401 KAR 10:031. Surface water standards.

RELATES TO: KRS 146.200 through 146.360, 146.410 through 146.535, 146.550 through 146.570, 146.600 through 146.619, 146.990, 224.1-010, 224.1-400, 224.16-050, 224.16-070, 224.70-100 through 224.70-140, 224.71-100 through 224.71-145, 224.73-100 through 224.73-120

STATUTORY AUTHORITY: KRS 146.220, 146.241, 146.270, 146.410, 146.450, 146.460, 146.465, 224.10-100, 224.16-050, 224.16-060, 224.70-100, 224.70-110, 40 C.F.R. Part 131, 16 U.S.C. 1271 through 1287, 1531 through 1544, 33 U.S.C. 1311, 1313, 1314, 1341

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the cabinet to develop and conduct a comprehensive program for the management of water resources and to provide for the prevention, abatement, and control of water pollution. This administrative regulation and 401 KAR 10:001, 10:026, 10:029, and 10:030 establish procedures to protect the surface waters of the Commonwealth, and thus protect water resources. This administrative regulation establishes water quality standards that consist of designated legitimate uses of the surface waters of the Commonwealth and the associated water quality criteria necessary to protect those uses. These water quality criteria are minimum requirements that apply to all surface waters in the Commonwealth of Kentucky in order to maintain and protect them for designated uses. These water quality standards are subject to periodic review and revision in accordance with the Clean Water Act, 33 U.S.C. 1251-1387, 40 C.F.R. 131, and KRS Chapter 224.

Section 1. Nutrients Criterion. Nutrients shall not be elevated in a surface water to a level that results in a eutrophication problem.

Section 2. Minimum Criteria Applicable to All Surface Waters. (1) The minimum water quality criteria established in this administrative regulation shall be applicable to all surface waters including mixing zones, with the exception that toxicity to aquatic life in mixing zones shall be subject to the provisions of 401 KAR 10:029, Section 4. Surface waters shall not be aesthetically or otherwise degraded by substances that:

(a) Settle to form objectionable deposits;

(b) Float as debris, scum, oil, or other matter to form a nuisance;

(c) Produce objectionable color, odor, taste, or turbidity;

(d) Injure or are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish, and other aquatic life;

(e) Produce undesirable aquatic life or result in the dominance of nuisance species; or

(f) Cause fish flesh tainting.

(2) The concentration of phenol shall not exceed 300 μg/L as an instream value.

(3) The water quality criteria for the protection of human health related to fish consumption in Table 1 of Section 6 of this administrative regulation shall apply to all surface water at the edge of the assigned mixing zones except for those points where water is withdrawn for domestic water supply use.

(a) The criteria are established to protect human health regarding the consumption of fish tissue and shall not be exceeded.

(b) For those substances associated with a cancer risk, an acceptable risk level of not more than one (1) additional cancer case in a population of 1,000,000 people, or 1×10^{-6} shall be utilized to establish the allowable concentration.

Section 3. Use Designations and Associated Criteria. (1) Surface waters may be designated as having one (1) or more legitimate uses established in 401 KAR 10:026 and associated criteria protective of those uses. Nothing in this administrative regulation shall be construed to prohibit or impair the legitimate beneficial uses of these waters. The criteria in Sections 2, 4, 6, and 7 of this administrative regulation represent minimum conditions necessary to:

(a) Protect surface waters for the indicated designated use; and

(b) Protect human health regarding fish consumption.

(2) On occasion, surface water quality may be outside of the limits established to protect designated uses because of natural conditions. If this occurs during periods when stream flows are below the flow that is used by the cabinet to establish effluent limitations for wastewater treatment facilities, a discharger shall not be considered a contributor to instream violations of water quality standards, if treatment results in compliance with permit requirements.

(3) Stream flows for water quality-based permits. The following stream flows shall be utilized if deriving KPDES permit limitations to protect surface waters for the listed uses and purposes:

(a) Aquatic life protection shall be $7Q_{10}$;

(b) Water-based recreation protection shall be $7Q_{10}$;

(c) Domestic water supply protection shall be determined at points of withdrawal as:

1. The harmonic mean for cancer-linked substances; and

2. $7Q_{10}$ for noncancer-linked substances;

(d) Human health protection regarding fish consumption and for changes in radionuclides shall be the harmonic mean; and

(e) Protection of aesthetics shall be $7Q_{10}$.

Section 4. Aquatic Life. (1) Warm water aquatic habitat. The following parameters and associated criteria shall apply for the protection of productive warm water aquatic communities, fowl, animal wildlife, arboreous growth, agricultural, and industrial uses:

(a) Natural alkalinity as $CaCO_3$ shall not be reduced by more than twenty-five (25) percent.

