered by continued deterioration due to natural or man-made forces.

(i) Water quality standards means standards found in K.A.R. 28-16-28 and 28a. (Authorized by K.S.A. 65-171a, 65-171d, 65-3301, 65-3303, 65-3304, 65-3305; effective May 1, 1981.)

**28-16-70. Designation of critical water quality management area.** (a) Watersheds or portions of watersheds shall be considered by the secretary for designation as critical water quality management areas because of pollutant sources which cause, or may reasonably be expected to cause, damages to resources of the state; public nuisance or health hazards; destruction of fishery habitat; excessive deposition of sediments on river bottoms, lakes or reservoirs; additional risk to threatened or endangered fish or wildlife; or violation of water quality standards.

(b) The secretary shall initiate such action on the secretary's initiative, at the request of other state or federal agencies, local governments, or through public initiative.

(c) The secretary shall give public notice of intent to consider an area for designation as a critical water quality management area. The secretary shall consider all responses to the public notice in determining whether to proceed with the evaluation of the candidate area.

(d) Any person, unit of local government, or state or federal agency proposing that an area be designated as a critical water quality management area shall submit a proposal to the secretary incorporating the following information: a map showing the boundaries of the proposed area; a brief discussion of the nature of the damages that are occurring or which may reasonably be expected to occur; a brief discussion of those pollutant sources believed to be responsible for the observed or potential damages; a brief discussion of the public support for, or likely objection to, a critical water quality management designation; and the name, title, and authority of the individual or agency submitting the proposal.

(e) Prior to the designation of a critical water quality management area the secretary shall:

(1) Evaluate all pollutant sources and the extent to which these pollutant sources are or may be reasonably expected to cause violation of water quality standards, damages to resources of the state, nuisance conditions, hazards to the public health, excessive sedimentation, destruction of fisheries habitat, or additional risk to threatened or endangered fish or wildlife species.

(2) Evaluate all data and consider public comments in determining the technical and economic feasibility of simultaneous control of all pollutant sources. When determining the technical and economic feasibility of agricultural pollutant reduction, the secretary shall consult with the state con-

ervation commission, the affected conservation district(s), and other knowledgeable sources. In conducting the evaluation, the secretary may invite and give consideration to comments from individuals, interest groups, federal agencies, other state agencies, and affected local government.

(f) If the secretary concludes, as a result of the evaluations, that the establishment of a critical water quality management area is necessary and pollutant control is technically and economically feasible, the secretary shall prepare a proposed management plan setting forth an implementation schedule for control of each pollutant source, an analysis of the costs and benefits of the proposed management plan, and the boundaries of the proposed area.

(g) The secretary shall give public notice of the availability of the proposed management plan, make copies available for review, and hold a public hearing on the proposed designation.

(h) The secretary, on the basis of the evaluation and public hearing, may designate an area as a critical water quality management area, and give public notice of the designation through publication in a newspaper having general distribution in the county or counties in which the designated area is located. (Authorized by K.S.A. 65-171a, 65-171d, 65-3301, 65-3303, 65-3304, 65-3305; effective May 1, 1981.)

**28-16-71. Administration of critical water quality management area.** (a) The secretary shall establish a local advisory committee to assist in the administration of each designated area. If pollutant reduction in the area involves agricultural pollutant reduction, the area shall be submitted as a candidate project to the state rural clean water program coordinating committee for funding under the rural clean water program.

(b) All permits issued by the secretary for the control of pollutants, the establishment of waste disposal sites, the construction or expansion of water supply or sewerage systems or the establishment of sanitation zones or other measures necessary for the control of pollutants shall be consistent with the adopted plan.

(c) The secretary shall prepare an annual report for each designated area and shall make copies of the report available to residents of the area. The report shall evaluate the effectiveness of control measures, including the approximate costs, effects on water quality and resources of the state,

and a brief summary of any public input related to administration of the area.

(d) The secretary may terminate designation of any designated critical water quality management area upon determination that such designation is not needed for protection of water resources, or that the controls are not technically or economically practical, or there is substantial public opposition. The secretary shall give public notice of intent and termination shall not be effective until sixty (60) days after such public notice. (Authorized by K.S.A. 65-171a, 65-171d, 65-3301, 65-3303, 65-3304, 65-3305; effective May 1, 1981.)

28-16-72 to 28-16-75. **Reserved.**

#### DEVELOPMENT OF COUNTYWIDE WASTEWATER MANAGEMENT PLANS

**28-16-76. Definitions.** (a) Effluent permits. Permits issued by the secretary to municipalities, industries or feedlot operators for operation of a sewerage system pursuant to 1978 Supp. K.S.A. 65-165 and fulfilling the permit requirements of section 402, 33 U.S.C. 466, *et seq.* as amended.

(b) Kansas water quality management plan. The plan for water quality management as approved by 1979 senate concurrent resolution 1640 dated April 2, 1979, developed pursuant to the requirements of section 208, 33 U.S.C. 466, *et seq.*

(c) Municipal construction grants. Financial assistance grants made by the U.S. environmental protection agency, pursuant to section 201(g)(1), 33 U.S.C. 466, *et seq.* as amended, to municipalities for the construction of sewerage works.

(d) Plan. The countywide wastewater management plan.

(e) Secretary. The secretary of health and environment. (Authorized by K.S.A. 65-3301, K.S.A. 1979 Supp. 65-3303, 65-3305, 65-3308; effective May 1, 1980.)

**28-16-77. Exemptions.** (a) Counties with populations of 30,000 or less may request exemption by filing a request by June 1, 1980, with the secretary.

(b) Each such request shall include a copy of the document which indicates the official action of the board of county commissioners requesting exemption from the requirement for preparation of a countywide wastewater management plan. In order to reach a determination of approval or denial of such exemption, the secretary may request

any of the following information which he determines to be necessary:

(1) The policy of each incorporated city with respect to the provision of sewerage service for an area within three (3) miles of the corporate limit;

(2) The policy of each incorporated city with respect to provision of water delivery within three (3) miles of the corporate limits;

(3) County controls over the construction of on-site residential wastewater treatment facilities, including septic tanks;

(4) County procedures for the approval of water delivery and wastewater systems for developing areas and the county procedures for coordinating these services; and

(5) County procedures for dealing with problem areas of urban stormwater runoff.

(c) The secretary will advise each county requesting an exemption within thirty (30) days after receipt of application of the decision to grant or deny the exemption or of the need for further information concerning wastewater management planning within the county. (Authorized by K.S.A. 65-3301, K.S.A. 1979 Supp. 65-3308, 65-3309; effective May 1, 1980.)

**28-16-78. County wastewater management committee.** The chairman of the county wastewater management committee shall, within ninety (90) days of organization of the committee, advise the secretary of its schedule for preparing and completing a plan. (Authorized by K.S.A. 65-3301, K.S.A. 1979 Supp. 65-3308, 65-3309, 65-3310; effective May 1, 1980.)

**28-16-79. Preparation of initial plan.** Each county which is required to submit a plan shall submit to the secretary on or before January 1, 1983 a draft of a workable plan together with reviews by each local governing body affected and by appropriate official planning agencies within the area covered by the plan for consistency with programs of comprehensive planning for the county and for each other local governing body. (Authorized by K.S.A. 65-3301, K.S.A. 1979 Supp. 65-3308, 65-3309, 65-3310; effective May 1, 1980.)

**28-16-80. Elements of plan.** (a) Each plan shall incorporate the following elements:

(1) The projected population development of the county for a twenty-five (25) year period beginning June 30, 1980, with subprojections for each five (5) year increment;

(2) Description of each existing sewerage system including treatment plants, major pumping stations, interceptors, and areas of combined sewers, including the age, size and capacity and ownership of each major unit;

(3) An evaluation of the projected ability of existing and projected sewerage systems to meet water quality standards (K.A.R. 28-16-28 and K.A.R. 28-16-28a);

(4) The schedule whereby new sewerage systems will be constructed or existing sewerage systems expanded to provide service for new areas. The schedule shall be such that:

(A) no new permanent treatment facilities will be projected in areas where sewer systems exist unless there is reasonable evidence that the waste to be treated is incompatible or that the existing system would be overloaded;

(B) temporary wastewater treatment facilities may be provided in areas without sewer service, and in which there is a reasonable potential for the construction of new interceptors;

(C) new treatment facilities will be provided in areas where no treatment facilities exist and interceptors are not within a reasonable distance or are not economically feasible;

(D) simplicity, reliability and energy efficiency will be emphasized in the design of treatment systems;

(E) the proliferation of very small waste treatment systems will be discouraged in metropolitan areas; and,

(F) agricultural and municipal waste disposal irrigation systems will be encouraged where practicable and will take into account the maintenance of minimum flow levels in receiving waters and established water rights;

(5) A description of each community water delivery system, including sources of supply, major storage facilities, major lines, pumping stations, and treatment plants;

(6) The schedule whereby new water supply systems will be constructed or existing systems expanded to provide service for those areas in which additional population development is projected;

(7) A description of the mechanisms to be used to coordinate the provision of water delivery and sewerage services in those areas in which further population growth or industrial development is projected;

(8) A land use map indicating those areas in which on-site residential wastewater treatment facilities may be used, a description of the permit

and inspection system used to regulate such developments, and the conditions imposed to assure satisfactory operation over a reasonable period of time;

(9) Copies of agreements between units of local government necessary to assure the orderly construction of new or extended sewerage or water delivery facilities;

(10) A land use map showing all significant waterways, flood plains and floodways, parks, lakes and reservoirs, recreational areas, sanitation zones, and critical water quality management areas and clearly establishing the relationship between these land uses and existing and projected water delivery and sewerage systems;

(11) Any predicted community developments which will have a major impact on the demands for water supply or sewerage service;

(12) The location of existing industrial waste treatment facilities, an assessment of potential waste loads and the relationship of these loads to those imposed by municipal discharges;

(13) The estimated costs of projected improvements for sewerage system extensions during the first five (5) year period of the twenty-five (25) year plan;

(14) An evaluation of the extent to which wastewater may be used for municipal or agricultural irrigation and the extent to which municipal wastewater may be reclaimed for industrial use;

(15) An evaluation of the extent to which urban stormwater runoff may contribute to violation of water quality standards, (K.A.R. 28-16-28 and K.A.R. 28-16-28a);

(16) Description and evaluation of current and projected sludge disposal practices and facilities;

(17) Identification of any relationships between the projected sewerage plans and county air quality maintenance plans; and

(18) A plan and schedule for review and updating of the plan at five (5) year intervals.

(b) The plan shall be based, insofar as practicable on available studies or reports and which may be incorporated by reference.

(c) Each plan shall, as appropriate, identify any water delivery or sewerage problems, the solution of which requires coordination with an adjacent county, and the mechanisms to be used to achieve this coordination.

(d) The committee shall hold one (1) or more public hearings on the plan and shall submit to the secretary a report of such hearings at the time it files the plan. (Authorized by K.S.A. 65-3301,

K.S.A. 1979 Supp. 65-3308, 65-3309, 65-3310; effective May 1, 1980.)

**28-16-81. Administration of approved plan.** (a) Any plan approved by the secretary will become a part of the Kansas water quality management plan. Applicants for effluent permits will be subject to section 208(e) of the federal water pollution control act, 33 U.S.C. 466, *et seq.*, and applicants for municipal construction grants will be subject to section 208(d) of the federal water pollution control act as amended.

(b) Permits issued by the secretary for the operation of sewerage facilities will be consistent with the plan.

(c) Permits issued by the secretary for new or extended sewerage systems will be consistent with the plan.

(d) Comments by the secretary on federally-funded projects pursuant to bureau of budget circular A-95 will be consistent with the plan.

(e) Comments made by the secretary on projects proposed by other state agencies will be consistent with the plan. (Authorized by K.S.A. 65-3301, K.S.A. 1979 Supp. 65-3303, 65-3304, 65-3308, 65-3310; effective May 1, 1980.)

**28-16-82. Funding.** (a) The secretary will include the name of each county required to develop a plan on the annual municipal construction grant priority list prepared by the department of health and environment in accordance with section 204 of the federal water pollution control act, 33 U.S.C. 466, *et seq.*

(b) Application may be made on forms provided by the secretary for a state grant in an amount up to but not exceeding twelve and one-half percent (12.5%) of the total cost of plan development. (Authorized by K.S.A. 65-3301, K.S.A. 1979 Supp. 65-3303, 65-3304, 65-3308, 65-3310, 65-3313; effective May 1, 1980.)

#### PRETREATMENT

**28-16-83. Entities regulated.** The provisions of K.A.R. 28-16-84 to 28-16-98, inclusive, and any amendments to those regulations, shall apply to:

(a) pollutants from nondomestic sources which are subject to one or more pretreatment standards and which are indirectly discharged, or are otherwise introduced by any means, into any publicly owned treatment works (POTW);

(b) any POTW which receives wastewater from sources subject to one or more pretreatment standards; and

(c) any new or existing source which is subject to one or more pretreatment standards. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-84. Objectives of general pretreatment regulations.** 40 CFR § 403.2, as in effect on July 1, 1986, is adopted by reference. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-85. Definitions.** 40 CFR § 403.3, as in effect on July 1, 1986, is adopted by reference. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-86. Local laws not superceded.** The provisions of K.A.R. 28-16-83 to 28-16-98, inclusive, shall not supercede any pretreatment requirements, including any standards or prohibitions, established by any local law as long as the local requirements are not less stringent than any set forth in the national pretreatment standards or other requirements or prohibitions established by the state or federal government. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-87. National pretreatment standards; prohibited discharges.** Subsections (a) to (e), inclusive, of 40 CFR § 403.5, as in effect on July 1, 1986, are adopted by reference. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-88. National pretreatment standards; categorical standard.** 40 CFR § 403.6, as in effect on July 1, 1986, is adopted by reference. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-89. Revision of categorical pretreatment standards to reflect POTW removal of pollutants.** (a) 40 CFR § 403.7, as in effect on July 1, 1986, is adopted by reference, except that in lieu of § 403.7(b)(3) the following shall apply: "(3) The POTW shall analyze the samples for pollutants in accordance with the analytical techniques prescribed in 40 CFR part 136, as in effect on July 1, 1986. Where 40 CFR part 136

does not contain sampling and analytical techniques for the pollutant in question, or where the secretary determines that the part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analysis shall be performed using validated analytical methods or other appropriate sampling and analytical procedures approved by the secretary. Alternate sampling and analytical techniques suggested by the POTW or other persons will be considered by the secretary."

