APPENDIX A

NON-SUBSTANTIVE EDITORIAL REVISIONS

15A NCAC 02B .0206 is amended as published in 28:24 NCR 3004-3032 as follows:

15A NCAC 02B .0206 FLOW DESIGN CRITERIA FOR EFFLUENT LIMITATIONS

(a) Water quality based effluent limitations ~~are~~ shall be developed to allow appropriate frequency and duration of deviations from water quality standards so that the designated uses of receiving waters are protected. There are water quality standards for a number of categories of pollutants and to protect a range of water uses. For this reason, the appropriate frequency and duration of deviations from water quality standards ~~is not~~ shall not be the same for all categories of standards. A flow design criterion ~~is~~ shall be used in the development of water quality based effluent limitations as a simplified means of estimating the acceptable frequency and duration of deviations. More complex modeling techniques ~~can~~ may also be used to set effluent limitations directly based on frequency and duration criteria published by the U.S. Environmental Protection Agency available free of charge ~~pursuant to Section 304(a) of the Federal Clean Water Act as amended.~~ at http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm are hereby incorporated by reference including any subsequent amendments. Use of more complex modeling techniques to set water quality based effluent limitations ~~will~~ shall be approved by the Commission or its designee on a case-by-case basis. Flow design criteria to calculate water quality based effluent limitations for categories of water quality standards ~~are listed as follows:~~ shall be the following:

(1) All standards except toxic substances and aesthetics ~~will~~ shall be protected using the minimum average flow for a period of seven consecutive days that has an average recurrence of once in ten years (7Q10 flow). Other governing flow ~~strategies~~ strategies, such as varying discharges with the receiving waters ability to assimilate ~~wastes~~wastes, may be designated by the Commission or its designee on a case-by-case basis if the discharger or permit applicant ~~provide~~ provides evidence ~~which~~ that establishes to the satisfaction of the Director that the alternative flow strategies will give equal or better protection for the water quality standards. ~~Better~~ "Better protection for the water quality ~~standards~~ standards" means that deviations from the standard would be expected less frequently than provided by using the 7Q10 flow.

(2) Toxic substance standards to protect aquatic life from chronic toxicity ~~will~~ shall be protected using the 7Q10 flow.

(3) Toxic substance standards to protect aquatic life from acute toxicity [~~will~~] shall be protected using the 1Q10 flow.

~~(3)~~(4) Toxic substance standards to protect human health ~~will be:~~ shall be the following:

(A) The 7Q10 flow for standards to protect human health through the consumption of water, ~~fish~~ fish, and shellfish from ~~noncarcinogens;~~ noncarcinogens; and

(B) The mean annual flow to protect human health from carcinogens through the consumption of water, ~~fish~~ fish, and shellfish unless site specific fish contamination concerns necessitate the use of an alternative design flow;

~~(4)~~(5) Aesthetic quality ~~will~~ shall be protected using the minimum average flow for a period of 30 consecutive days that has an average recurrence of once in two years (30Q2 flow).

(b) In cases where the stream flow is regulated, a minimum daily low flow may be used as a substitute for the 7Q10 ~~flow~~ flow, except in cases where there are acute toxicity concerns for aquatic life. In the cases where there are acute toxicity concerns, an alternative low ~~flow~~ flow, such as the instantaneous minimum ~~release~~ release, shall be approved by the Director ~~may be used~~ on a case-by-case ~~basis.~~basis so that the designated uses of receiving waters are protected.

(c) Flow design criteria ~~are~~ shall be used to develop water quality based effluent limitations and for the design of wastewater treatment facilities. Deviations from a specific water quality standard resulting from discharges ~~which~~ that are affirmatively demonstrated to be in compliance with water quality based effluent limitations for that standard ~~will~~ shall not be a violation pursuant to G.S. 143-215.6 when the actual flow is significantly less than the design flow.