1. If natural alkalinity is below twenty (20) mg/L $CaCO_3$, there shall not be a reduction below the natural level.

2. Alkalinity shall not be reduced or increased to a degree that may adversely affect the aquatic community;

(b) pH shall not be less than six and zero-tenths (6.0) nor more than nine and zero-tenths (9.0) and shall not fluctuate more than one and zero-tenths (1.0) pH unit over a period of twenty-four (24) hours;

(c) Flow shall not be altered to a degree that will adversely affect the aquatic community;

(d) Temperature shall not exceed thirty-one and seven-tenths (31.7) degrees Celsius (eighty-nine (89) degrees Fahrenheit).

1. The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.

2. The cabinet may determine allowable surface water temperatures on a site-specific basis utilizing available data that shall be based on the effects of temperature on the aquatic biota that utilize specific surface waters of the commonwealth and that may be affected by person-induced temperature changes.

3. Effects on downstream uses shall also be considered in determining site-specific temperatures.

4. A successful demonstration concerning thermal discharge limits carried out pursuant to Section 316(a) of the Clean Water Act, 33 U.S.C. 1326, shall constitute compliance with the temperature requirements of this subsection. A successful demonstration assures the protec-

tion and propagation of a balanced indigenous population of shellfish, fish, and wildlife in or on the water into which the discharge is made;

(e) Dissolved oxygen.

1.a. Dissolved oxygen shall be maintained at a minimum concentration of five and zero-tenths (5.0) mg/L as a twenty-four (24) hour average in water with WAH use.

b. The instantaneous minimum shall not be less than four and zero-tenths (4.0) mg/L in water with WAH use.

2. The dissolved oxygen concentration shall be measured at mid-depth in waters having a total depth of ten (10) feet or less and at representative depths in other waters;

(f) Total dissolved solids or specific conductance. Total dissolved solids or specific conductance shall not be changed to the extent that the indigenous aquatic community is adversely affected;

(g) Total suspended solids. Total suspended solids shall not be changed to the extent that the indigenous aquatic community is adversely affected;

(h) Settleable solids. The addition of settleable solids that may alter the stream bottom so as to adversely affect productive aquatic communities shall be prohibited;

(i) Ammonia. The concentration of the un-ionized form shall not be greater than 0.05 mg/L at any time instream after mixing. Un-ionized ammonia shall be determined from values for total ammonia-N, in mg/L, pH and temperature, by means of the following equation:

$Y = 1.2 \text{ (Total ammonia-N)}/(1 + 10^{pKa-pH})$

$pk_a = 0.0902 + (2730/(273.2 + T_c))$

Where:

T_c = temperature, degrees Celsius.

Y = un-ionized ammonia (mg/L);

(j) Toxics.

1. The allowable instream concentration of toxic substances, or whole effluents containing toxic substances, which are noncumulative or non-persistent with a half-life of less than ninety-six (96) hours, shall not exceed:

a. One-tenth (0.1) of the ninety-six (96) hour median lethal concentration (LC_{50}) of representative indigenous or indicator aquatic organisms; or

b. A chronic toxicity unit of 1.00 utilizing the twenty-five (25) percent inhibition concentration, or IC_{25}.

2. The allowable instream concentration of toxic substances, or whole effluents containing toxic substances, which are bioaccumulative or persistent, including pesticides, if not specified elsewhere in this section, shall not exceed:

a. 0.01 of the ninety-six (96) hour median lethal concentration (LC_{50}) of representative indigenous or indicator aquatic organisms; or

b. A chronic toxicity unit of 1.00 utilizing the IC_{25}.

3. In the absence of acute criteria for pollutants listed in Table 1 of Section 6 of this administrative regulation, for other substances known to be toxic but not listed in this administrative regulation, or for whole effluents that are acutely toxic, the allowable instream concentration shall not exceed the LC_1 or one-third (1/3) LC_{50} concentration derived from toxicity tests on representative indigenous or indicator aquatic organisms or exceed three-tenths (0.3) acute toxicity units.

4. If specific application factors have been determined for a toxic substance or whole effluent such as an acute to chronic ratio or water effect ratio, the specific application factors may be used instead of the one-tenth (0.1) and 0.01 factors listed in this subsection upon demonstration by the applicant that the application factors are scientifically defensible.

5. Allowable instream concentrations for specific pollutants for the protection of warm water aquatic habitat are listed in Table 1 of Section 6 of this administrative regulation. These concentrations are based on protecting aquatic life from acute and chronic toxicity and shall not be exceeded; and

(k) Total residual chlorine. Instream concentrations for total residual chlorine shall not exceed an acute criteria value of nineteen (19) μg/L or a chronic criteria value of eleven (11) μg/L.