(b) 40 CFR part 136, as in effect on July 1, 1986, is adopted by reference (see 49 FR 43234, 50 FR 690 and 51 FR 23692). (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1986; amended May 1, 1987.)

**28-16-90. POTW pretreatment programs, developed by POTW.** 40 CFR § 403.8, as in effect on July 1, 1986, is adopted by reference, except in lieu of paragraph (f)(1)(vii) the following shall apply: "(vii) Comply with the confidentiality requirements of the Kansas open records act." (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-91. POTW pretreatment programs.** Any municipality (POTW) with a Kansas water pollution control permit may be required to develop a local pretreatment program. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-92. POTW pretreatment programs or authorization to revise pretreatment standards; submission for approval.** 40 CFR § 403.9, as in effect on July 1, 1986, is adopted by reference. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-93. Approval procedures for POTW pretreatment programs and POTW revision of categorical pretreatment standards.** 40 CFR § 403.11, as in effect on July 1, 1986, is adopted by reference. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-94. Reporting requirements for POTW's and industrial users.** (a) 40 CFR § 403.12, as in effect on July 1, 1986, is adopted by reference, except that:

(1) in lieu of § 403.12(b)(5)(vi) the following shall apply: “(vi) Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR part 136, as in effect on July 1, 1986. Where 40 CFR part 136 does not contain sampling and analytical techniques for the pollutant in question, or where the secretary determines that the part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analysis shall be performed using validated analytical methods or other appropriate sampling and analytical procedures approved by the secretary. Alternate sampling and analytical techniques suggested by the POTW or other persons will be considered by the secretary.”

(2) in lieu of § 403.12(g) the following shall apply: “(g) Monitoring and analysis to demonstrate continued compliance. The reports required in paragraphs (b)(5), (d), and (e) of this section shall contain the results of sampling and analysis of the discharge, including the flow and the nature and concentration, or production and mass where requested by the control authority, of pollutants contained therein which are limited by the applicable pretreatment standards. The frequency of monitoring shall be as prescribed in the applicable pretreatment standard. All analyses shall be performed in accordance with 40 CFR part 136, as in effect on July 1, 1986. Where 40 CFR part 136 does not include sampling or analytical techniques for the pollutants in question, or where the secretary determines that the part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analyses shall be performed using validated analytical methods or other sampling and analytical procedures approved by the secretary. Alternate sampling and analytical techniques suggested by the POTW or persons will be considered by the secretary.”

(3) In lieu of § 403.12(k) the following shall apply: “(k) Penalties for providing false information. Any person who willfully provides false information on any report required by subsections (b), (d), (e), or (h), of 40 CFR § 403.12 shall be subject to the penalties imposed under K.S.A. 65-170c, K.S.A. 65-170d and K.S.A. 1985 Supp. 21-3805, and any amendments thereto.”

(b) 40 CFR part 136, as in effect on July 1, 1986, is adopted by reference (see 49 FR 43234, 50 FR 690, and 51 FR 23692). (Authorized by and implementing K.S.A. 65-171d; effective May 1,

1985; amended May 1, 1986; amended May 1, 1987.)

**28-16-95. Variances from categorical pretreatment standards for fundamentally different factors.** 40 CFR § 403.13, as in effect on July 1, 1986, is adopted by reference, except that: (a) in lieu of § 403.13(b), the following shall apply: “(b) A fundamentally different factors variance may be requested under this section by any interested person believing that factors relating to an industrial user are fundamentally different from the factors considered during development of a categorical pretreatment standard applicable to that user and that the existence of those factors justifies a different discharge limit than specified in the applicable categorical pretreatment standard. Such a variance request may be initiated by the secretary. A fundamentally different factors variance is not available for any toxic pollutant controlled in a categorical pretreatment standard; and”

(b) in lieu of § 403.13(c)(1)(ii), the following shall apply: “(ii) Factors relating to the discharge controlled by the categorical pretreatment standard are fundamentally different from the factors considered in establishing the standards; and.” (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1986; amended May 1, 1987.)

**28-16-96. Confidentiality of information.** Any information submitted to the department of health and environment shall be subject to disclosure or nondisclosure as provided in the Kansas open records act. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

**28-16-97. Net/Gross calculations.** 40 CFR § 403.15, as in effect on July 1, 1986, is adopted by reference, except that each reference to the enforcement division director, regional enforcement officer, water management division director or EPA shall be deemed to refer to the secretary. Nothing in this regulation shall relieve any person of the duty to obtain approval from the U.S. environmental protection agency. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1986; amended May 1, 1987.)

**28-16-98. Upset provisions.** 40 CFR § 403.16, as in effect on July 1, 1986, is adopted by reference, except that each reference to the

agency shall be deemed to refer to the Kansas department of health and environment. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1985; amended May 1, 1987.)

28-16-99 to 28-16-109. **Reserved.**

28-16-110. **Definitions.** For the purposes of the regulations in this article, the following words, terms and phrases are defined as follows:

(a) "Best practicable waste treatment technology (BPWTT)" means a cost-effective technology that can treat wastewater, including combined sewer overflows and nonexcessive infiltration and inflow, to meet the applicable provisions of Kansas water supply and sewage statutes, K.S.A. 65-161 to 65-171x; water pollution control statutes, K.S.A. 65-3301 to 65-3313; and the federal clean water act as amended on or before January 1, 1989, 33 USC 1251 *et seq.*

(b) "Department" means the Kansas department of health and environment.

(c) "Equivalency" means that portion of the Kansas water pollution control revolving fund which was directly made available by the federal government.

(d) "Equivalency project" means that portion of the project cost which is funded from the equivalency portion of the Kansas water pollution control revolving fund.

(e) "Facilities planning" means the necessary plans and studies directly related to the project financed from the Kansas water pollution control revolving fund. The content of a facilities plan shall be as described in the federal register 40 CFR 35.2030(b), as in effect on January 1, 1989.

(f) "Infiltration" means water other than sewage that enters a sewerage system from the ground through defective pipes, pipe joints, connections, or manholes.

(g) "Excessive infiltration" means the quantity of flow which is more than 120 gallons per capita per day or the quantity of infiltration which could be economically and effectively eliminated from a sewer system as determined in a cost-effectiveness analysis. Flow rates more than 120 gallons per capita per day when justified by water use records are not considered to be excessive infiltration.

(h) "Inflow" means water other than sewage that enters a sewerage system. Inflow does not include infiltration.

(i) "Excessive inflow" means a rainfall-induced flow rate in excess of 275 gallons per capita per day.

(j) "Loan applicant" means any county, city, sewer district, other public agency, or any combination thereof, created by or pursuant to Kansas statutes, filing an application for a loan pursuant to the Kansas water pollution control fund act of 1988.

(k) "Loan agreement" means an executed contract between a loan recipient and the secretary confirming the purpose of the loan, the amount and terms of the loan, the schedule of loan payments and repayments and any other agreed upon conditions set forth by the secretary.

(l) "Minority business enterprise" means a business certified as a minority business enterprise by a state or federal agency based on the authority of state or federal statutes.

(m) "Project" means the scope of work for which a loan is awarded.

(n) "Secretary" means the secretary of Kansas department of health and environment.

(o) "Sewerage" means the removal and treatment of surface water, sewage and other wastewater by sewers, a system of sewers, wastewater treatment processes or any other means such as recycling and reclamation.

(p) "Value engineering" means a cost control technique which uses a systematic approach to identify unnecessarily high costs in a project without sacrificing the reliability or efficiency of the project.

(q) "Women's business enterprise" means a business certified as a women's business enterprise by a state or federal agency based on the authority of state or federal statutes.

(r) "Wastewater treatment works" means any device, or system for the storage, treatment, recycling, and reclamation of sewage. These include:

(1) intercepting sewers, outfall sewers, sewage collection systems, pumping stations, facilities for sewage treatment and disposal of residues resulting from treatment, power and other equipment, their appurtenances, extensions, improvements, remodeling, additions and alterations thereof; and

(2) any works, including site acquisition of the land, that will be an integral part of the treatment process or are used for ultimate disposal of residues resulting from treatment. (Authorized by and implementing K.S.A. 1988 Supp. 65-3323; effective May 29, 1989.)

**28-16-111. Reserved.**

**28-16-112. Fund use eligibility.** (a) The fund shall be used only to finance all or any part of the following activities:

(1) loans to loan applicants for the planning, design, and construction of publicly-owned wastewater treatment works; and

(2) loans to loan applicants with taxing authority for the implementation of nonpoint source pollution control management programs developed in conformance with section 319 of the federal clean water act as amended on or before January 1, 1989, 33 USC 1251 *et seq.*

(b) Each project eligible to receive loans shall appear on the project priority list prepared by the department. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

**28-16-113. Interest rate.** Each loan shall bear interest for the entire life of the loan at a rate set by the secretary. The secretary may also set fees for servicing the loans. The interest rate together with the servicing fee shall be an amount equal to sixty percent of the previous three months' average "bond buyers 20 bond index" as published on the first Monday of each week of the preceding three months. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3326; effective May 29, 1989.)

**28-16-114. Repayment of loans.** (a) All principal and interest shall be repaid in accordance with the terms and conditions of the executed loan agreement. Principal and interest payments shall begin not later than two years after receipt of the first loan installment and in no case later than one year following the completion of the project. Repayment of the loan shall not exceed a 20-year repayment period as agreed upon in the loan agreement. Project completion is defined as initiation of operation or capability to initiate operation.

(b) Prepayment of principal in whole or part may be made in accordance with the terms and conditions of the executed loan agreement. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322 and 65-3326; effective May 29, 1989.)

**28-16-115. Dedicated loan repayment source.** (a) Each loan recipient shall adopt one or more dedicated sources of revenue for repayment of the loan including principal and interest. The

dedicated sources of revenue may be in the form of user charges, ad valorem taxes, special tax assessments, another permanent source of revenue or some combination of these sources. Each dedicated source of revenue shall be legally available to the loan recipient over the life of the loan repayment obligation and pledged to the repayment of the loan. Each dedicated source of revenue shall be approved by the secretary.

(b) Each loan recipient shall conduct a revenue source review every fifth year following the date of the loan agreement during the entire life of the loan repayment obligation and shall implement the new revenue rates as approved by the secretary. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3326 and 65-3327; effective May 29, 1989.)

**28-16-116. Failure to repay loan on schedule.** Upon failure of a loan recipient to pay one or more installments of the loan repayment on schedule, the governing body of the loan recipient shall be consulted by the secretary, and thereafter the governing body shall adopt charges, as set by the secretary, to be levied against users of the project. These charges shall remain in effect until the full amount of the loan, including principal and interest, has been repaid. The governing body of each loan recipient shall collect any charges established by the secretary or required by the secretary and shall expeditiously forward the collected moneys to the secretary. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3327; effective May 29, 1989.)

**28-16-117. Double benefits.** (a) Projects receiving construction grants under the federal clean water act shall not be eligible to receive loans under the Kansas water pollution control revolving fund act for the nonfederal shares of the projects costs.

(b) Loans shall be made only for the publicly-owned portion of sewerage projects.

(c) If a project receives a loan for planning, preparation of design and construction documents or both, and subsequently receives a federal grant allowance for the same purposes, the loan recipient shall repay the loan to the extent of the allowance received by not later than 30 days from the receipt of the allowance. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

28-16-118. **Project eligibility.** (a) In order to receive a loan, each sewerage facility equivalency project shall comply or be consistent with:

(1) The best practicable waste treatment technology requirements defined in K.A.R. 28-16-110(a);

(2) The facilities planning process defined in K.A.R. 28-16-110(e);

(3) The type of projects described in K.A.R. 28-16-119;

(4) The alternative ultimate waste disposal procedure described in K.A.R. 28-16-120;

(5) The infiltration and inflow requirements described in K.A.R. 28-16-121;

(6) The alternative and innovative treatment provisions described in K.A.R. 28-16-122;

(7) The open space recreation requirement described in K.A.R. 28-16-123;

(8) The capital improvement plan described in K.A.R. 28-16-124; and

(9) The water quality management plan described in K.A.R. 28-16-125.

(b) In order to receive a loan, each nonpoint source pollution control equivalency project shall comply or be consistent with the nonpoint source pollution control management plan described in K.A.R. 28-16-126. (Authorized by and implementing K.S.A. 1988 Supp. 65-3323; effective May 29, 1989.)