(d) In cases where the 7Q10 flow of the receiving stream is estimated to be zero, water quality based effluent limitations ~~will~~ shall be assigned as follows:

(1) Where the 30Q2 flow is estimated to be greater than zero, effluent limitations for new or expanded (additional) discharges of oxygen consuming waste ~~will~~ shall be set at BOD_5= 5 mg/l, NH_3-N = 2 mg/l and DO = 6 mg/l, unless it is determined by the Director that these limitations will not protect water quality standards. Requirements for existing discharges ~~will~~ shall be determined on a case-by-case basis by the Director. More stringent limits ~~will~~ shall be applied in cases where violations of water quality standards are predicted to occur for a new or expanded discharge with the limits set pursuant to this Rule, or where existing limits are determined to be inadequate to protect water quality standards.

(2) If the 30Q2 and 7Q10 flows are both estimated to be zero, no new or expanded (additional) discharge of oxygen consuming waste ~~will~~ shall be allowed. Requirements for existing discharges to streams where the 30Q2 and 7Q10 flows are both estimated to be zero ~~will~~ shall be determined on a case-by-case basis.

(3) Other water quality standards ~~will~~shall be protected by requiring the discharge to meet the standards unless the Director determines that alternative limitations ~~are determined by the Director to~~ protect the classified water uses.

(e) Receiving water flow statistics ~~will~~ shall be estimated through consultation with the U.S. Geological Survey. Estimates for any given location may be based on actual flow data, modeling analyses, or other methods determined to be appropriate by the Commission or its designee.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. February 1, 1976;
Amended Eff. January 1, 2015; February 1, 1993; October 1, 1989; August 1, 1985; January 1, 1985.

15A NCAC 02B .0211 is amended with changes as published in 28:24 NCR 3004-3032 as follows:

15A NCAC 02B .0211 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS C WATERS

General. The water quality standards for all fresh surface waters ~~are~~ shall be the basic standards applicable to Class C waters. ~~See Rule .0208 of this Section for standards for toxic substances and temperature.~~ Water quality standards for temperature and numerical water quality standards for the protection of human health applicable to all fresh surface waters are in Rule .0208 of this Section. Additional and more stringent standards applicable to other specific freshwater classifications are specified in Rules .0212, .0214, .0215, .0216, ~~.0217,~~ .0218, .0219, .0223, .0224 and .0225 of this Section. Action Levels for purposes of National Pollutant Discharge Elimination System (NPDES) [~~NPDES~~] permitting are specified in Item (22) of this Rule.

(1) Best Usage of Waters: aquatic life propagation and maintenance of biological integrity (including fishing and fish), wildlife, secondary recreation, ~~agriculture~~ agriculture, and any other usage except for primary recreation or as a source of water supply for drinking, ~~culinary~~ culinary, or food processing purposes;

(2) Conditions Related to Best Usage: the waters shall be suitable for aquatic life propagation and maintenance of biological integrity, wildlife, secondary recreation, and agriculture. Sources of water pollution ~~which~~ that precludе any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard;

~~(3) Quality standards applicable to all fresh surface waters:~~

(3) Chlorine, total residual: 17 ug/l;

(4)~~(a)~~ Chlorophyll a (corrected): not greater than 40 ug/l for lakes, reservoirs, and other waters subject to growths of macroscopic or microscopic vegetation not designated as trout waters, and not greater than 15 ug/l for lakes, reservoirs, and other waters subject to growths of macroscopic or microscopic vegetation designated as trout waters (not applicable to lakes or reservoirs less than 10 acres in surface area). The Commission or its designee may prohibit or limit any discharge of waste into surface waters ~~if, in the opinion of the Director,~~ if the surface waters experience or the discharge would result in growths of microscopic or macroscopic vegetation such that the standards established pursuant to this Rule would be violated or the intended best usage of the waters would be impaired;

(5) Cyanide, total: 5.0 ug/L;

(6)~~(b)~~ Dissolved oxygen: not less than 6.0 mg/l for trout waters; for non-trout waters, not less than a daily average of 5.0 mg/l with a minimum instantaneous value of not less than 4.0 mg/l; swamp waters, lake ~~coves~~ coves, or backwaters, and lake bottom waters may have lower values if caused by natural conditions;