(2) Cold water aquatic habitat. The following parameters and criteria are for the protection of productive cold water aquatic communities and streams that support trout populations, whether self-sustaining or reproducing, on a year-round basis. The criteria adopted for the protection of warm water aquatic life also apply to the protection of cold water habitats with the following additions:

(a) Dissolved oxygen.

1. A minimum concentration of six and zero-tenths (6.0) mg/L as a twenty-four (24) hour average and five and zero-tenths (5.0) mg/L as an instantaneous minimum shall be maintained.

2. In lakes and reservoirs that support trout, the concentration of dissolved oxygen in waters below the epilimnion shall be kept consistent with natural water quality; and

(b) Temperature. Water temperature shall not be increased through human activities above the natural seasonal temperatures.

Section 5. Domestic Water Supply Use. Maximum allowable in-stream concentrations for specific substances, to be applicable at the point of withdrawal, as established in 401 KAR 10:026, Section 5(2)(b), Table B, for use for domestic water supply from surface water sources are specified in Table 1 of Section 6 of this administrative regulation and shall not be exceeded.

Section 6. Pollutants. (1) Allowable instream concentrations of pollutants are listed as water column values in Table 1 of this section unless otherwise indicated.

Table 1

Pollutant	CAS[1] Number	Water Quality Criteria μg/L[2]			
		Human Health:		Warm Water Aquatic Habitat[3]:	
		DWS[4]	Fish[5]	Acute[6]	Chronic[7]
Acenaphthene	83-32-9	670	990	-	-
Acrolein	107-02-8	190	6	3	3
Acrylonitrile	107-13-1	0.051	0.25	-	-
Aldrin	309-00-2	0.000049	0.000050	3.0	-
alpha-BHC	319-84-6	0.0026	0.0049	-	-
alpha-Endosulfan	959-98-8	62	89	0.22	0.056
Anthracene	120-12-7	8,300	40,000	-	-
Antimony	744-03-60	5.6	640	-	-
Arsenic	7440-38-2	10.0	-	340	150
Asbestos	1332-21-4	7 million fibers/L	-	-	-
Barium	7440-39-3	1,000	-	-	-
Benzene	71-43-2	2.2	51	-	-

Benzidine	92-87-5	0.000086	0.00020	-	-
Benzo(a)anthracene	56-55-3	0.0038	0.018	-	-
Benzo(a)pyrene	50-32-8	0.0038	0.018	-	-
Benzo(b)fluoranthene	205-99-2	0.0038	0.018	-	-
Benzo(k)fluoranthene	207-08-9	0.0038	0.018	-	-
Beryllium	7440-41-7	4	-	-	-
Beta-BHC	319-85-7	0.0091	0.017	-	-
Beta-Endosulfan	33213-65-9	62	89	0.22	0.056
bis(chloromethyl)ether	542-88-1	0.00010	0.00029	-	-
bis(2-chloroethyl)ether	111-44-4	0.030	0.53	-	-
bis(2-chloroisopropyl)ether	108-60-1	1,400	65,000	-	-
bis(2-ethylhexyl)phthalate	117-81-7	1.2	2.2	-	-
Bromoform	75-25-2	4.3	140	-	-
Butylbenzyl phthalate	85-68-7	1,500	1,900	-	-
Cadmium	7440-43-9	5	-	$e^{(0.9789(\ln Hard^*)-3.866)}$	$e^{(0.7977(\ln Hard^*)-3.909)}$
Carbaryl	63-25-2			2.1	2.1
Carbon tetrachloride	56-23-5	0.23	1.6	-	-
Chlordane	57-74-9	0.00080	0.00081	2.4	0.0043
Chloride	16887-00-6	250,000	-	1,200,000	600,000
Chlorobenzene	108-90-7	130	1600	-	-
Chlorodibromomethane	124-48-1	0.40	13	-	-
Chloroform	67-66-3	5.7	470	-	-
Chloropyrifos	2921-88-2	-	-	0.083	0.041
Chromium (total)	N/A	100	-	-	-
Chromium (III)	16065-83-1	-	-	$e^{(0.8190(\ln Hard^*)+3.7256)}$	$e^{(0.8190(\ln Hard^*)+0.6848)}$
Chromium (VI)	18540-29-0	-	-	16	11
Chrysene	218-01-9	0.0038	0.018	-	-
Color	N/A	75 Platinum Cobalt Units	-	-	-