28-16-119. **Eligible project types.** (a) An equivalency loan may be granted for:

(1) Projects providing secondary treatment, any part of secondary treatment or any cost-effective alternative to secondary treatment;

(2) Projects providing a treatment process or any part of a treatment process which is more stringent than secondary treatment or cost-effective alternatives;

(3) Other wastewater treatment works;

(4) New interceptors and their appurtenances;

(5) Excessive infiltration or inflow correction projects; or

(6) Other sewerage facility projects, and nonpoint source pollution control management plan implementation projects, and groundwater quality protection projects. These types of projects shall not exceed 20% of equivalency funds, and require the specific designation of the governor.

(b) Any sewerage project or nonpoint source pollution control project may receive a loan from the nonequivalency portion of the Kansas water

pollution control revolving fund upon approval of the secretary. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322 and K.S.A. 1988 Supp. 65-3324; effective May 29, 1989.)

28-16-120. **Alternative ultimate disposal.** Each loan applicant for a sewerage facility project shall evaluate alternative methods and technologies for the reuse or ultimate disposal of treated wastewater and residue material resulting from the waste treatment process. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322 and 65-3326; effective May 29, 1989.)

28-16-121. **Infiltration and inflow.** Each loan applicant for a sewerage facility project shall demonstrate that: (a) the existing sewage collection systems related to the proposed project are not subject to excessive infiltration or inflow; or

(b) the loan applicant has been implementing an effective ongoing infiltration and inflow reduction program for those sewage collection systems. (Authorized by K.S.A. 65-3323; implementing K.S.A. 1988 Supp. 65-3322 and 65-3326; effective May 29, 1989.)

28-16-122. **Alternative and innovative treatment.** Each loan applicant for a wastewater treatment project shall demonstrate the consideration of cost effective alternative and innovative wastewater treatment processes and techniques during the planning, selection and design of the project. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

28-16-123. **Open space recreation.** Each loan applicant shall analyze and document the potential open space and recreation opportunities associated with the project. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

28-16-124. **Capital improvement plan.** Each loan applicant for a sewerage facility project shall submit to the secretary, with the loan application, a capital improvement financing plan for the applicant's projected sewerage facility needs. The plans shall cover not less than a five-year period and shall be approved by the governing body of the entity. The capital improvement financing plan shall be reviewed and kept current by the governing body during the entire life of the loan

repayment obligation. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

**28-16-125. Water quality management plan.** Each sewerage facility project eligible for a loan shall be consistent with the applicable water quality management plan, the county-wide wastewater management plan or both, and the loan applicant shall be a designated wastewater management agency within the management plan. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322 and 65-3326; effective May 29, 1989.)

**28-16-126. Nonpoint source pollution control management plan.** Each nonpoint pollution control or groundwater quality protection project shall be consistent with applicable nonpoint pollution source control management planning approved by the secretary. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

**28-16-127. Sewer use ordinance.** Each loan applicant for a sewerage facility project shall develop, and subsequent to the secretary's approval, adopt a sewer use ordinance or other legally binding document to protect the integrity of the entire wastewater works system by: (a) requiring the exclusion of excessive infiltration and inflows from the treatment works;

(b) prohibiting toxic concentrations of toxic materials in wastewater introduced into the treatment works; and

(c) prohibiting other pollutants in amounts or concentrations that:

(1) endanger public safety or the physical integrity of the treatment works; or

(2) cause violation of effluent or water quality limitations or cause residue or sludge processing or disposal problems. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322 and 65-3326; effective May 29, 1989.)

**28-16-128. User charge system.** Each loan applicant for a sewerage facility project shall develop, and subsequent to the secretary's review and approval, adopt a user charge system which shall produce adequate revenues for operation and maintenance of the entire wastewater works, including minor replacement. The user charge system shall be based on either actual use of the wastewater works, ad valorem taxes or a combination of the two. An ad valorem tax may only be

used if that form of dedicated user charge had been in place prior to the initiation of the proposed project. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322 and 65-3326; effective May 29, 1989.)

**28-16-129. Value engineering.** Each loan recipient for a sewerage project shall conduct value engineering during the design phase of the project if the total estimated project cost exceeds \$10 million. The value engineering recommendations shall be implemented to the maximum extent possible as approved by the secretary. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

**28-16-130. Project certification.** Each loan recipient shall certify to the secretary whether the project meets the project's performance standards on the date one year after the initiation of operations of the project. The loan recipient shall be responsible for assuring timely correction and compliance, including recertification in case the initial certification was a negative declaration. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

**28-16-131. Procurement.** Each loan recipient shall follow applicable state procurement laws and regulations and procedures established by the secretary. The approval of the secretary is required prior to procurement. (Authorized by and implementing K.S.A. 1988 Supp. 65-3323; effective May 29, 1989.)

**28-16-132. Fair labor standards.** Bidding documents for each wastewater treatment works equivalency project shall include the prevailing wage rates established for the locality by the U.S. department of labor under the federal Davis-Bacon act. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

**28-16-133. Small minority and women's business enterprises.** Each loan recipient for a wastewater treatment works equivalency project shall assure that affirmative steps were taken to utilize small, minority and women's businesses as sources of supplies, construction and services. Affirmative steps shall be documented and submitted to the department. Project-specific goals may be set by the secretary. (Authorized by K.S.A.

1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

28-16-134. **Projects documents.** (a) Each loan applicant for a sewerage facility projects shall submit, for the secretary's review and approval, the following documents:

(1) A completed loan application on application forms furnished by the department;

(2) A facilities plan that establishes the need for the project;

(3) Complete design plans, specifications, and construction bidding documents, including detailed cost estimates necessary for competitive bidding, and projected construction and payment schedules;

(4) A plan of operation, including an overall project completion schedule, annual operating cost projections for a minimum of five years, a description of the financial management system, and projected revenues to operate and maintain the entire facility. Revenue projections shall also include the loan repayment obligations; and

(5) A facility operations manual, which shall be submitted before 90% of the project is completed.

(b) Each loan applicant for a nonpoint source pollution control management plan implementation or groundwater quality protection project shall submit, for the secretary's review and approval, the following documents:

(1) A completed loan application on application forms furnished by the department;

(2) Planning documents or any assessment which establishes the need for the project;

(3) Documents needed to plan the construction of the project.

(4) A plan of operation and maintenance to assure project performance for the design life of the project; and

(5) A binding assurance that adequate financial resources will be available for operation and maintenance of the project during the life of the project. (Authorized by and implementing K.S.A. 1988 Supp. 65-3323; effective May 29, 1989.)

28-16-135. **Financial capability.** As part of the loan application, each loan applicant shall demonstrate and certify to the secretary that the applicant has the financial capability to repay the loan and to cover the costs of operation and maintenance of the entire system of which the proposed project is an integral part. The financial assessment shall cover the life of the loan obligations and consider, as a minimum, changes in economic

and population growth, existing in debt obligations, revenues, project costs, and effects on user charge rates. (Authorized by and implementing K.S.A. 1988 Supp. 65-3323; effective May 29, 1989.)

28-16-136. **Public participation.** Each loan recipient shall conduct a minimum of one public meeting and one public hearing prior to execution of the loan agreement.

(a) A public meeting shall be conducted during the preparation of the facilities plan, nonpoint source pollution control management plan or groundwater quality protection plan to discuss project alternatives. Public notice shall be given not less than 15 days before the public meeting.

(b) Prior to the adoption by the governing body and submission to the secretary for approval of the facilities plan, nonpoint source pollution control management plan or groundwater quality protection plan, a public hearing shall be conducted. Public notice shall be given not less than 30 days before the public hearing. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

28-16-137. **Environmental review.** (a) The Kansas environmental review procedure for the Kansas water pollution control revolving loan program, dated February, 1989 is adopted by reference as the required environmental procedure for an equivalency project.

(b) For an equivalency project, 40 CFR, 6.508(a), 6.511(b) and 6.512 as in effect on July 1, 1988, are adopted by reference.

(c) Those members of the public who participate in the environmental review process shall have the right to appeal the decisions made within that process. All such appeals shall be conducted pursuant to the Kansas administrative procedures act and the act for judicial review set forth in K.S.A. 1988 Supp. 77-501 et seq. and K.S.A. 77-601 et seq., respectively.

(d) When used in any provision adopted from 40 CFR Part 6, references to "EPA" shall be replaced with the Kansas department of health and environment; "grant" shall be replaced with loan agreement; "grantee" shall be replaced with applicant. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989; amended, T-28-10-17-89, Oct. 17, 1989; amended Dec. 26, 1989.)

28-16-138. **Project accounts.** Each loan recipient shall maintain project accounts in accordance with or similar to generally accepted government accounting standards defined in the 1988 edition of the Government Accounting, Auditing, and Financial Reporting manual issued by the Government Finance Officers Association. (Authorized by K.S.A. 1988 Supp. 65-3323; implementing K.S.A. 1988 Supp. 65-3322; effective May 29, 1989.)

28-16-150. **Scope.** The provisions of K.A.R. 28-16-150 through 28-16-154, inclusive and any amendments to those regulations, shall apply to the issuance of each general permit for water pollution control. (Authorized by K.S.A. 65-165; implementing K.S.A. 65-165 and K.S.A. 65-171d; effective Sept. 27, 1993.)

28-16-151. **Definitions.** 40 CFR 122.2 as in effect on July 1, 1991 is adopted by reference. (Authorized by K.S.A. 65-165; implementing K.S.A. 65-165 and K.S.A. 65-171d; effective Sept. 27, 1993.)

28-16-152. **Coverage.** 40 CFR 122.28(a) as in effect July 1, 1991, as amended at 57 FR 11412, April 2, 1992 is adopted by reference. (Authorized by K.S.A. 65-165; implementing K.S.A. 65-165 and K.S.A. 65-171d; effective Sept. 27, 1993.)

28-16-153. **Administration.** 40 CFR 122.28(b)(1), (2), and (3)(i), (iii), (iv), and (v), as in effect on July 1, 1991, as amended at 57 FR 11412, April 2, 1992 are adopted by reference, with the following modifications or exceptions. (a) The provisions of 40 CFR 122.28(b)(1) shall be modified as follows: "(1) In general. General permits may be issued, modified, revoked and reissued, or terminated in accordance with K.A.R. 28-16-59 through 28-16-62 inclusive, and K.A.R. 28-16-154."

(b) The provisions of 40 CFR 122.28(b)(2)(i) shall be modified as follows: "(i) Except as provided in paragraphs (b)(2)(v) and (b)(2)(vi) of this section, each discharger or treatment works treating domestic sewage seeking coverage under a general permit shall submit to the director a written notice of intent to be covered by the general permit. Any discharger or treatment works treating domestic sewage who fails to submit a notice of intent in accordance with the terms of the permit shall not be authorized to discharge, (or in the case of sludge disposal permit, to engage in a

sludge use or disposal practice), under the terms of the general permit unless the general permit, in accordance with paragraph (b)(2)(v) of this section, contains a provision that a notice of intent is not required or the director notifies a discharger or treatment works treating domestic sewage that it is covered by a general permit in accordance with paragraph (b)(2)(vi) of this section. A complete and timely notice of intent (NOI) to be covered in accordance with general permit requirements, fulfills the requirements for permit applications for purposes of K.A.R. 28-16-59."

(c) The provisions of 40 CFR 122.28(b)(2)(ii) shall be modified as follows: "(ii) The contents of each notice of intent shall be specified in each general permit and shall require the submission of information necessary for adequate program implementation, including at a minimum, the legal name and address of the owner, the legal name and address of the operator if different from the owner, the facility name and address, the type of facility, the type of discharge(s), the number of discharge points, the location using the public land survey system of each discharge point, and the receiving stream(s). A general permit for storm water discharge associated with industrial activity from inactive mining, inactive oil and gas operations, or inactive landfills occurring on federal lands where an operator cannot be identified may contain alternative notice of intent requirements. Each notice of intent shall be signed in accordance with K.A.R. 28-16-59(e)."

(d) The provisions of 40 CFR 122.28(b)(3)(iii) shall be modified as follows: "(iii) Any owner or operator authorized by a general permit may request to be excluded from the coverage of the general permit by applying for an individual permit. The owner or operator shall submit an application under K.A.R. 28-16-59, with reasons supporting the request, to the director no later than 90 days after the publication of the general permit by a state in accordance with applicable state law. Each request shall be processed under applicable state procedures. The request shall be granted by issuing an individual permit if the reasons cited by the owner or operator are adequate to support the request." (Authorized by K.S.A. 65-165; implementing K.S.A. 65-165 and K.S.A. 65-171d; effective Sept. 27, 1993.)

28-16-154. **Incorporation.** 40 CFR 124.10(d)(1)(i) through (v) and (vii) as in effect on July 1, 1991, are adopted by reference except that

the provisions of 40 CFR 124.10(d)(1)(v) shall be modified as follows: "(v) A brief description of the comment procedures required by K.A.R. 28-16-61(c) and (d) and the time and place of any hearing that will be held, including a statement of procedures to request a hearing, unless a hearing has already been scheduled, and other procedures by which the public may participate in the final permit decision." (Authorized by K.S.A. 65-165; implementing K.S.A. 65-165 and K.S.A. 65-171d; effective Sept. 27, 1993.)

### Article 17.—DIVISION OF VITAL STATISTICS

28-17-1. **Enforcement of uniform vital statistics act.** Any violation of K.S.A. 65-2401 *et seq.*, rules and regulations shall be immediately reported to the state registrar who shall immediately report such cases to the county attorney, or the official acting in that capacity, for prosecution, as provided in K.S.A. 65-2434. (Authorized by K.S.A. 65-2402, 65-2406, as amended by L. 1990, Chap. 226; implementing K.S.A. 65-2434; effective Jan. 1, 1966; amended Oct. 22, 1990.)