(7) Fecal coliform: shall not exceed a geometric mean of 200/100ml (MF count) based upon at least five consecutive samples examined during any 30 day period, nor exceed 400/100ml in more than 20 percent of the samples examined during such period. Violations of the fecal coliform standard

are expected during rainfall events and, in some cases, this violation is expected to be caused by uncontrollable nonpoint source pollution. All coliform concentrations [~~are to~~]shall be analyzed using the membrane filter [~~technique~~] technique, unless high turbidity or other adverse conditions necessitate the tube dilution[~~method;~~] method. [~~in~~]In case of controversy over results, the MPN 5-tube dilution technique shall be used as the reference method;

(8)~~(c)~~ Floating solids, settleable solids, or sludge deposits: only such amounts attributable to sewage, industrial ~~wastes~~ wastes, or other wastes as shall not make the water unsafe or unsuitable for aquatic life and wildlife or impair the waters for any designated uses;

(9) Fluorides: 1.8 mg/l;

(10)~~(d)~~ Gases, total dissolved: not greater than 110 percent of saturation;

~~(e) Organisms of the coliform group: fecal coliforms shall not exceed a geometric mean of 200/100ml (MF count) based upon at least five consecutive samples examined during any 30 day period, nor exceed 400/100ml in more than 20 percent of the samples examined during such period. Violations of the fecal coliform standard are expected during rainfall events and, in some cases, this violation is expected to be caused by uncontrollable nonpoint source pollution. All coliform concentrations are to be analyzed using the membrane filter technique unless high turbidity or other adverse conditions necessitate the tube dilution method; in case of controversy over results, the MPN 5-tube dilution technique shall be used as the reference method;~~

(11) Metals:

(a) With the exception of mercury and selenium, freshwater aquatic life standards for metals shall be based upon measurement of the dissolved fraction of the metal. Mercury and [~~Selenium~~] selenium water quality standards [~~must~~] shall be based upon measurement of the total recoverable ~~metal.~~metal; ~~[Alternative site-specific metals standards can be developed where studies are designed in accordance with the "Water Quality Standards Handbook: Second Edition" published by the US Environmental Protection Agency (EPA 823-B-94-005a) hereby incorporated by reference including any subsequent amendments;]~~

(b) Freshwater metals standards that are not hardness-dependent [~~are~~] shall be as follows:

(i) Arsenic, dissolved, acute: WER· 340 ug/l;

(ii) Arsenic, dissolved, chronic: WER· 150 ug/l;

(iii) Beryllium, dissolved, acute: WER· 65 ug/l;

(iv) Beryllium, dissolved, chronic: WER· 6.5 ug/l;

(v) Chromium VI, dissolved, acute: WER· 16 ug/l;

(vi) Chromium VI, dissolved, chronic: WER· 11 ug/l;

(vii) Mercury, total recoverable, chronic: 0.012 ug/l;

(viii) Selenium, total recoverable, chronic: 5 ug/l;

(ix) Silver, dissolved, chronic: WER· 0.06 ug/l;

With the exception of mercury and selenium, acute and chronic freshwater aquatic life standards for metals listed [~~above~~] in this Subparagraph apply to the dissolved form of the metal and apply as a function of the pollutant's water effect ratio (WER). A WER [~~is a factor that~~] expresses the difference between the measures of the toxicity of a substance in laboratory waters and the toxicity in site water. The WER [~~is~~]shall be assigned a value equal to one [~~(1)~~]unless any person demonstrates to the [~~Department's~~]Division's satisfaction in a permit proceeding that another value is [~~appropriately~~] developed in accordance with the "Water Quality Standards Handbook: Second Edition" published by the US Environmental Protection Agency (EPA-823-B-12-002), free of charge, at http://water.epa.gov/scitech/swguidance/standards/handbook/, hereby incorporated by reference including any subsequent amendments. Alternative site-specific standards [~~can~~] may also be developed when any person submits values that demonstrate to the Commissions' satisfaction that they were derived in accordance with the "Water Quality Standards Handbook: Second Edition, Recalculation Procedure or the Resident Species [~~Procedure".~~]Procedure", hereby incorporated by reference including subsequent amendments at http://water.epa.gov/scitech/swguidance/standards/handbook/.
This material is available free of charge.