Copper	7440-50-8	1,300	-	$e^{(0.9422(\ln Hard^*)-1.700)}$	$e^{(0.8545(\ln Hard^*)-1.702)}$
Cyanide, Free	57-12-5	140	140	22	5.2
Demeton	8065-48-3	-	-	-	0.1
Diazinon	333-41-5			0.17	0.17
Diben-zo(a,h)anthracene	53-70-3	0.0038	0.018	-	-
Dichlorobromo-methane	75-27-4	0.55	17	-	-
Dieldrin	60-57-1	0.000052	0.000054	0.24	0.056
Diethyl phthalate	84-66-2	17,000	44,000	-	-
Dimethyl phthalate	131-11-3	270,000	1,100,000	-	-
Di-n-butyl phthalate	84-74-2	2,000	4,500	-	-
Dinitrophenols	25550-58-7	69	5300	-	-
Endosulfan sulfate	1031-07-8	62	89	-	-
Endrin	72-20-8	0.059	0.060	0.086	0.036
Endrin aldehyde	7421-93-4	0.29	0.30	-	-
Ethylbenzene	100-41-4	530	2100	-	-
Fluoranthene	206-44-0	130	140	-	-
Fluorene	86-73-7	1,100	5,300	-	-
Fluoride	16984-48-8	4,000	-	-	-
Guthion	86-50-0	-	-	-	0.01
Heptachlor	76-44-8	0.000079	0.000079	0.52	0.0038
Heptachlor epoxide	1024-57-3	0.000039	0.000039	0.52	0.0038
Hexachlorobenzene	118-74-1	0.00028	0.00029	-	-
Hexachlorobutadi-ene	87-68-3	0.44	18	-	-
Hexachlorocyclo-hexane-Technical	608-73-1	0.0123	0.0414	-	-
Hexachlorocyclo-pentadiene	77-47-4	40	1100	-	-
Hexachloroethane	67-72-1	1.4	3.3	-	-
Ideno(1,2,3-cd)pyrene	193-39-5	0.0038	0.018	-	-
Iron[8]	7439-89-6	300	-	4,000	1,000
Isophorone	78-59-1	35.0	960	-	-
Lead	7439-92-1	15	-	$e^{(1.273(\ln Hard^*)-1.460)}$	$e^{(1.273(\ln Hard^*)-4.705)}$
Lindane (gamma-BHC)	58-89-9	0.98	1.8	0.95	
Malathion	121-75-5	-	-	-	0.1
Mercury	7439-97-6	2.0	0.051	1.4	0.77
Methylmercury	22967-92-6		0.3 mg/Kg[9]		

Methoxychlor	74-43-5	100	-	-	0.03
Methyl Bromide	74-83-9	47	1,500	-	-
Methylene Chloride	75-09-2	4.6	590	-	-
Mirex	2385-85-5	-	-	-	0.001
Nickel	7440-02-0	610	4,600	$e^{(0.8460(\ln Hard^*)+2.255)}$	$e^{(0.8460(\ln Hard^*)+0.0584)}$
Nitrate (as N)	14797-55-8	10,000	-	-	-
Nitrobenzene	98-95-3	17	690	-	-
Nitrosamines, Other	N/A	0.0008	1.24	-	-
N-Nitrosodibutylamine	924-16-3	0.0063	0.22	-	-
N-Nitrosodiethylamine	55-18-5	0.0008	1.24	-	-
N-Nitrosodimethyla-mine	62-75-9	0.00069	3.0	-	-
N-Nitrosodi-n-Propylamine	621-64-7	0.0050	0.51	-	-
N-Nitrosodiphenyla-mine	86-30-6	3.3	6.0	-	-
N-Nitrosopyrrolidine	930-55-2	0.016	34	-	-
Nonylphenol	1044-05-1			28	6.6
Parathion	56-38-2	-	-	0.065	0.013
Pentachloroben-zene	608-93-5	1.4	1.5	-	-
Pentachlorophenol	87-65-5	0.27	3.0	$e^{(1.005(pH)-4.869)}$	$e^{(1.005(pH)-5.134)}$
Phenol[10]	108-95-2	21,000	860,000	-	-
Polychlorinated Bi-phenyls (PCBs)	N/A	0.000064	0.000064	-	0.014
Pyrene	129-00-0	830	4,000	-	-
Selenium	7782-49-2	170	4,200		5.0[11] 8.6[12,13] 11.3[13,14]
Silver	7440-22-4	-	-	$e^{(1.72(\ln Hard^*)-6.59)}$	-
Sulfate	14808-79-8	250,000	-	-	-
Hydrogen Sulfide, Undissociated	7783-06-4	-	-	-	2.0
Tetrachloroethylene	127-18-4	0.69	3.3	-	-
Thallium	7440-28-0	0.24	0.47	-	-
Toluene	108-88-3	1300	15,000	-	-
Total Dissolved Sol-ids	N/A	250,000	-	-	-
Toxaphene	8001-35-2	0.00028	0.00028	0.73	0.0002
Tributyltin (TBT)	688-73-3			0.46	0.072
Trichloroethylene	79-01-6	2.5	30	-	-