28-17-2. (Authorized by K.S.A. 65-2404; effective Jan. 1, 1966; revoked May 1, 1986.)

28-17-3. (Authorized by K.S.A. 65-2431; effective Jan. 1, 1966; revoked Oct. 22, 1990.)

28-17-4. (Authorized by K.S.A. 65-2430; implementing K.S.A. 65-2430; effective Jan. 1, 1966; amended May 1, 1983; revoked Oct. 22, 1990.)

28-17-5. (Authorized by K.S.A. 65-2402 and implementing K.S.A. 65-2409, as amended by L. 1990, Chap. 226; effective Jan. 1, 1966; amended Oct. 22, 1990; revoked May 10, 1996.)

28-17-6. **Fees for copies and searches.** (a) Subject to the restrictions of K.S.A. 65-2418, K.S.A. 65-2422 and K.S.A. 65-2423, and any amendments to those statutes, certified copies of certificates or parts of certificates shall be furnished by the state registrar upon request by an authorized applicant and payment of the required fee. The fee for making and certifying such copies shall be \$10.00 for the first copy and \$5.00 for each additional copy of the same record requested at the same time.

(b) For any search of the files and records when no certified copy is made, the fee shall be \$10.00 for each five-year period for which a search

is requested, or for each fractional part of a five-year period of years.

(c) For any search of the files necessary for preparing an amendment to a standard birth, death, marriage or divorce certificate already on file, the fee shall be \$10.00.

(d) For non-certified copies of certificates or parts of certificates requested for statistical research purposes, the fee and the manner in which the fee is to be paid shall be determined by the state registrar on the basis of costs for providing those services. (Authorized by and implementing K.S.A. 23-110, K.S.A. 65-2418, as amended by 1993 HB 2008, Sec. 15 and K.S.A. 65-2420, effective Jan. 1, 1966; amended Jan. 1, 1968; amended, E-78-18, July 7, 1977; amended May 1, 1978; amended May 1, 1983; amended, T-84-13, July 1, 1983; amended May 1, 1984; amended May 1, 1988; amended Oct. 7, 1991; amended, T-28-9-25-92, Sept. 25, 1992; amended Nov. 16, 1992; amended Aug. 16, 1993.)

28-17-7. (Authorized by K.S.A. 65-2402, implementing K.S.A. 65-2422, effective Jan. 1, 1966; amended May 1, 1986; amended May 1, 1987; revoked Oct. 22, 1990.)

28-17-8. (Authorized by K.S.A. 65-2402; implementing 65-2419; effective Jan. 1, 1966; amended May 1, 1986; revoked May 10, 1996.)

28-17-9. **Approval of application for delayed birth certificate.** Each application for a delayed birth certificate, including completed forms, as required, and documentary evidence, shall be examined, abstracted, and filed or rejected only in the office of vital statistics of the department. (Authorized by K.S.A. 65-2402; implementing 65-2420; effective Jan. 1, 1966; amended May 1, 1986.)

28-17-10. **Application form requirements for registration of delayed birth certificate.** Requirements for registration of a delayed birth certificate shall be the following: The delayed birth certificate shall be filled out giving facts as at the time of birth, signed before a notary public, or person duly authorized to administer oath, by the registrant if over 18 years of age. If under age 18, the delayed certificate shall be signed by the parent, older relative or attending physician. The delayed birth certificate shall be supported by the following evidence:

(1) Two original documents or certified or photostatic copies of original documents executed at

28-16-28c. General provisions. (a) Antidegradation.

(1) General purpose waters.

(A) Levels of water quality in surface waters of the state shall be maintained to protect the existing uses of those surface waters.

(B) For all surface waters of the state, if existing water quality is better than applicable water quality criteria established in these regulations, that existing water quality shall be fully maintained and protected. Water quality may be lowered only if the department finds, after full satisfaction of the intergovernmental coordination and public participation requirements on antidegradation, contained in the Kansas implementation procedures, and defined in K.A.R. 28-16-28b (cc), that a lowering of water quality is needed to allow for important social and economic development in the geographical area in which the waters are located. In allowing the lowering of water quality, the maintenance and protection of existing uses shall be ensured by the department, and the highest statutory and regulatory requirements for all new and existing point sources of pollution and all cost-effective and reasonable best management practices for nonpoint sources of pollution shall be achieved.

(2) Wherever state surface waters constitute exceptional state waters, discharges shall be allowed only if existing uses and existing water quality are maintained and protected.

(3) Wherever state surface waters constitute an outstanding national resource water, existing uses and existing water quality shall be maintained and protected. New or expanded discharges shall not be allowed into outstanding national resource waters.

(4) No degradation of surface water quality by artificial sources of pollution shall be allowed if the degradation will result in harmful effects on populations of any threatened or endangered species of aquatic or semiaquatic life or terrestrial wildlife or its critical habitat as defined in the federal endangered species act, 16 U.S.C. 1531 et seq., as amended on October 7, 1988, or in K.S.A. 32-960, and amendments thereto, and K.A.R. 115-15-3.

(5) Temporary sources of pollution complying with the provisions of K.A.R. 28-16-28c(d) and K.A.R. 28-16-28e(b), and producing only ephemeral surface water quality degradation not harmful to existing uses, may be allowed by the department.

(6) Implementation of these antidegradation provisions for thermal discharges shall be consistent with the requirements of the federal clean water act.

(7) Implementation of these antidegradation provisions shall be consistent with the guidelines provided in the Kansas implementation procedures, available upon request from the department.

(b) Mixing zones.

(1) General limitations. Mixing zones shall not extend across public drinking water intakes, stream tributary mouths, or swimming or boat ramp areas, nor shall mixing zones exist in locations that preclude the normal upstream or downstream movement or migration of aquatic organisms. Mixing zones associated with separate discharges shall not overlap unless it is demonstrated, to the department's satisfaction, that the overlapping will not result in a violation of the general water quality criteria set forth in K.A.R. 28-16-28e(b) or in an impairment of the existing uses of the receiving surface water.

(2) Discharges into classified streams. No mixing zone within a classified stream shall extend beyond the middle of the nearest downstream current crossover point, where the main current flows from one bank to the opposite bank, or more than 300 meters downstream from the point of effluent discharge.

(3) If the ratio of the receiving stream 7Q10 flow to the discharge design flow is less than 3:1, then the mixing zone shall not exceed the cross-sectional area or the volumetric flow of the stream during 7Q10 conditions, as measured immediately upstream of the discharge during the 7Q10 flow.

(4) Mixing zones shall be applied in accordance with K.A.R. 28-16-28c (b)(7) and (b)(8)(A), (B), (C), and (D), based on the classification and designated uses of a stream segment for individual pollutants. For surface waters classified as outstanding national resource waters, exceptional state waters, or designated as special aquatic life use waters, mixing zones for specific discharges may be allowed by the department. Mixing zones also may be allowed where there is no aquatic life criteria for an individual pollutant.

(5) Wherever site conditions preclude the rapid dispersion and dilution of effluent within the receiving surface water or if, in the judgement of the department, the presence of a mixing zone would unduly jeopardize human health or any of the existing uses of the receiving surface water, the right to prohibit the use of mixing zones or to place more stringent limitations on mixing zones than those stipulated in K.A.R. 28-16-28c(b)(2), (3), and (12) shall be reserved by the department.

(6) Outstanding national resource waters. Mixing zones may be allowed by the department for existing permitted discharges in stream segments classified in the future as outstanding national resource waters but shall be evaluated on a case-by-case basis.

(7) Exceptional state waters. If the ratio of the receiving stream 7Q10 flow to the discharge design flow is equal to or greater than 3:1, the mixing zone shall not exceed 25 percent of the cross-sectional area or volumetric flow

of the receiving stream during 7Q10 conditions, measured immediately upstream of the discharge during the 7Q10 flow. In the calculation of the mixing zone cross-sectional area or volumetric flow, the greater of the 7Q10 flow or 0.003 cubic meters per second shall be applied to any surface waters classified as exceptional state waters.

(8) General purpose waters.

(A) Special aquatic life use waters. If the ratio of the receiving stream 7Q10 flow to the discharge design flow is equal to or greater than 3:1, the mixing zone shall not exceed 25 percent of the cross-sectional area or volumetric flow of the receiving stream during 7Q10 conditions, measured immediately upstream of the discharge during the 7Q10 flow. In the calculation of the mixing zone cross-sectional area or volumetric flow, the greater of the 7Q10 flow or 0.003 cubic meters per second shall be applied to any surface waters designated as special aquatic life use waters.

(B) Expected aquatic life use waters. If the ratio of the receiving stream 7Q10 flow to the discharge design flow is equal to or greater than 3:1, the mixing zone shall not exceed 50 percent of the cross-sectional area or volumetric flow of the receiving stream during 7Q10 conditions, measured immediately upstream of the discharge during the 7Q10 flow. In the calculation of the mixing zone cross-sectional area or volumetric flow, the greater of the 7Q10 flow or 0.03 cubic meters per second shall be applied to any surface waters designated as expected aquatic life use waters.

(C) Restricted aquatic life use waters. If the ratio of the receiving stream 7Q10 flow to the discharge design flow is equal to or greater than 3:1, the mixing zone shall not exceed 100 percent of the cross-sectional area or volumetric flow of the receiving stream during 7Q10 conditions, measured immediately upstream of the discharge during the 7Q10 flow. In the calculation of the mixing zone cross-sectional area or volumetric flow, the greater of the 7Q10 flow or 0.03 cubic meters per second shall be applied to any surface waters designated as restricted aquatic life use waters.

(D) Recreational uses. If the ratio of the receiving stream 7Q10 flow to the discharge design flow is equal to or greater than 3:1, the mixing zone shall not exceed 25 percent of the cross-sectional area or volumetric flow of the receiving stream at 7Q10 conditions, measured immediately upstream of the discharge during the 7Q10 flow. In the application of this regulation, the 25 percent mixing zone shall apply only to recreational criteria. In the calculation of the mixing zone cross-sectional area or volumetric flow, the greater of the 7Q10 flow or 0.03 cubic meters per second shall be applied to surface waters designated for primary or secondary contact recreational use. If the ratio of the receiving stream 7Q10 flow to the discharge design flow is less than 3:1, then the mixing zone shall not exceed the cross-sectional area or volumetric flow of the receiving stream at 7Q10 conditions.

(9) Alternate low flows, as defined in K.A.R. 28-16-28b(d), may be utilized by the department in the calculation of mixing zone cross-sectional area or volumetric flow for specific water quality criteria. The 30Q10 flow for ammonia or the guaranteed minimum flow provided by a water assurance district, if applicable, shall be used by the department in the calculation of the mixing zone cross-sectional area or volumetric flow. Other alternate low flows, with a specific recurrence frequency and averaging period, shall be considered by the department if those flows will not result in excursions above aquatic life criteria more frequently than once every three years. The right to approve or disapprove any proposed alternate low flow shall be reserved by the department.

(10) Alternate mixing zones employing specific linear distances for mixing zones or alternate stream dilution volumes or cross-sectional areas, or both, may be allowed by the department. Site-specific mixing zones may be allowed if data generated from a site-specific study supports the use of an alternate mixing zone, but still maintains a zone of passage for aquatic life.

(11) Discharges into classified lakes. Mixing zones shall be prohibited by the department from extending into any lake classified as an outstanding national resource water, exceptional state water, or designated as a special aquatic life use water pursuant to K.A.R. 28-16-

28d(c). Mixing zones in lakes designated as expected aquatic life use water or restricted aquatic life use waters may be allowed by the department if the mixing zones do not extend farther than 50 meters from the point of effluent discharge or do not comprise more than one percent of the total volume of the receiving lake as measured at conservation pool.

(12) Discharges into classified wetlands. Mixing zones shall be prohibited by the department from extending into any classified lacustrine or palustrine wetland as defined in the ``corps of engineers wetlands delineation manual," as published in January 1987.

(c) Special conditions. The following special conditions shall not remove the obligation to design, build, or use pollution control structures or methods to control point and nonpoint sources of pollution as defined in K.A.R. 28-16-28b(kk) and (pp).

(1) Low flow. Classified streams may be excluded by the department from the application of some or all of the requirements of K.A.R. 28-16-28e(c) when stream flow is less than the 7Q10 flow, alternate low flow, or the minimum low flow, as described in K.A.R. 28-16-28c(b) (7) and (b) (8) (A), (B), (C), and (D).

(2) High flow. Classified streams may be excluded by the department from the application of the numerical criteria for fecal coliform bacteria in K.A.R. 28-16-28e(c) when actual stream flow exceeds the flow that is, over the long term, surpassed only 10% of the time.

(3) Effluent-created flow. For any current classified stream segment in which continuous flow is sustained primarily through the discharge of treated effluent and, as demonstrated by a use attainability analysis, does not meet the requirements of a classified stream in 28-16-28d(b), the discharger shall not be required to provide treatment beyond that treatment required in the federal secondary treatment regulation, 40 C.F.R. 133.102, as in effect on July 1, 1996. This discharge shall not violate the general surface water quality criteria listed in K.A.R. 28-16-28e(b) or impair any of the existing or attained designated uses of a downstream classified stream surface wa-

ter segment. If a use attainability analysis demonstrates that the designated uses of a surface water segment are not attainable, then the new use designations shall be adopted into the regulations at the next systematic review or subsequent triennial review.

(d) Treatment requirements.

(1) All effluent shall receive appropriate minimum levels of treatment as required by the federal clean water act.

(2) Effluent shall receive a higher level of treatment than that stipulated in K.A.R. 28-16-28c(d)(1), if the department determines that this higher level of treatment is needed to fully comply with the terms and conditions of K.A.R. 28-16-28c(a) or K.A.R. 28-16-28e.