Hardness-dependent freshwater metals standards are located in Sub-Item (c) and (d) and in Table A: Dissolved Freshwater Standards for Hardness-Dependent Metals;

(c) Hardness-dependent freshwater metals standards [~~are~~] shall be as follows:

(i) Hardness-dependent metals standards shall be derived using the equations specified in Table A: Dissolved Freshwater Standards for Hardness-Dependent Metals. If the actual instream hardness (expressed as $CaCO_3$ or Ca+Mg) is less than 25 milligrams/liter (mg/l), standards shall be calculated based upon 25 mg/l hardness. If the actual instream hardness is greater than 25 mg/l and less than 400 mg/l, standards [~~will~~] shall be calculated based upon the actual instream hardness. If the instream hardness is greater than 400 mg/l, the maximum applicable hardness shall be 400 mg/l;

(ii) Hardness-dependent metals [~~standards~~] in NPDES permitting: for NPDES permitting purposes, application of the equations in Table A: Dissolved Freshwater Standards for Hardness-Dependent Metals [~~requires~~] shall have hardness values (expressed as $CaCO_3$ or Ca+Mg) established using the median of instream hardness data collected within the local US Geological Survey (USGS) and Natural Resources Conservation Service (NRCS) 8-digit Hydrologic Unit (HU). The minimum applicable instream hardness shall be 25 mg/l and the maximum applicable instream hardness shall be 400 mg/l, even when the actual median instream hardness is less than 25 mg/l and greater than 400 mg/l;

(d) Alternatives:

Acute and chronic freshwater aquatic life standards for metals listed in Table A apply to the dissolved form of the metal and apply as a function of the pollutant's water effect ratio[~~(WER).~~](WER), which is set forth in Sub-Item (b). [~~A WER is a factor that expresses the difference between the measures of the toxicity of a substance in laboratory waters and the toxicity in site water. The WER is assigned a value equal to one (1) unless any person demonstrates to the Department's satisfaction in a permit proceeding that another value is appropriately developed in accordance with the "Water Quality Standards Handbook: Second Edition" published by the US Environmental Protection Agency (EPA-823-B-12-002) hereby incorporated by reference including any subsequent amendments.~~ Alternative site-specific standards [~~ean~~] may also be developed as set forth in Sub-Item (b); [~~when any person submits values that demonstrate to the Commissions' satisfaction that they were derived in accordance with the "Water Quality Standards Handbook: Second Edition, Recalculation Procedure or the Resident Species Procedure";~~]

Table A: Dissolved Freshwater Standards for Hardness-Dependent Metals

Numeric standards[~~listed below are~~]calculated at 25 mg/l hardness are listed below for illustrative purposes. The Water Effects Ratio (WER) is equal to one [~~(1)~~] unless determined otherwise under [~~15A NCAC 02B .0211 (d).~~] Sub-Item (d) of this rule.

Metal	Equations for Hardness-Dependent Freshwater Metals (ug/l)	Standard at 25 mg/l hardness (ug/l)
Cadmium, Acute	WER· [{1.136672-[*ln* hardness](0.041838)} · *e*^{0.9151 [*ln* hardness]-3.1485}]	0.82
Cadmium, Acute, Trout waters	WER· [{1.136672-[*ln* hardness](0.041838)} · *e*^{0.9151[*ln* hardness]-3.6236}]	0.51
Cadmium, Chronic	WER· [{1.101672-[*ln* hardness](0.041838)} · *e*^{0.7998[*ln* hardness]-4.4451}]	0.15
Chromium III, Acute	WER· [0.316 · *e*^{0.8190[*ln* hardness]+3.7256}]	180
Chromium III, Chronic	WER· [0.860 · *e*^{0.8190[*ln* hardness]+0.6848}]	24
Copper, Acute	WER· [0.960 · *e*^{0.9422[*ln* hardness]-1.700}] Or, Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision	3.6 NA