Vinyl Chloride	75-01-4	0.025	2.4	-	-
Zinc	7440-66-6	7,400	26,000	$e^{(0.8473(\ln Hard^*)+0.884)}$	$e^{(0.8473(\ln Hard^*)+0.884)}$
1,1-dichloroethylene	75-35-4	330	7100	-	-
1,1,1-trichloroethane	71-55-6	200	-	-	-
1,1,2-trichloroethane	79-00-5	0.59	16	-	-
1,1,2,2-tetrachloroethane	79-34-5	0.17	4.0	-	-
1,2-dichlorobenzene	95-50-1	420	1300	-	-
1,2-dichloroethane	107-06-2	0.38	37	-	-
1,2-dichloropropane	78-87-5	0.50	15	-	-
1,2-diphenylhydrazine	122-66-7	0.036	0.20	-	-
1,2-trans-dichloroethylene	156-60-5	140	10,000	-	-
1,2,4-trichlorobenzene	120-82-1	35	70	-	-
1,2,4,5-tetrachlorobenzene	95-94-3	0.97	1.1	-	-
1,3-dichlorobenzene	541-73-1	320	960	-	-
1,3-dichloropropene	542-75-6	0.34	21	-	-
1,4-dichlorobenzene	106-46-7	63	190	-	-
2-chloronaphthalene	91-58-7	1,000	1,600	-	-
2-chlorophenol	95-57-8	81	150	-	-
2-methyl-4,6-dinitrophenol	534-52-1	13	280	-	-
2,3,7,8-TCDD (Di-oxin)	1746-01-6	5.0 E - 9	5.1 E - 9	-	-
2,4-D	94-75-7	100	-	-	-
2,4-dichlorophenol	120-83-2	77	290	-	-
2,4-dimethylphenol	105-67-9	380	850	-	-
2,4-dinitrophenol	51-28-5	69	5,300	-	-
2,4-dinitrotoluene	121-14-2	0.11	3.4	-	-
2,4,5-TP (Silvex)	93-72-1	10	-	-	-
2,4,5-trichlorophenol	95-95-4	1,800	3,600	-	-
2,4,6-trichlorophenol	88-06-2	1.4	2.4	-	-
3,3'-dichlorobenzidine	91-94-1	0.021	0.028	-	-

4,4'-DDD	72-54-8	0.00031	0.00031	-	-
4,4'-DDE	72-55-9	0.00022	0.00022	-	-
4,4'-DDT	50-29-3	0.00022	0.00022	1.1	0.001

[1] CAS = Chemical Abstracts Service.

[2] Water quality criteria in μg/L unless reported in different units.

[3] Metal concentrations shall be total recoverable metals to be measured in an unfiltered sample, unless it can be demonstrated that a more appropriate analytical technique is available that provides a measurement of that portion of the metal present which causes toxicity to aquatic life. An applicant for a Clean Water Act Section 402 permit may request site-specific copper aquatic life criteria using the Copper Biotic Ligand Model established in Aquatic Life Ambient Freshwater Quality Criteria-Copper, EPA, February 2007.

[4] DWS = Domestic Water Supply Source.

[5] Fish = protecting human health regarding fish consumption.

[6] Acute criteria = protective of aquatic life based on one (1) hour exposure that does not exceed the criterion for a given pollutant.

[7] Chronic = protective of aquatic life based on ninety-six (96) hour exposure that does not exceed the criterion of a given pollutant more than once every three (3) years on the average.

[8] The chronic criterion for iron shall not exceed three and five tenths (3.5) mg/L (thirty-five hundred μg/L) if aquatic life has not been shown to be adversely affected.

[9] This value is the concentration in fish or shellfish tissue (wet weight).

[10] Section 2 of this administrative regulation also contains a criterion for phenol.

[11] If fish tissue data are available, fish tissue data shall take precedence over water column data.

[12] This value is the concentration in micrograms/g (dry weight) of whole fish tissue.

[13] A concentration of five and zero tenths (5.0) μg/L or greater selenium in the water column shall trigger further sampling and analysis of whole-body fish tissue or alternately of fish fillet.

[14] This value is the concentration in μg/g (dry weight) of skinless, boneless fish fillet, which may be analyzed instead of whole body tissue if predator or bottom-feeding fish exceed twelve (12) inches in length.

*Hard = Hardness as mg/L $CaCO_3$.