(e) Analytical testing. All methods of sample collection, preservation, and analysis used in applying any of these regulations shall be in accordance with those methods prescribed by the department.

(f) Application of standards to privately owned surface waters. The application of water quality standards to privately owned water bodies shall be subject to the provisions of K.S.A. 65-171d, and amendments thereto. (Authorized by K.S.A. 1998 Supp. 65-171d and K.S.A. 65-171m; implementing K.S.A. 1998 Supp. 65-165 and 65-171d, and K.S.A. 65-171m; effective May 1, 1986; amended, T-87-8, May 1, 1986; amended May 1, 1987; amended Aug. 29, 1994, amended July 30, 1999.)

28-16-28d. Surface water use designation and classification. (a) Designated uses of surface waters shall be defined as follows.

(1) "Agricultural water supply use" means the use of surface water for agricultural purposes, including the following:

(A) "Irrigation," which means the withdrawal of surface water for application onto land; and

(B) "livestock watering," which means the provision of surface water to livestock for consumption.

(2) ``Aquatic life support use" means the use of surface water for the maintenance of the ecological integrity of streams, lakes, and wetlands, including the sustained growth and propagation of native aquatic life; naturalized, important, recreational aquatic life; and indigenous or migratory semiaquatic or terrestrial wildlife directly or indirectly dependent on surface water for survival.

(A) ``Special aquatic life use waters" means surface waters that contain combinations of habitat types and indigenous biota not found commonly in the state, or surface waters that contain representative populations of threatened or endangered species.

(B) ``Expected aquatic life use waters" means surface waters containing habitat types and indigenous biota commonly found or expected in the state.

(C) ``Restricted aquatic life use waters" means surface waters containing indigenous biota limited in abundance or diversity by the physical quality or availability of habitat, due to natural deficiencies or artificial modifications, compared to more suitable habitats in adjacent waters.

(3) ``Domestic water supply use" means the use of surface water, after appropriate treatment, for the production of potable water.

(4) ``Food procurement use" means the use of surface water for the obtaining of edible forms of aquatic or semiaquatic life for human consumption.

(5) ``Groundwater recharge use" means the use of surface water for the replenishing of fresh or usable groundwater resources. This use may involve the infiltration and percolation of surface water through sediments and soils or the direct injection of surface water into underground aquifers.

(6) ``Industrial water supply use" means the use of surface water for nonpotable purposes by industry, including withdrawals for cooling or process water.

(7) ``Recreational use" means the use of surface water

for primary or secondary contact recreation.

(A) "Primary contact recreational use" means recreation during which the body is immersed in surface water to the extent that some inadvertent ingestion of water is probable. This use shall include boating, mussel harvesting, swimming, skin diving, waterskiing, and windsurfing.

(B) "Secondary contact recreational use" means recreation during which ingestion of surface water is not probable. This use shall include wading, fishing, trapping, and hunting.

(b) Surface water classification. Surface waters shall be classified as follows:

(1) Classified streams shall include all streams with mean summer base flows exceeding 0.003 cubic meters per second. Regardless of flow, a stream shall be classified if studies conducted or accepted by the department show that pooling of water during periods of zero flow provides important refuges for aquatic life and permits biological recolonization of intermittently flowing segments.

(2) Classified lakes shall be all lakes owned by federal, state, county, or municipal authorities and all privately owned lakes that serve as public drinking water supplies or that are open to the general public for primary or secondary contact recreation.

(3) Classified wetlands shall be all wetlands owned by federal, state, county, or municipal authorities, all privately owned wetlands open to the general public for hunting, trapping, or other forms of secondary contact recreation, and all wetlands classified as outstanding national resource waters or exceptional state waters, or designated as special aquatic life use waters pursuant to K.A.R. 28-16-28d(c). Wetlands created for the purpose of wastewater treatment shall not be considered classified wetlands.

(c) Assignment of uses to surface waters.

(1) At a minimum, all classified surface waters shall be

designated for secondary contact recreational use and one of the three designations of aquatic life support use described in K.A.R. 28-16-28d(a)(2). Classified surface waters shall be designated for uses based upon the results of use attainability analyses conducted or accepted by the department. The provisions of the federal water quality standards regulation, 40 C.F.R. Part 131, as in effect on July 1, 1996, shall be followed and are hereby adopted by reference.

(2) A register of surface water classifications and use designations shall be maintained by the department. This register shall identify the designated uses of all listed major classified streams, lakes, and wetlands and list those streams, lakes, and wetlands recognized by the department as outstanding national resource waters or exceptional state waters. In the application of the current regulations, use designations of listed surface waters and waterbodies recognized as outstanding national resource waters, or exceptional state waters shall be those identified in the "Kansas surface water register," dated June 1, 1999, which is hereby adopted by reference.

(3) Beneficial use designations for classified streams, lakes, and wetlands not listed in the surface water register shall be determined by the department on a case-by-case basis in accordance with the requirements of K.A.R. 28-16-28d(c)(1). (Authorized by K.S.A. 1998 Supp. 65-171d and K.S.A. 65-171m; implementing K.S.A. 1998 Supp. 65-165 and 65-171d, and K.S.A. 65-171m; effective May 1, 1986; amended, T-87-8, May 1, 1986; amended May 1, 1987; amended Aug. 29, 1994; amended July 30, 1999.)

28-16-28f. Administration of surface water quality standards. (a) Review and revision. At least once every three years, a public hearing shall be held for the purpose of reviewing and, as appropriate, modifying the surface water quality standards and the surface water register.

(b) Application of modified surface water quality standards. A modification to the surface water quality standards, the surface water register, or both, shall have no effect on the requirements of any existing enforceable discharge permit issued under K.S.A. 65-165, and amendments thereto, unless the discharge fails to meet the requirements of the permit or the department has reason to believe that continuation of the discharge will result in a potential or actual public health hazard or in irreversible water use impairments.

(c) Water quality certification. No action identified below shall be taken unless the department has issued a water quality certification for the following:

(1) Any action requiring a federal license or permit pursuant to the federal clean water act;

(2) any action subject to the permitting provisions of K.S.A. 65-165, and amendments thereto;

(3) any water development project subject to the provisions of K.S.A. 82a-325 *et seq.*, and amendments thereto;

and

(4) any action undertaken by any Kansas state agency that, in the opinion of the department, has a potential water quality impact.

(d) Compliance schedules.

(1) Except as provided in K.A.R. 28-16-28f(d)(2), compliance schedules contained in any discharge permit or license issued by the department pursuant to the federal clean water act or K.S.A. 65-165, and amendments thereto, shall not extend more than three years beyond the date of permit issuance.

(2) Compliance schedules of up to five years in total duration may be granted if it is demonstrated, to the department's satisfaction, that the strict application of K.A.R. 28-16-28f(d)(1) is not feasible due to construction scheduling constraints or other technical limitations.

(e) Variances. If, upon written application by any person, the department finds that by reason of substantial and widespread socioeconomic impact the strict enforcement of the water quality criteria of K.A.R. 28-16-28e(c) is not feasible, a variance may be permitted by the department.

(1) The provisions of 40 C.F.R. 131.10(g), as in effect on July 1, 1996 and hereby adopted by reference, shall be considered by the department in reviewing the need for a variance.

(2) In granting a variance, conditions and time limitations may be set by the department with the intent that progress be made toward improvements in surface water quality.

(3) Each variance shall be granted only after public notification and opportunity for public comment. Each variance, once granted, shall be adopted into the regulations at the next systematic review or subsequent triennial review.

(4) No action that impacts upon water quality shall be

granted a variance from the terms and conditions of K.A.R. 28-16-28e(b).

(f) Site-specific criteria. Whenever the department proposes to use any site-specific criterion, a public notice stating the intention to use a site-specific criterion shall be issued by the department. The public notice shall include a description of the affected surface water or surface water segment and the reasons for applying the proposed criterion. If the department determines that there is significant public interest, a public hearing shall be held in the geographical vicinity of the affected surface water or surface water segment. A public notice of the final site-specific criterion shall be published in the Kansas register. Each site-specific criterion, once developed, shall be adopted into the regulations at the next systematic review or subsequent triennial review.

(g) Enforcement. Upon finding a violation of the surface water quality standards, an investigation to determine the cause of the violation shall be conducted by the department. If the department finds the violation to be caused by an artificial source of pollution, the person or persons responsible for the source of pollution shall be required by the department to initiate corrective actions that restore the designated uses of the affected surface water or surface water segment impaired by the violation and provide for the return of the original surface water quality conditions. Nothing in this regulation shall abridge the right of the department to proceed with enforcement actions as provided in other Kansas statutes, regulations, or both. (Authorized by K.S.A. 1998 Supp. 65-171d and K.S.A. 65-171m; implementing K.S.A. 1998 Supp. 65-165 and 65-171d, and K.S.A. 65-171m; effective May 1, 1986; amended Aug. 29, 1994; amended July 30, 1999.)

**28-16-28b. Definitions.** As used in these regulations, the following terms shall have these meanings: (a) "Alluvial aquifer" means the sediment that is associated with and deposited by a stream, and that contains water capable of being produced from a well.

(b) "Alternate low flow" means a low flow, alternate to the 7Q10 flow, based seasonally, hydrologically, or biologically, or a low flow determined through a water assurance district. Wherever used in this regulation in the context of mixing zones, the term shall refer to a minimum amount of stream flow occurring immediately upstream of a wastewater discharge and available, in whole or in part, for dilution and assimilation of wastewater discharges.

(c) "Antidegradation" means the regulatory actions and measures taken to prevent or minimize the lowering of water quality in surface waters of the state, including those streams, lakes, and wetlands in which existing water quality exceeds the level required for maintenance and protection of the existing uses.

(d) "Artificial sources" means sources of pollution that result from human activities that can be abated by construction of control structures, modification of operating practices, complete restraint of activities, or some combination of these methods.

(e) "Background concentration" means the concentration of any elemental parameter listed in tables 1a, 1b, 1c, 1d, and 1e of K.A.R. 28-16-28e, or any elemental substance meeting the definition of pollutant in K.A.R. 28-16-28b(qq), that occurs in a surface water immediately upstream of a point source or nonpoint source under consideration and is from natural sources.

(f) "Base flow" means that portion of a stream's flow contributed by sources of water other than precipitation runoff. Wherever used in this regulation in the context of stream classification, the term shall refer to a fair weather flow sustained primarily by springs or groundwater seepage, wastewater discharges, irrigation return flows,

releases from reservoirs, or some combination of these factors.

(g) "Bioaccumulation" means the accumulation of toxic substances in plant or animal tissue through either bioconcentration or biomagnification.

(h) "Bioassessment methods and procedures" means the use of biological methods of assessing surface water quality including field investigations of aquatic organisms and laboratory or field aquatic toxicity tests.

(i) "Bioconcentration" means the concentration and incorporation of toxic substances into body tissues from ambient sources.

(j) "Biomagnification" means the transport of toxic substances through the food chain through successive cycles of eating and being eaten, and through the subsequent accumulation and concentration of these substances in higher-order consumers and predators.

(k) "Biota" means the animal and plant life and other organisms of a given geographical region.

(l) "Carcinogenic" means having the property of inducing the production of cancerous cells in organisms.

(m) "Classified surface water" means any surface water or surface water segment that supports or, in the absence of artificial sources of pollution, would support one or more of the designated uses of surface water defined in K.A.R. 28-16-28d(a), or that otherwise meets the criteria for classification given in K.A.R. 28-16-28d(b).

(n) "Compliance schedule" means any provision in a discharge permit, license, or enforceable order issued by the department pursuant to the federal clean water act or K.S.A. 65-165, and amendments thereto, that, for the purposes of meeting water quality-based effluent limitations, technology-based limits, effluent limitations determined through best professional judgement, or other requirements in the Kansas statutes and regulations, provides a

specified period of time for the construction or renovation of a wastewater treatment facility and the completion of any related scientific or engineering studies, reports, plans, design specifications, or other submittals required by the department.

(o) "Condition of acute toxicity" means any concentration of a toxic substance that exceeds the applicable acute criterion for aquatic life support presented in K.A.R. 28-16-28e or, for substances not listed in K.A.R. 28-16-28e or for mixtures of toxic substances, any concentration that exceeds 0.3 times the median lethal concentration. The concentration at which acute toxicity exists shall be determined through laboratory toxicity tests conducted in accordance with the United States environmental protection agency's "methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms," fourth edition, as published in August 1993, which is hereby adopted by reference.

(p) "Condition of chronic toxicity" means any concentration of a toxic substance that exceeds the applicable chronic criterion for aquatic life support presented in K.A.R. 28-16-28e or, for substances not listed in K.A.R. 28-16-28e or for mixtures of toxic substances, any concentration that exceeds the no-observed-effect level. The concentration at which chronic toxicity exists shall be determined through laboratory toxicity tests conducted in accordance with the United States environmental protection agency's "short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms," third edition, as published in July 1994, which is hereby adopted by reference.

(q) "Criterion" means any numerical element or narrative provision of the surface water quality standards representing an enforceable water quality condition.

(r) "Department" means the Kansas department of health and environment.

(s) "Designated use" means any of the beneficial uses specifically attributed to surface waters of the state in

K.A.R. 28-16-28d.

(t) "Discharge" means the release of effluent, either directly or indirectly, into surface waters of the state.

(u) "Ecological integrity" means the natural or unimpaired structure and functioning of an aquatic or terrestrial ecosystem.