	(EPA-822-R-07-001)	
Copper, Chronic	WER· [0.960 · *e*^{0.8545[*ln* hardness]-1.702}] Or, Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision (EPA-822-R-07-001)	2.7 NA
Lead, Acute	WER· [{1.46203-[*ln* hardness](0.145712)} · *e*^{1.273[*ln* hardness]-1.460}]	14
Lead, Chronic	WER· [{1.46203-[*ln* hardness](0.145712)} · *e*^{1.273[*ln* hardness]-4.705}]	0.54
Nickel, Acute	WER· [0.998 · *e*^{0.8460[*ln* hardness]+2.255}]	140
Nickel, Chronic	WER· [0.997 · *e*^{0.8460[*ln* hardness]+0.0584}]	16
Silver, Acute	WER· [0.85 · *e*^{1.72[*ln* hardness]-6.59}]	0.30
Zinc, Acute	WER· [0.978 · *e*^{0.8473[*ln* hardness]+0.884}]	36
Zinc, Chronic	WER· [0.986 · *e*^{0.8473[*ln* hardness]+0.884}]	36

[~~(d)~~](e) Compliance with acute instream metals standards shall only be evaluated using an average of two or more samples collected within one hour. Compliance with chronic instream metals standards shall only be evaluated using averages of a minimum of four samples taken on consecutive days, or as a 96-hour average;

[~~(e) With the exception of mercury and selenium, demonstrated attainment of the applicable aquatic life use in a waterbody will take precedence over the application of the aquatic life criteria established for metals associated with these uses. An instream exceedence of the numeric criterion for metals shall not be considered to have caused an adverse impact to the instream aquatic community if biological monitoring has demonstrated attainment of biological integrity.~~]

(f) Metals criteria [~~will~~] shall be used for proactive environmental management. An instream exceedence of the numeric criterion for metals shall not be considered to have caused an adverse impact to the instream aquatic community without biological confirmation and a comparison of all available monitoring data and applicable water quality standards. This weight of evidence evaluation [~~will~~]shall take into account data quality and the overall confidence in how representative the sampling is of conditions in the waterbody segment before an assessment of aquatic life use attainment, or non-attainment, [~~is~~] shall be made by the Division. Recognizing the synergistic and antagonistic complexities of other water quality variables on the actual toxicity of metals, with the exception of mercury and selenium, biological monitoring will be used to validate, by direct measurement, whether or not the aquatic life use is supported;

~~(f)~~(12) Oils, deleterious substances, ~~colored~~ colored, or other wastes: only such amounts as shall not render the waters injurious to public health, secondary ~~recreation~~ recreation, or to aquatic life and ~~wildlife~~

wildlife, or adversely affect the palatability of fish, aesthetic ~~quality~~ quality, or impair the waters for any designated uses. For the purpose of implementing this Rule, oils, deleterious substances, ~~colored~~ colored, or other wastes shall include ~~but not be limited to~~ substances that cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines pursuant to 40 CFR 110.3(a)-(b) which are hereby incorporated by reference including any subsequent amendments and additions. This material is ~~available~~available, free of charge, at: http://www.ecfr.gov/; ~~for inspection at the Department of Environment and Natural Resources, Division of Water Quality, [Water Resources,] 512 North Salisbury Street, Raleigh, North Carolina.~~[~~Carolina;~~] ~~Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325 at a cost of forty-five dollars ($45.00);D.C.;~~

(13) Pesticides:

(a) Aldrin: 0.002 ug/l;

(b) Chlordane: 0.004 ug/l;

(c) DDT: 0.001 ug/l;