(2) The following additional criteria for radionuclides shall apply for Domestic Water Supply use:

(a) The gross total alpha particle activity, including radium-226 but excluding radon and uranium, shall not exceed fifteen (15) pCi/L;

(b) Combined radium-226 and radium-228 shall not exceed five (5) pCi/L. Specific determinations of radium-226 and radium-228 are not necessary if dissolved gross alpha particle activity does not exceed five (5) pCi/L;

(c) The concentration of total gross beta particle activity shall not exceed fifty (50) pCi/L;

(d) The concentration of tritium shall not exceed 20,000 pCi/l;

(e) The concentration of total Strontium-90 shall not exceed eight (8) pCi/L; and

(f) The concentration of uranium shall not exceed thirty (30) μg/l.

Section 7. Recreational Waters. (1) Primary contact recreation water. The following criteria shall apply to waters designated as primary contact recreation use during the primary contact recreation season of May 1 through October 31:

(a) Escherichia coli content shall not exceed 130 colonies per 100 ml as a geometric mean based on not less than five (5) samples taken during a thirty (30) day period. Content also shall not exceed 240 colonies per 100 ml in twenty (20) percent or more of all samples taken during

a thirty (30) day period for for Escherichia coli. Fecal coliform criteria listed in subsection (2)(a) of this section shall apply during the remainder of the year;

(b) pH shall be between six and zero-tenths (6.0) to nine and zero-tenths (9.0) and shall not change more than one and zero-tenths (1.0) pH unit within this range over a period of twenty-four (24) hours; and

(c)1. PCR criteria may be suspended in CSO receiving waters during CSO events for a duration determined by the cabinet-approved Long-Term Control Plan as established in 401 KAR 5:005 and the facility KPDES permit; if:

a. An exception to criteria is approved:

(i) In accordance with Section 10 or 11 of this administrative regulation; and

(ii) Consistent with 40 C.F.R. 131.14; or

b. A redesignation pursuant to a use attainability analysis has been approved:

(i) In accordance with 401 KAR 10:026, Sections 2 through 4; and

(ii) Consistent with 40 C.F.R. 131.10(g).

2. A table of CSO-impacted waters for which a suspension of the Primary Contact Recreation has been approved shall be located in 401 KAR 10:026.

(2) Secondary contact recreation water. The following criteria shall apply to waters designated for secondary contact recreation use during the entire year:

(a) Fecal coliform content shall not exceed 1,000 colonies per 100 ml as a thirty (30) day geometric mean based on not less than five (5) samples; nor exceed 2,000 colonies per 100 ml in twenty (20) percent or more of all samples taken during a thirty (30) day period;

(b) pH shall be between six and zero-tenths (6.0) to nine and zero-tenths (9.0) and shall not change more than one and zero-tenths (1.0) pH unit within this range over a period of twenty-four (24) hours;

(c)1. SCR criteria may be suspended in CSO receiving waters during CSO events for a duration determined by the cabinet-approved Long-Term Control Plan as established in 401 KAR 5:005 and the facility KPDES permit; if:

a. An exception to criteria is approved:

(i) In accordance with Section 10 or 11 of this administrative regulation; and

(ii) Consistent with 40 C.F.R. 131.14; or

b. A redesignation pursuant to a use attainability analysis has been approved:

(i) In accordance with 401 KAR 10:026, Sections 2 through 4; and

(ii) Consistent with 40 C.F.R. 131.10(g).

2. A table of CSO-impacted waters for which a suspension of the Secondary Contact Recreation criteria has been approved shall be located in 401 KAR 10:026.

Section 8. Outstanding State Resource Waters. This designation category includes certain unique waters of the commonwealth. (1) Water for inclusion.

(a) Automatic inclusion. The following surface waters shall automatically be included in this category:

1. Waters designated pursuant to the Kentucky Wild Rivers Act, KRS 146.200 through 146.360;

2. Waters designated pursuant to the Federal Wild and Scenic Rivers Act, 16 U.S.C. 1271-1287; and

3. Waters that support federally recognized endangered or threatened species pursuant to the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531-1544.

(b) Permissible consideration. Other surface waters shall be considered for inclusion in this category if:

1. The surface waters flow through or are bounded by state or federal forest land, or are of exceptional aesthetic or ecological value or are within the boundaries of national, state, or local government parks, or are a part of a unique geological, natural, or historical area recognized by state or federal designation; or

2. The surface water is a component part of an undisturbed or relatively undisturbed watershed that can provide basic scientific data and possess outstanding water quality characteristics, or fulfill two (2) of the following conditions:

a. Support a diverse or unique native aquatic flora or fauna;

b. Possess physical or chemical characteristics that provide an unusual and uncommon aquatic habitat; or

c. Provide a unique aquatic environment within a physiographic region.