(v) "Effluent" means the sewage or other wastewater discharged from an artificial source.

(w) "Exceptional state waters" means any of the surface waters or surface water segments that are of remarkable quality or of significant recreational or ecological value, are listed in the surface water register, as defined in K.A.R. 28-16-28b (zz), and are afforded the level of water quality protection under the antidegradation provisions of K.A.R. 28-16-28c(a) and the mixing zone provisions of K.A.R. 28-16-28c(b).

(x) "Existing use" means any of the beneficial uses described in K.A.R. 28-16-28d known to have occurred in, or to have been made of, a surface water or surface water segment on or after November 28, 1975.

(y) "Fecal coliform bacteria" means facultatively anaerobic, gram negative, non-spore forming, rod-shaped bacteria that, when cultured under specific laboratory conditions, will ferment lactose, thereby producing acid, gas, or both.

(z) "Federal clean water act" means the federal water pollution control act, 33 U.S.C. 1251 et seq., as amended on February 4, 1987.

(aa) "General purpose waters" means any classified surface water that is not classified as an outstanding national resource water or an exceptional state water.

(bb) "Groundwater" means water located under the surface of the land that is or can be the source of supply for wells, springs, or seeps, or that is held in aquifers or

the soil profile.

(cc) "Kansas implementation procedures: surface water" dated September 15, 2000, means written departmental procedures used for carrying out specific provisions of surface water quality standards, available upon request from KDHE's division of environment, which is hereby adopted by reference.

(dd) "Maximum contaminant level" means any of the enforceable standards for finished drinking water quality promulgated by the United States environmental protection agency pursuant to section 300g-1(b)(3) of the federal safe drinking water act, 42 U.S.C. 300f through 300j-9, as amended on August 6, 1996, which is hereby adopted by reference.

(ee) "Median lethal concentration" means the concentration of a toxic substance or a mixture of toxic substances calculated to be lethal to 50 percent of the population of test organisms in an acute toxicity test.

(ff) "Microfibers per liter (F  $\mu$ fibers/L)" means the number of microscopic particles with a length-to-width ratio of 3:1 or greater present in a volume of one liter.

(gg) "Microgram per liter (F  $\mu$ g/L)" means the concentration of a substance at which one one-millionth of a gram ( $10^{-6}$  g) of the substance is present in a volume of one liter.

(hh) "Milligram per liter (mg/L)" means the concentration of a substance at which one one-thousandth of a gram ( $10^{-3}$  g) of the substance is present in a volume of one liter.

(ii) "Mixing zone" means the designated portion of a stream or lake where a discharge is incompletely mixed with the receiving surface water and where, in accordance with K.A.R. 28-16-28e, concentrations of certain pollutants may legally exceed chronic water quality criteria associated with the established designated uses that are applied in most other portions of the receiving surface

water.

(jj) "Mutagenic" means having the property of directly or indirectly causing a mutation.

(kk) "Nonpoint source" means any activity that is not required to have a national pollutant discharge elimination system permit and that results in the release of pollutants to waters of the state. This release may result from precipitation runoff, aerial drift and deposition from the air, or the release of subsurface brine or other contaminated groundwaters to surface waters of the state.

(ll) "No-observed-effect level" means the highest concentration of a toxic substance, or a mixture of toxic substances, that has no statistically significant adverse effect on the population of test organisms in a chronic toxicity test.

(mm) "Outstanding national resource water" means any of the surface waters or surface water segments of extraordinary recreational or ecological significance identified in the surface water register, as defined in K.A.R. 28-16-28b(zz), and afforded the highest level of water quality protection under the antidegradation provisions of K.A.R. 28-16-28c(a) and the mixing zone provisions of K.A.R. 28-16-28c(b).

(nn) "pH" means the common logarithm of the reciprocal of the hydrogen ion concentration measured in moles per liter, expressed on a scale that ranges from zero to 14, with values less than seven being more acidic and values greater than seven being more alkaline.

(oo) "Picocurie per liter (pCi/L)" means a volumetric unit of radioactivity equal to 2.22 nuclear transformations per minute per liter.

(pp) "Point source" means any discernible, confined, and discrete conveyance including any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or floating craft, from which pollutants are or may be

discharged. This term may include structures or site conditions that act to collect and convey stormwater runoff from roadways, urban areas, or industrial sites. This term shall not include agricultural stormwater discharges or return flows from irrigated agricultural land.

(qq) ``Pollutant" means any physical, biological, or chemical conditions, substances, or combination of substances released into surface waters of the state that results in surface water pollution, as defined in K.A.R. 28-16-28b(rr).

(rr) ``Pollution" means either of the following:

(1) Contamination or other alteration of the physical, chemical, or biological properties of the surface waters of the state, including changes in temperature, taste, odor, turbidity, or color of the waters, or discharges of gaseous, liquid, solid, radioactive, microbiological, or other substances into surface waters in a manner that may create a nuisance or render these waters harmful, detrimental, or injurious to public health, safety, or welfare; to domestic, industrial, agricultural, recreational, or other beneficial uses; or to livestock, domestic animals, or native or naturalized plant or animal life; or

(2) any discharge that will or is likely to exceed state effluent limitations predicated upon technology-based effluent standards, or water quality-based standards.

(ss) ``Potable water" means water that is suitable for drinking and cooking purposes in terms of both human health and aesthetic considerations.

(tt) ``Precipitation runoff" means the rainwater, or the meltwater derived from snow, hail, sleet, or other forms of atmospheric precipitation, that flows by gravity over the surface of the land and into streams, lakes, or wetlands.

(uu) ``Presedimentation sludge" means a slurry or suspension of residual solid materials derived from an initial step in the production of potable water. Presedimentation

sludge shall also include residual solids originating from the raw water supply used for industrial or other non-potable water purposes, before the addition of any artificial materials. The solid materials shall include sand, silt, and other easily settleable particles originating from the raw water supply.

(vv) "Private surface water" means any freshwater reservoir or pond that is both located on and completely bordered by land under common private ownership.

(ww) "Seven-day, ten-year low flow (7Q10 flow)" means the seven-day average low flow having a recurrence frequency of once in 10 years, as statistically determined from historical flow data. Where used in this regulation in the context of mixing zones, the term shall refer to the minimum amount of stream flow occurring immediately upstream of a wastewater discharge and available, in whole or in part, for dilution or assimilation of wastewater discharges.

(xx) "Site-specific criterion" means any criterion applicable to a given classified surface water segment and developed for the protection of the designated uses of that segment alone.

(yy) "Stream flow" means the volume of water moving past a stream cross-sectional plane per unit of time.

(zz) "Surface water register" means a list of the state's major classified surface waters, including a listing of waters recognized as outstanding national resource waters or exceptional state waters, and the surface water use designations for each classified surface water, periodically updated and published by the department pursuant to the requirements of K.A.R. 28-16-28d(c)(2) and K.A.R. 28-16-28f(a).

(aaa) "Surface water segment" means a delineated portion of a stream, lake, or wetland.

(bbb) "Surface waters" means all of the following:

(1) Streams, including rivers, creeks, brooks, sloughs, draws, arroyos, canals, springs, seeps, and cavern streams, and any alluvial aquifers associated with these surface waters;

(2) lakes, including oxbow lakes and other natural lakes and man-made reservoirs, lakes, and ponds; and

(3) wetlands, including water bodies meeting the technical definition for jurisdictional wetlands given in the ``corps of engineers wetlands delineation manual," as published in January 1987, which is hereby adopted by reference.

(ccc) ``Surface waters of the state" means all surface waters occurring within the borders of the state of Kansas or forming a part of the border between Kansas and one of the adjoining states.

(ddd) ``Teratogenic" means having the property of causing abnormalities that originate from impairment of an event that is typical in embryonic or fetal development.

(eee) ``Toxic substance" means any substance that produces deleterious physiological effects in humans, animals, or plants.

(fff) ``Turbidity" means the cloudiness of water as measured by optical methods (nephelometry) and expressed in standard nephelometric units.

(ggg) ``Use attainability analysis" means a study conducted or accepted by the department that is designed to determine whether or not a surface water or surface water segment supports, or is capable of supporting in the absence of artificial sources of pollution, one or more of the designated uses defined in K.A.R. 28-16-28d(a).

(hhh) ``Variance" means the department's written approval and authorization of a proposed action that knowingly will result in a lack of conformity with one or more of the criteria of K.A.R. 28-16-28e(c) but that is deemed

necessary based on the provisions of 40 C.F.R. 131.10(g), as in effect on July 1, 1996, which is hereby adopted by reference. Variances shall be administered by the department in accordance with K.A.R. 28-16-28f(e).

(iii) "Water-effect ratio (WER)" means the numerical toxicity (median lethal concentration or no-observed-effect level) of a chemical pollutant diluted in water from a given stream, lake, or wetland divided by the numerical toxicity of the same pollutant diluted in laboratory water.

(jjj) "Water quality certification" means the department's written finding that a proposed action that impacts upon water quality will comply with the terms and conditions of the surface water quality standards.

(kkk) "Whole-effluent toxicity limitation" means any restriction imposed by the department on the overall acute or chronic toxicity of an effluent discharged to a surface water.

(lll) "Zone of initial dilution" means the region of a surface water in the immediate vicinity of a discharge where acute and chronic criteria may be exceeded. The zone shall comprise, in terms of volume, no more than 10 percent of the mixing zone. (Authorized by K.S.A. 1999 Supp. 65-171d and K.S.A. 65-171m; implementing K.S.A. 1999 Supp. 65-165 and 65-171d, and K.S.A. 65-171m; effective May 1, 1986; amended Aug. 29, 1994; amended July 30, 1999; amended Nov. 3, 2000.)

**28-16-28e. Surface water quality criteria.** (a) Criteria development guidance. The development of surface water quality criteria for substances not listed in these standards shall be guided by water quality criteria published by the United States environmental protection agency. When the department finds that the criteria listed in this regulation are underprotective or overprotective for a given surface water segment, appropriate site-specific criteria may be developed and applied by the department, in accordance with K.A.R. 28-16-28f(f), using bioassessment methods or other related scientific proce-

dures, including those procedures described in the United States environmental protection agency's "water quality standards handbook," second edition, as published in August 1994.

(b) General criteria for surface waters. The following criteria shall apply to all surface waters, regardless of classification.

(1) Surface waters shall be free, at all times, from the harmful effects of substances that originate from artificial sources of pollution and that produce any public health hazard, nuisance condition, or impairment of a designated use.

(2) Hazardous materials derived from artificial sources, including toxic substances, radioactive isotopes, and infectious microorganisms derived directly or indirectly from point or nonpoint sources, shall not occur in surface waters at concentrations or in combinations that jeopardize the public health or the survival or well-being of livestock, domestic animals, terrestrial wildlife, or aquatic or semiaquatic life.

(3) Surface waters shall be free of all discarded solid materials, including trash, garbage, rubbish, offal, grass clippings, discarded building or construction materials, car bodies, tires, wire, or other unwanted or discarded materials. The placement of stone and concrete rubble for bank stabilization shall be acceptable to the department, if all other required permits are obtained before placement.

(4) Surface waters shall be free of floating debris, scum, foam, froth, or other floating materials directly or indirectly attributable to artificial sources of pollution.

(5) Oil and grease from artificial sources shall not cause any visible film or sheen to form upon the surface of the water or upon submerged substrate or adjoining shorelines, nor shall these materials cause a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines.

(6) Surface waters shall be free of deposits of sludge or fine solids attributable to artificial sources of pollution.

(7) Taste-producing and odor-producing substances of artificial origin shall not occur in surface waters at concentrations that interfere with the production of potable water by conventional water treatment processes, that impart an unpalatable flavor to edible aquatic or semiaquatic life or terrestrial wildlife, or that result in noticeable odors in the vicinity of surface waters.

(8) The natural appearance of surface waters shall not be altered by the addition of color-producing or turbidity-producing substances of artificial origin.

(9) In stream segments where background concentrations of naturally occurring substances, including chlorides and sulfates, exceed the water quality criteria listed in Table 1a of K.A.R. 28-16-28e(d), at ambient flow, the existing water quality shall be maintained, and the newly established numeric criteria shall be the background concentration, as defined in K.A.R. 28-16-28b(e). Background concentrations shall be established using the methods outlined in the "Kansas implementation procedures: surface water," dated September 15, 2000, and available upon request from the department.

(c) Criteria for designated uses of surface waters. The following criteria shall apply to all classified surface waters designated for the indicated beneficial uses.

(1) Agricultural water supply use. The water quality criteria for irrigation and livestock watering set forth in Table 1a of K.A.R. 28-16-28e(d) shall not be exceeded outside of mixing zones due to artificial sources of pollution.

(2) Aquatic life support use.

(A) Dissolved oxygen. The concentration of dissolved oxygen in surface waters shall not be lowered below 5.0 mg/L by the influence of artificial sources of pollution.

(B) Nutrients. The introduction of plant nutrients into streams, lakes, or wetlands from artificial sources shall be controlled to prevent the accelerated succession or replacement of aquatic biota or the production of undesirable quantities or kinds of aquatic life.

(C) pH. Artificial sources of pollution shall not cause the pH of any surface water outside of a zone of initial dilution to be below 6.5 or above 8.5.

(D) Suspended solids. Suspended solids added to surface waters by artificial sources shall not interfere with the behavior, reproduction, physical habitat, or other factors related to the survival and propagation of aquatic or semiaquatic life or terrestrial wildlife. In the application of this provision, suspended solids associated with discharges of presedimentation sludge from water treatment facilities shall be deemed noninjurious to aquatic and semiaquatic life and terrestrial wildlife, if these discharges comply fully with the requirements of K.A.R. 28-16-28e(b)(6) and (8) and K.A.R. 26-16-28e(c)(2)(F).