(d) Demeton: 0.1 ug/l;

(e) Dieldrin: 0.002 ug/l;

(f) Endosulfan: 0.05 ug/l;

(g) Endrin: 0.002 ug/l;

(h) Guthion: 0.01 ug/l;

(i) Heptachlor: 0.004 ug/l;

(j) Lindane: 0.01 ug/l;

(k) Methoxychlor: 0.03 ug/l;

(l) Mirex: 0.001 ug/l;

(m) Parathion: 0.013 [~~ug/l;~~] ug/l; and

(n) Toxaphene: 0.0002 ug/l;

~~(g)~~(14) pH: shall be normal for the waters in the area, which ~~generally shall~~ range between 6.0 and 9.0 except that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;

~~(h)~~(15) Phenolic compounds: only such levels as shall not result in fish-flesh tainting or impairment of other best usage;

(16) Polychlorinated biphenyls (total of all PCBs and congeners identified): 0.001 ug/l;

~~(i)~~(17) Radioactive substances:

~~(i)~~(a) Combined radium-226 and radium-228: the ~~maximum~~ average annual activity level (based on at least one sample collected per quarter)~~four samples collected quarterly)~~ for combined radium-226 and radium-228 shall not exceed five picoCuries per liter;

~~(ii)~~(b) Alpha Emitters: the average annual gross alpha particle activity (including radium-226, but excluding radon and uranium) shall not exceed 15 picoCuries per liter;

~~(iii)~~(c) Beta Emitters: the ~~maximum~~ average annual activity level (based on at least one sample collected per quarter) ~~four samples, collected quarterly)~~ for strontium-90 shall not exceed eight picoCuries per liter; nor shall the average annual gross beta particle activity (excluding potassium-40 and other naturally occurring ~~radio-nuclides)~~radionuclides) exceed 50 picoCuries per liter; nor shall the ~~maximum~~ average annual activity level for tritium exceed 20,000 picoCuries per liter;

~~(i)~~(18) Temperature: not to exceed 2.8 degrees C (5.04 degrees F) above the natural water temperature, and in no case to exceed 29 degrees C (84.2 degrees F) for mountain and upper piedmont waters and 32 degrees C (89.6 degrees F) for lower piedmont and coastal plain Waters; the temperature for trout waters shall not be increased by more than 0.5 degrees C (0.9 degrees F) due to the discharge of heated liquids, but in no case to exceed 20 degrees C (68 degrees F);

(19) Toluene: 11 ug/l or 0.36 ug/l in trout classified waters;

(20) Trialkyltin compounds: 0.07 ug/l expressed as tributyltin;

~~(k)~~(21) Turbidity: the turbidity in the receiving water shall not exceed 50 Nephelometric Turbidity Units (NTU) in streams not designated as trout waters and 10 NTU in streams, ~~lakes~~ lakes, or reservoirs designated as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased. Compliance with this turbidity standard can be met when land management activities employ Best Management Practices (BMPs) [as defined by Rule .0202 of this Section] recommended by the Designated Nonpoint Source Agency [as defined by Rule .0202 of this Section]. BMPs ~~must~~ shall be in full compliance with all specifications governing the proper design, installation, ~~operation~~ operation, and maintenance of such BMPs;

~~(l) Toxic substances: numerical water quality standards (maximum permissible levels) for the protection of human health applicable to all fresh surface waters are in Rule .0208 of this Section. Numerical water quality standards (maximum permissible levels) to protect aquatic life applicable to all fresh surface waters:~~

~~(i) Arsenic: 50 ug/l;~~

~~(ii) Beryllium: 6.5 ug/l;~~

~~(iii) Cadmium: 0.4 ug/l for trout waters and 2.0 ug/l for non-trout waters; attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which~~

~~are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators;~~

~~(iv) Chlorine, total residual: 17 ug/l;~~

~~(v) Chromium, total recoverable: 50 ug/l;~~

~~(vi) Cyanide, 5.0 ug/l, unless site-specific criteria are developed based upon the aquatic life at the site utilizing The Recalculation Procedure in Appendix B of Appendix L in the Environmental Protection Agency's Water Quality Standards Handbook hereby incorporated by reference including any subsequent amendments;~~