(2) Outstanding state resource waters protection. The water quality criteria for protection of an OSRW shall be as established in paragraphs (a) through (d) of this section.

(a) At a minimum, the criteria of Section 2 and Table 1 of Section 6 of this administrative regulation and the appropriate criteria associated with the stream use designation assignments in 401 KAR 10:026, shall be applicable to these waters.

(b) Outstanding state resource waters that are listed as Exceptional Waters in 401 KAR 10:030, Section 1(2) shall have dissolved oxygen maintained at a minimum concentration of six and zero-tenths (6.0) mg/L as a twenty-four (24) hour average and an instantaneous minimum concentration of not less than five and zero-tenths (5.0) mg/L.

(c) 1. Existing water quality and habitat shall be maintained and protected in those waters designated as outstanding state resource waters that support federally threatened and endangered species of aquatic organisms, unless the cabinet determines that lowering water quality or a habitat modification will not have an adverse effect on the threatened or endangered species that the water supports.

2. If the basis of the Outstanding State Resource Water designation depends on or relates to instream water quality, the cabinet shall:

a. Review existing water quality criteria to determine if additional criteria or more stringent criteria are necessary to protect the water; and

b. Evaluate the need to develop additional data upon which to base the determination.

3. If the cabinet determines that more stringent instream water quality criteria are necessary to protect the basis of the Outstanding State Resource Water designation as established in paragraph 2 of this subsection, those additional protective criteria shall not be effective until the cabinet lists those criteria with the respective waterbody in 401 KAR 10:026..

(3) Determination of designation.

(a) A person may present a proposal to designate certain waters pursuant to this section. Documentation requirements in support of an outstanding state resource water proposal shall contain those elements outlined in 401 KAR 10:026, Section 3(3)(a) through (h).

(b)1. The cabinet shall review the proposal and supporting documentation to determine if the proposed waters qualify as outstanding state resource waters within the conditions established by this administrative regulation.

2. The cabinet shall document the determination to deny or to propose redesignation, and a copy of the decision shall be served upon the petitioner and other interested parties.

(c) After considering all of the pertinent data, a redesignation, if appropriate, shall be made pursuant to 401 KAR 10:026.

Section 9. Water Quality Criteria for the Main Stem of the Ohio River. (1) The water quality standards established in this Chapter provide for the protection of the designated uses of the

Ohio River with consideration of the uses and water quality criteria established in the Pollution Control Standards of the Ohio River Valley Water Sanitation Compact. The criteria established in this Section shall apply to the main stem of the Ohio River from its juncture with the Big Sandy River at River Mile 317.1 to its confluence with the Mississippi River, and shall not be exceeded.

(2) These waters shall be subject to all applicable provisions of 401 KAR 10:001, 10:026, 10:029, 10:030, and this administrative regulation, except in-stream concentrations of dissolved oxygen shall:

(a) Average at least five and zero-tenths (5.0) mg/L per calendar day; and

(b) Shall not be less than four and zero-tenths (4.0) mg/L except during the April 15 - June 15 spawning season when a minimum of five and one-tenth (5.1) mg/L shall be maintained.

Section 10. Exceptions to Criteria for Specific Surface Waters. (1) The cabinet may grant exceptions to the criteria contained in Sections 2, 4, 6, 7, 8, and 9 of this administrative regulation for specific surface water upon demonstration by an applicant that maintenance of applicable water quality criteria is not attainable or scientifically valid but the use designation is still appropriate.

(2) The analysis shall show that the water quality criteria cannot be reasonably achieved, either on a seasonal or year-round basis due to natural conditions or site-specific factors differing from the conditions used to derive criteria in Sections 2, 4, 6, 7, 8, and 9 of this administrative regulation.

(a) Site-specific criteria shall be developed by the applicant utilizing toxicity tests, indicator organisms, and application factors that shall be consistent with those outlined in Chapter 3 of Water Quality Standards Handbook, EPA, 2017.

(b) In addition, an applicant shall supply the documentation established in 401 KAR 10:026, Section 3 and 40 C.F.R. 131.14(b).

(c) The documentation required by subparagraph (b) shall be subject to the public notice and comment requirements established in 40 C.F.R. 130.20(b) and 131.14.

(3) An exception to criteria listed in Table 1 of Section 6 of this administrative regulation for the protection of human health from the consumption of fish tissue may be granted if it is demonstrated that natural, ephemeral, intermittent, or low flow conditions or water levels preclude the year-round support of a fishery, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges.

(4) Before granting an exception to water quality criteria, the cabinet shall ensure the maintenance of downstream water quality and that the variance shall not preclude the attainment of designated uses of downstream surface waters.