(E) Temperature.

(i) Except as provided in K.A.R. 28-16-28e(c) (2) (E) (ii), a discharge shall not elevate the temperature of a receiving surface water beyond the zone of initial dilution above 32E° C (90E° F). Heat of artificial origin shall not be added to a surface water in excess of the amount that will raise the temperature of the water beyond the mixing zone more than 3E° C above natural conditions. Additionally, a discharge to a receiving water shall not lower the temperature of the water beyond the mixing zone more than 3E° C below natural conditions. The normal daily and seasonal temperature variations occurring within a surface water before the addition of heated or cooled water of artificial origin shall be maintained.

(ii) Temperature criteria applicable to industrial cooling water recycling reservoirs that meet the requirements for classification presented in K.A.R. 28-16-28d(b)(2) shall be established by the department on a case-by-case basis.

(F) Toxic substances.

(i) Conditions of acute toxicity shall not occur in classified surface waters outside of zones of initial dilution, nor shall conditions of chronic toxicity occur in classified surface waters outside of mixing zones.

(ii) Acute criteria for the aquatic life support use given in tables 1a, 1b, and 1c of K.A.R. 28-16-28e(d) shall apply beyond the zone of initial dilution. Chronic criteria for the aquatic life support use given in tables 1a, 1b, 1d, and 1e of K.A.R. 28-16-28e(d) shall apply beyond the mixing zone.

(iii) When a discharge contains a toxic substance that lacks any published criteria for the aquatic life support use, or when a discharge contains a mixture of toxic substances capable of additive or synergistic interactions, bioassessment methods and procedures shall be used by the department to establish whole-effluent toxicity limitations that are consistent with paragraph (2) (F) (i) of this subsection.

(3) Domestic water supply use.

(A) Except as provided in K.A.R. 28-16-28e(c) (3) (B), criteria listed in Table 1a of K.A.R. 28-16-28e(d) for domestic water supply use shall not be exceeded at any point of domestic water supply diversion.

(B) In stream segments where background concentrations of naturally occurring substances, including chlorides and sulfates, exceed the domestic water supply criteria listed in Table 1a of K.A.R. 28-16-28e(d), at ambient flow, due to intrusion of mineralized groundwater, the existing water quality shall be maintained, and the newly established numeric criteria for domestic water supply shall be the background concentration, as defined in K.A.R. 28-16-28b(f). Background concentrations shall be established using the methods outlined in the "Kansas implementation procedures: surface water," dated September 15, 2000, available upon request from the department.

(C) Any substance derived from an artificial source that, alone or in combination with other synthetic or naturally occurring substances, causes toxic, carcinogenic, teratogenic, or mutagenic effects in humans shall be limited to nonharmful concentrations in surface waters. Unless site-specific water quality conditions warrant the promulgation of more protective criteria under the provisions of K.A.R. 28-16-28e(a) and K.A.R. 28-16-28f(f), maximum contaminant levels for toxic, carcinogenic, teratogenic, or mutagenic substances promulgated by the United States environmental protection agency pursuant to section 300g-1 of the federal safe drinking water act, 42 U.S.C. 300f through 300j-9, as amended on August 6, 1996, shall be deemed nonharmful by the department and adopted as domestic water supply criteria.

(4) Food procurement use.

(A) Criteria listed in Table 1a of K.A.R. 28-16-28e(d) for food procurement use shall not be exceeded outside of a mixing zone due to any artificial source of pollution.

(B) Substances that can bioaccumulate in the tissues of edible aquatic or semiaquatic life or wildlife through bioconcentration or biomagnification shall be limited in surface waters to concentrations that result in no harm to human consumers of these tissues. For bioaccumulative carcinogens, surface water concentrations corresponding to a cancer risk level of less than 0.000001 ( $10^{-6}$ ) in human consumers of aquatic or semiaquatic life or wildlife shall be deemed nonharmful by the department and adopted as food procurement criteria. Average rates of tissue consumption and lifetime exposure shall be assumed by the department in the estimation of the cancer risk level.

(5) Groundwater recharge use. In surface waters designated for the groundwater recharge use, water quality shall be such that, at a minimum, degradation of groundwater quality does not occur. Degradation shall include any statistically significant increase in the concentration of any chemical or radiological contaminant or infectious microorganism in groundwater resulting from surface

water infiltration or injection.

(6) Industrial water supply use. Surface water quality criteria for industrial water supplies shall be determined by the department on a case-by-case basis.

(7) Recreational use.

(A) General. The introduction of plant nutrients into surface waters designated for primary or secondary contact recreational use shall be controlled to prevent the development of objectional concentrations of algae or algal by-products or nuisance growths of submersed, floating, or emergent aquatic vegetation.

(B) Primary contact recreation. Artificial sources of pollution shall not cause concentrations of fecal coliform bacteria in surface waters designated for primary contact recreational use to exceed a geometric mean of 200 organisms per 100 milliliters beyond the mixing zone. Calculation of the geometric mean shall be based on the analysis of at least five consecutive samples collected during separate 24-hour periods. No sample shall exceed 900 organisms per 100 milliliter sample. These criteria shall be in effect from April 1 through October 31 of each year. The concentration of fecal coliform bacteria in surface waters designated for primary contact recreation shall not exceed 2,000 organisms per 100 milliliters beyond the mixing zone, from November 1 through March 31 of each year.

(C) Secondary contact recreation. Artificial sources of pollution shall not cause concentrations of fecal coliform bacteria in surface waters designated for secondary contact recreational use to exceed 2,000 organisms per 100 milliliters beyond the mixing zone. This criterion shall be in effect from January 1 through December 31 of each year.

(D) Wastewater effluent shall be disinfected if it is determined by the department that the discharge of non-disinfected wastewater constitutes an actual or potential threat to public health. Situations that constitute an actual

or potential threat to public health shall include instances in which there is a reasonable potential for the discharge to exceed the applicable criteria supporting the assigned recreational use designation or if a water body is known or likely to be used for either of the following:

(i) Primary or secondary contact recreation; or

(ii) any domestic water supply.

(8) Multiple uses. If a classified surface water or surface water segment is designated for more than one beneficial use pursuant to K.A.R. 28-16-28d(c), the water quality of the surface water or surface water segment shall comply with the most stringent of the applicable water quality criteria.

(d) Tables.

Table 1a. Numeric criteria.

PARAMETER	USE CATEGORY					
	AQUATIC LIFE		AGRICULTURE	PUBLIC HEALTH		
	ACUTE	CHRONIC	LIVESTOCK	IRRIGATION	PROCUREMENT	WATER SUPPLY
RADIONUCLIDES (pCi/L)						
gross beta radioactivity	a	a	a	a	a	50
gross alpha particles including radium-226, but not radon or uranium	a	a	a	a	a	15
radium 226 and 228 combined	a	a	a	a	a	5
strontium 90	a	a	a	a	a	8
tritium	a	a	a	a	a	20,000

METALS (F µg/L)

antimony, total	88	30	a	a	4,300	6
arsenic, total	340	50	200	100	20.5	b
arsenic (III)	360	50	a	a	b	b
arsenic (V)	850	48	a	a	a	a
barium	a	a	a	a	a	2,000
beryllium, total	130	5.3	a	100	0.13	4
boron, total	a	a	5,000	750	a	a
cadmium, total	table 1b	table 1b	20	10	170	5
chromium, total	a	40	1,000	100	a	100
chromium (III)	table 1b	table 1b	a	a	3,433,000	50
chromium (VI)	15	10	a	a	3,400	50
copper, total	table 1b	table 1b	500	200	a	1,300
lead, total	table 1b	table 1b	100	5,000	a	15
mercury, total	2.1	0.012	10	a	0.146	b
nickel, total	table 1b	table 1b	500	200	100	100
selenium, total	20	5	50	20	6,800	50
selenium (V)	11.2	a	a	a	a	a
silver, total	table 1b	a	a	a	a	50
thallium, total	1,400	40	a	a	b	2
zinc, total	table 1b	table 1b	25,000	2,000	a	a

OTHER INORGANIC  
SUBSTANCES (F µg/L)

ammonia	table 1c	table 1c	a	a	a	a
asbestos (F µfibers/L)	a	a	a	a	a	7,000,000
chloride	860,000	352,000	a	a	a	250,000
chlorine, total residual	19	11	a	a	a	a
cyanide (free)	22	5.2	a	a	220,000	200
fluoride	a	a	2,000	1,000	a	2,000
nitrate (as N)	a	a	a	a	a	10,000
nitrite + nitrate (as N)	a	a	100,000	a	a	10,000

phosphorus, elemental (white)	a	0.1	a	a	a	a
sulfate	a	a	1,000,000	a	a	250,000

ORGANIC SUBSTANCES (F µg/L)

Benzenes

aminobenzene (aniline)	14	6.7	a	a	a	a
benzene	5,300	a	a	a	40	b
chlorobenzene	250	50	a	a	21,000	100
dichlorobenzenes, total	1,120	763	a	a	2,600	a
o-dichlorobenzene	1,120	763	a	a	2,600	600
m-dichlorobenzene	1,120	763	a	a	2,600	b
p-dichlorobenzene	a	a	a	a	2,600	75
other chlorinated benzenes, total	250	50	a	a	a	a
1,2,4-trichlorobenzene	250	a	a	a	a	70
1,2,4,5-tetrachlorobenzene	250	50	a	a	48	a
pentachlorobenzene	250	50	a	a	85	a
hexachlorobenzene	6.0	3.7	a	a	0.00074	b
ethylbenzene	32,000	a	a	a	28,718	700
nitrobenzene	27,000	a	a	a	1,900	b
pentachloronitrobenzene	250	50	a	a	a	a
vinylbenzene (styrene)	a	a	a	a	a	100
Ethers	238,000	a	a	a	a	a
chloroalkyl ethers, total						
bis(2-chloroethyl)ether	238,000	a	a	a	1.36	b
bis(2-chloroisopropyl)ether	238,000	a	a	a	0.00184	b
bis(chloromethyl)ether	238,000	a	a	a	0.00184	a
2-chloroethyl vinyl ether	360	120	a	a	a	a
halogenated ethers, total	360	122	a	a	a	a
chloromethyl methyl ether	238,000	a	a	a	0.00184	a
4,4'-dibromodiphenyl ether	360	120	a	a	a	a
hexabromodiphenyl ether	360	120	a	a	a	a
nonabromodiphenyl ether	360	120	a	a	a	a

pentabromodiphenyl ether	360	120	a	a	a	a
tetrabromodiphenyl ether	360	120	a	a	a	a
tribromodiphenyl ether	360	120	a	a	a	a
Halogenated Hydrocarbons	18,000	2,000	a	a	b	b
chlorinated ethanes						
1,2-dichloroethane						
1,1,1-trichloroethane	18,000	a	a	a	173,077	200
1,1,2-trichloroethane	18,000	9,400	a	a	41.8	b
tetrachloroethanes, total	9,320	a	a	a	a	a
1,1,1,2-tetrachloroethane	9,320	a	a	a	a	a
1,1,2,2-tetrachloroethane	9,320	2,400	a	a	10.7	b
pentachloroethane	7,240	1,100	a	a	a	a
hexachloroethane	980	540	a	a	8.74	b
chlorinated ethylenes, total	11,600	a	a	a	1.85	a
1,1-dichloroethylene	11,600	a	a	a	1.85	b
cis-1,2-dichloroethylene	11,600	a	a	a	1.85	70
trans-1,2-dichloroethylene	11,600	a	a	a	140,000	100
trichloroethylene	45,000	21,900	a	a	80.7	b
tetrachloroethylene	5,280	840	a	a	8.85	b
chlorinated propanes/propenes	23,000	5,700	9.0	a	39	5
1,2-dichloropropane						
1,3-dichloropropene	6,600	244	a	a	14.1	b
Other Halogenated Hydrocarbons	11,000	a	a	a	15.7	100
halogenated methanes, total						
bromomethane	11,000	a	a	a	15.7	b
1,2-dibromoethane	a	a	a	a	a	0.05
tribromomethane (bromoform)	11,000	a	a	a	15.7	b
bis(2-chloroethoxy) methane	11,000	a	a	a	15.7	a
bromodichloromethane	11,000	a	a	a	15.7	b
bromochloromethane	11,000	a	a	a	15.7	a
bromotrichloromethane	11,000	a	a	a	15.7	a
dibromochloromethane	11,000	a	a	a	15.7	b