(5)(a) All exceptions to water quality criteria shall be subject to reevaluation at least every five (5) years.

(b) If reevaluation results are not submitted, the exception to criteria shall no longer be the applicable water quality standard for the purposes of this administrative regulation and the federal Clean Water Act.

(6) Exceptions to water quality criteria shall be adopted as an administrative regulation by listing them with the respective surface water in 401 KAR 10:026.

Section 11. Exceptions to Criteria for Individual Dischargers. (1) An exception to criteria may be granted to an individual discharger based on a demonstration by the discharger, that KPDES permit compliance with existing instream criteria cannot be attained because of factors specified in 401 KAR 10:026, Section 2(4)(a) through (f) and 40 C.F.R. 131.14(b)(1)(A)(1)

through (3).

(2) The demonstration shall include:

(a) An assessment of alternative pollution control strategies and biological assessments that indicated designated uses are being met; and

(b) The documentation established in 40 C.F.R. 131.14(b).

(3) Before granting an exception to water quality criteria, the cabinet shall ensure the maintenance of downstream water quality and that the variance shall not preclude the attainment of designated uses of downstream surface waters.

(4)(a) All exceptions shall be submitted to the cabinet for reevaluation at least every five (5) years.

(b) Upon review, the discharger shall demonstrate to the cabinet the effort the discharger made to reduce the pollutants in the discharge to levels that would achieve existing applicable water quality criteria.

(c) If reevaluation results are not submitted, the exception to criteria shall no longer be the applicable water quality standard for the purposes of this administrative regulation and the federal Clean Water Act.

(5) The highest level of effluent quality that can be economically and technologically achieved shall be ensured while the exception is in effect.

(6) Exceptions to criteria for individual discharges shall be subject to the public participation requirements as established in 40 C.F.R. 131.20(b).

Section 12. Compliance Schedules. (1) The cabinet may allow a compliance schedule to give a permittee time to comply with water quality based effluent limitations that derive from and comply with water quality standards.

(2) Compliance schedules shall be as established in 40 C.F.R. 122.47.

Section 13. Incorporation by Reference. (1) The following material is incorporated by reference:

(a) "Water Quality Standards Handbook-Chapter 3", EPA 2017, Publication No. EPA-823-B-17-001, U.S. Environmental Protection Agency, Office of Water, Washington, D.C.;

(b) "Interim Economic Guidance for Water Quality Standards Workbook", March 1995, Publication EPA-823-B-95-002, U.S. Environmental Protection Agency, Office of Water, Washington, D.C.; and

(c) "Aquatic Life Ambient Freshwater Quality Criteria-Copper", EPA, February 2007, Publication No. EPA 822-R-07-001, U.S. Environmental Protection Agency, Office of Water, Washington D.C.

(2) This material may be inspected, copied, or obtained, subject to applicable copyright law, at the Division of Water, 300 Sower Boulevard, Frankfort, Kentucky 40601, Monday through Friday, 8 a.m. to 4:30 p.m.

(3)(a) "Water Quality Standards Handbook-Chapter 3", EPA 2017, Publication EPA-823-B-17-001, U.S. Environmental Protection Agency, Office of Water can also be found at https://www.epa.gov/sites/production/files/2014-10/documents/handbook-chapter3.pdf.

(b) "Interim Economic Guidance for Water Quality Standards Workbook", March 1995, Publication EPA-823-B-95-002, U.S. Environmental Protection Agency, Office of Water can also be found at https://www.epa.gov/sites/production/files/2016-03/documents/econworkbook-complete.pdf.

(c) "Aquatic Life Ambient Freshwater Quality Criteria-Copper", February 2007, Publication No. EPA-822-R-07-001, U.S. Environmental Protection Agency, Office of Water can also be

found at https://www.epa.gov/sites/production/files/2019-02/documents/al-freshwater-copper-2007-revision.pdf. (5 Ky.R. 829; Am. 6 Ky.R. 344; eff. 12-5-1979; 11 Ky.R. 1144; 1384; eff. 4-9-1985; 16 Ky.R. 838; 1370; 2666; eff. 5-31-1990; 18 Ky.R. 1388; 2331; eff. 1-27-1992; 26 Ky.R. 150; 824; 1148; eff. 12-8-1999; 30 Ky.R. 1035; 1813; eff. 9-8-2004; TAm eff. 8-9-2007, Recodified from 401 KAR 5:031; 2008; 35 Ky.R. 177; 930; 2723; eff. 7-6-2009; 39 Ky.R. 596; 1188; 2167; eff. 5-31-2013; 42 Ky.R. 900; 1798; eff. 2-5-2016; TAm eff. 7-8-2016; 46 Ky.R. 222, 1251, 1858; eff. 1-3-2020.)