dibromochloropropane	a	a	a	a	15.7	0.2
dibromodichloromethane	11,000	a	a	a	15.7	a
dichlorodifluoromethane	11,000	a	a	a	15.7	a
dichloromethane (methylene chloride)	11,000	a	a	a	1,600	4.7
trichloromethane (chloroform)	28,900	1,240	a	a	15.7	b
tribromochloromethane	11,000	a	a	a	15.7	a
trichlorofluoromethane	11,000	a	a	a	15.7	a
tetrachloromethane (carbon tetrachloride)	35,200	a	a	a	b	b
di(2-ethylhexyl)adipate	a	a	a	a	a	500
hexachlorobutadiene	90	9.3	a	a	50	b
hexachlorocyclopentadiene	7	5.2	a	a	206	50
vinyl chloride	a	a	a	a	525	2
Miscellaneous Organics dioxin (2,3,7,8 TCDD)	0.01	0.00001	a	a	0.00000001	b
isosphorone	117,000	a	a	a	b	b
polychlorinated biphenyls, total	2	0.014	a	a	0.0000079	b
tributyltin oxide	0.149	0.026	a	a	a	a
Nitrogen Compounds nitrosamines, total	5,850	a	a	a	1.24	a
N-nitrosodibutylamine	5,850	a	a	a	0.587	a
N-nitrosodiethanolamine	5,850	a	a	a	1.24	a
N-nitrosodiethylamine	5,850	a	a	a	1.24	a
N-nitrosodimethylamine	5,850	a	a	a	1.6	b
N-nitrosodiphenylamine	5,850	a	a	a	16.0	b
N-nitrosodi-n-propylamine	a	a	a	a	1.24	a
N-nitrosopyrrolidine	5,850	a	a	a	91.9	a
acrylonitrile	7,550	2,600	a	a	0.65	b
benzidine	2,500	a	a	a	0.000535	b
3,3'-dichlorobenzidine	a	a	a	a	0.02	b
1,2-diphenyl hydrazine	270	a	a	a	0.54	b
Polynuclear Aromatic Hydrocarbons, a		a	a	a	0.0311	0.2

total						
acenaphthene	1,700	520	a	a	a	1200
acenaphthylene	a	a	a	a	0.0311	a
anthracene	a	a	a	a	0.0311	b
benzo(a)anthracene	a	a	a	a	0.0311	b
benzo(a)pyrene	a	a	a	a	0.0311	b
benzo(b)fluoranthene	a	a	a	a	0.0311	b
benzo(g,h,i)perylene	a	a	a	a	0.0311	a
benzo(k)fluoranthene	a	a	a	a	0.0311	b
chrysene	a	a	a	a	0.0311	b
dibenzo(a,h)anthracene	a	a	a	a	0.0311	b
fluoranthene	3,980	a	a	a	b	b
fluorene	a	a	a	a	0.0311	b
ideno(1,2,3-cd)pyrene	a	a	a	a	0.0311	b
naphthalene	2,300	620	a	a	a	a
phenanthrene	30	6.3	a	a	0.0311	a
pyrene	a	a	a	a	0.0311	b
Phthalate Esters	940	3	a	a	a	a
phthalates, total						
butylbenzyl phthalate	a	a	a	a	5,200	100
di(2-ethylhexyl)phthalate	400	360	a	a	b	b
dibutyl phthalate	940	3	a	a	b	b
diethyl phthalate	a	a	a	a	b	5
dimethyl phthalate	940	3	a	a	2,900,000	b
Phenolic Compounds	10,200	2,560	a	a	4,600,000	b
phenol						
2,4-dimethyl phenol	1,300	530	a	a	2,300	540
chlorinated phenols	4,380	2,000	a	a	400	120
2-chlorophenol						
3-chlorophenol	a	a	a	a	29,000	a
2,4-dichlorophenol	2,020	365	a	a	b	b
2,4,5-trichlorophenol	100	63	a	a	a	a
2,4,6-trichlorophenol	a	970	a	a	3.6	b

pentachlorophenol	table 1b	table 1b	a	a	8.2	b
3-methyl-4-chlorophenol	30	a	a	a	a	a
nitrophenols, total	230	150	a	a	a	a
2,4-dinitrophenol	a	a	a	a	765	b
4,6-dinitro-o-cresol	a	a	a	a	765	b
Toluenes	17,500	a	a	a	b	1,000
toluene						
dinitrotoluenes, total	330	230	a	a	9.1	a
2,4-dinitrotoluene	330	230	a	a	9.1	b
xylene	a	a	a	a	a	10,000
PESTICIDES (F µg/L)						
acrolein	68	21	a	a	780	320
acrylamide	a	a	a	a	a	0.01
alachlor (lasso)	760	76	100	a	a	2
aldicarb	a	a	a	a	a	3
aldicarb sulfone	a	a	a	a	a	2
aldicarb sulfoxide	a	a	a	a	a	3
aldrin	3	0.001	1	a	0.000079	b
atrazine (aatrex)	170	3	a	a	a	3
bromoxynil (MCPA)	a	a	20	a	a	a
carbaryl (sevin)	a	0.02	100	a	a	a
carbofuran (furadan)	a	a	100	a	a	40
chlordane	2.4	0.0043	3	a	0.00048	b
chlorpyrifos	0.083	0.041	100	a	a	a
2,4-D	a	a	a	a	a	70
dacthal (DCPA)	a	14,300	a	a	a	a
dalapon	a	110	a	a	a	200
diazinon (spectracide)	a	0.08	100	a	a	a
DDT and Metabolites	1,050	a	a	a	0.00059	b
4,4'-DDE (p,p'-DDE)						
4,4'-DDD (p,p'-DDD)	a	a	a	a	0.00084	b
DDT, total	1.1	0.001	50	a	0.000024	b

dieldrin	1.0	0.0019	1	a	0.000076	b
dinoseb (DNBP)	a	a	a	a	a	7
diquat	a	a	a	a	a	20
disulfoton (disyston)	a	a	100	a	a	a
endosulfan, total	0.22	0.056	a	a	159	b
alpha-endosulfan	0.22	0.056	a	a	240	110
beta-endosulfan	0.22	0.056	a	a	240	110
endosulfan sulfate	a	a	a	a	b	b
endothall	a	a	a	a	a	100
endrin	0.18	0.0023	0.5	a	0.81	0.76
endrin aldehyde	a	a	a	a	0.81	b
epichlorohydrin	a	a	a	a	a	4
ethylene dibromide	a	a	a	a	a	0.05
fenchlorfos (ronnel)	a	a	100	a	a	a
glyphosate (roundup)	a	a	a	a	a	700
guthion	a	0.010	100	a	a	a
heptachlor	0.52	0.0038	0.1	a	0.00021	b
heptachlor epoxide	0.52	0.0038	0.1	a	b	b
hexachlorocyclohexane	100	a	a	a	a	a
alpha-HCH	100	a	a	a	0.0031	b
beta-HCH	100	a	a	a	b	b
delta-HCH	100	a	a	a	a	a
gamma-HCH (lindane)	2	0.08	5	a	0.0625	b
technical-HCH	a	a	a	a	0.0414	a
malathion	a	0.10	100	a	a	a
methoxychlor	a	0.03	1,000	a	a	40
methyl parathion	a	a	100	a	a	a
metribuzin (sencor)	a	100	a	a	a	a
mirex	a	0.001	a	a	0.000097	a
oxamyl (vydate)	a	a	a	a	a	200
parathion	0.065	0.013	100	a	a	a
picloram (tordon)	a	a	a	a	a	500

propachlor (ramrod)	a	8	a	a	a	a
simazine (princep)	a	a	10	a	a	4
toxaphene	0.73	0.0002	5	a	0.00073	b
2,4,5-T	a	a	2	a	a	a
2,4,5-TP (silvex)	a	a	a	a	a	50

a - criterion not available

b - US EPA has promulgated criterion for Kansas under the Code of Federal Regulations, Title 40, Part 131.36

Table 1b. Formulae for calculation of hardness-dependent aquatic life support criteria for chromium III and total cadmium, total copper, total lead, nickel, total silver and total zinc and pH-dependent aquatic life support criteria for pentachlorophenol. A WER value of 1.0 is applied in the hardness-dependent equations for total metals unless a site-specific WER has been determined and adopted by the department in accordance with K.A.R. 28-16-28e(a) and K.A.R. 28-16-28f(f). Hardness values in metal formulae are entered in units of mg/L as CaCO<sub>3</sub>. Pentachlorophenol formulae apply only over the pH range 6.5-8.5.

CADMIUM (ug/L):

acute criterion = WER [EXP[(1.1280\*(LN(hardness)))-3.6867]]  
chronic criterion = WER [EXP[(0.7852\*(LN(hardness)))-2.715]]

CHROMIUM III (ug/L):

acute criterion = WER [EXP[(0.819\*(LN(hardness))) + 3.7256]]  
chronic criterion = WER [EXP[(0.819\*(LN(hardness))) + 0.6848]]

COPPER (ug/L):

acute criterion = WER [EXP[(0.9422\*(LN(hardness)))-1.700]]  
chronic criterion = WER [EXP[(0.8545\*(LN(hardness)))-1.702]]

LEAD (ug/L):

acute criterion = WER [EXP[(1.273\*(LN(hardness)))-1.460]]  
chronic criterion = WER [EXP[(1.273\*(LN(hardness)))-4.705]]

NICKEL (ug/L):

acute criterion = WER [EXP[(0.846\*(LN(hardness))) + 2.255]]  
 chronic criterion = WER [EXP[(0.846\*(LN(hardness))) + 0.0584]]

PENTACHLOROPHENOL (ug/L):  
 acute criterion = EXP[(1.005\*pH)-4.830]  
 chronic criterion = EXP[(1.005\*pH)-5.290]

SILVER (ug/L):  
 acute criterion = WER[EXP[(1.72\*(LN(hardness)))-6.52]]

ZINC (ug/L):  
 acute criterion = WER [EXP[(0.8473\*(LN(hardness))) + 0.884 ]]  
 chronic criterion = WER [EXP[(0.8473\*(LN(hardness))) + 0.884]]

Table 1c. pH-dependent acute aquatic life support criteria for total ammonia (total ammonia as N, mg/L).

<b>Acute Aquatic Life Criteria for Ammonia, mg/L</b>	
<b>pH</b>	<b>Criteria</b>
6.5	48.8
6.6	46.8
6.7	44.6
6.8	42.0
6.9	39.1
7.0	36.1
7.1	32.8
7.2	29.5
7.3	26.2
7.4	23.0
7.5	19.9
7.6	17.0
7.7	14.4
7.8	12.1
7.9	10.1
8.0	8.40
8.1	6.95

8.2	5.72
8.3	4.71
8.4	3.88
8.5	3.20
8.6	2.65
8.7	2.20
8.8	1.84
8.9	1.56
9.0	1.32

Table 1d. pH- and temperature-dependent chronic aquatic life criteria for total ammonia (total ammonia as N, mg/L) with early life stages of fish present.

**Chronic Aquatic Life Criteria for Ammonia,  
Early Life Stages Present, mg/L**

**pH**

**Temperature, E° C**

	<b>0</b>	<b>14</b>	<b>16</b>	<b>18</b>	<b>20</b>	<b>22</b>	<b>24</b>	<b>26</b>	<b>28</b>	<b>30</b>
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	9.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47

7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Table 1e. pH- and temperature-dependent chronic aquatic life criteria for total ammonia (total ammonia as N, mg/L) with early life stages of fish absent.

**Chronic Aquatic Life Criteria for Ammonia,  
Early Life Stages Absent\*, mg/L**

pH	Temperature, E° C							
	0-7	8	9	10	11	12	13	14**
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57

7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89
7.5	1.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684
8.9	0.917	0.860	0.806	0.456	0.709	0.664	0.623	0.584
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503

\* Early life stage absent criteria will apply to all Kansas surface waters during the months November through February except in surface water segments listed in Table 1f. The application of early life stage absent criteria outside of the months November through February will require a segment-specific examination of the surface water for the presence of early life stages of fish.

\*\* At 15 E° C and above, the criterion for early life stages absent is equivalent to the criterion for early life stages present.

Table 1f. Surface Water Segments where early life stages absent chronic aquatic life criteria are not applicable.

Surface Water	Basin	Subbasin	Hydrologic Unit Code	Segment Number
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Kansas River	Kansas Lower Republican	Lower Kansas	1027010 1 4	
Kansas River	Kansas Lower Republican	Lower Kansas	1027010 2 4	
Kansas River	Kansas Lower Republican	Lower Kansas	1027010 3 4	
Kansas River	Kansas Lower Republican	Lower Kansas	1027010 4 4	
Kansas River	Kansas Lower Republican	Lower Kansas	1027010 5 4	
Kansas River	Kansas Lower Republican	Lower Kansas	1027010 18 4	
Kansas River	Kansas Lower Republican	Lower Kansas	1027010 19 4	
Kansas River	Kansas Lower Republican	Lower Kansas	1027010 21 4	From Bowersock dam east to segment 19
Missouri River	Missouri	Tarkio-Wolf	1024000 1 5	
Missouri River	Missouri	Tarkio-Wolf	1024000 2 5	
Missouri River	Missouri	Tarkio-Wolf	1024000 19 5	
Missouri River	Missouri	Tarkio-Wolf	1024000 20 5	
Missouri River	Missouri	Tarkio-Wolf	1024000 21 5	
Missouri River	Missouri	Independence-Sugar	1024001 1 1	
Missouri River	Missouri	Independence-Sugar	1024001 2 1	
Missouri River	Missouri	Independence-Sugar	1024001 4 1	
Missouri River	Missouri	Independence-Sugar	1024011 5 5	
Missouri River	Missouri	Independence-Sugar	1024001 7 1	

Missouri River Missouri	Independence- Sugar	1024001 9 1
Missouri River Missouri	Independence- Sugar	1024001 11 1
Missouri River Missouri	Independence- Sugar	1024001 13 1
Missouri River Missouri	Independence- Sugar	1024001 15 1
Missouri River Missouri	Independence- Sugar	1024001 19 1

(Authorized by K.S.A. 1999 Supp. 65-171d and K.S.A. 65-171m; implementing K.S.A. 1999 Supp. 65-165 and 65-171d, and K.S.A. 65-171m; effective May 1, 1986; amended, T-87-8, May 1, 1986; amended May 1, 1987; amended Aug. 29, 1994; amended July 30, 1999; amended Nov. 3, 2000.)

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Secretary of Health

and Environment