~~(vii) Fluorides: 1.8 mg/l;~~

~~(viii) Lead, total recoverable: 25 ug/l, collection of data on sources, transport and fate of lead shall be required as part of the toxicity reduction evaluation for dischargers who are out of compliance with whole effluent toxicity testing requirements and the concentration of lead in the effluent is concomitantly determined to exceed an instream level of 3.1 ug/l from the discharge;~~

~~(ix) Mercury: 0.012 ug/l;~~

~~(x) Nickel: 88 ug/l, attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators;~~

~~(xi) Pesticides:~~

~~(A) Aldrin: 0.002 ug/l;~~

~~(B) Chlordane: 0.004 ug/l;~~

~~(C) DDT: 0.001 ug/l;~~

~~(D) Demeton: 0.1 ug/l;~~

~~(E) Dieldrin: 0.002 ug/l;~~

~~(F) Endosulfan: 0.05 ug/l;~~

~~(G) Endrin: 0.002 ug/l;~~

~~(H) Guthion: 0.01 ug/l;~~

~~(I) Heptachlor: 0.004 ug/l;~~

~~(J) Lindane: 0.01 ug/l;~~

~~(K) Methoxychlor: 0.03 ug/l;~~

~~(L) Mirex: 0.001 ug/l;~~

~~(M) Parathion: 0.013 ug/l;~~

~~(N) Toxaphene: 0.0002 ug/l;~~

~~(xii) Polychlorinated biphenyls: (total of all PCBs and congeners identified) 0.001 ug/l;~~

~~(xiii) Selenium: 5 ug/l;~~

~~(xiv) Toluene: 11 ug/l or 0.36 ug/l in trout waters;~~

~~(xv) Trialkyltin compounds: 0.07 ug/l expressed as tributyltin;~~

~~(4)~~(22) Action Levels for Toxic ~~Substances:~~ Substances Applicable to NPDES Permits:

(a) ~~Copper: 7 ug/l;~~Copper, dissolved, chronic: 2.7 ug/l;

~~(b) Iron: 1.0 mg/l;~~

(c) ~~Silver:~~Silver, dissolved, chronic: 0.06 ug/l;

(d) ~~Zinc:~~Zinc, dissolved, chronic: ~~50 ug/l;~~36 [~~ug/l;~~] ug/l; and

(e) Chloride: 230 mg/l;

The hardness-dependent freshwater action levels for ~~Copper and Zinc,~~ copper and zinc, provided here for illustrative purposes, corresponds to a hardness of 25 mg/l. Copper and [~~Zinc~~] zinc action level values for other instream hardness values shall be calculated per the chronic equations specified in Item (11) of this Rule and in Table A: Dissolved Freshwater Standards for Hardness-Dependent Metals. If the ~~Action Levels~~ action levels for any of the substances listed in this ~~Subparagraph~~Item (which are generally not bioaccumulative and have variable toxicity to aquatic life because of chemical form, solubility, stream characteristics or associated waste characteristics) are determined by the waste load allocation to be exceeded in a receiving water by a discharge under the specified ~~low flow~~ 7Q10 criterion for toxic ~~substances (Rule .0206 in this Section),~~ substances, the discharger shall monitor the chemical or biological effects of the discharge; efforts shall be made by all dischargers to reduce or eliminate these substances from their effluents. Those substances for which ~~Action Levels~~ action levels are listed in this ~~Subparagraph~~Item shall be limited as appropriate in the NPDES permit ~~based on the Action Levels listed in this Subparagraph~~ if sufficient information (to be determined for metals by measurements of that portion of the dissolved instream concentration of the ~~Action Levels~~ action levels parameter attributable to a specific NPDES permitted discharge) exists to indicate that any of those substances may be a causative factor resulting in toxicity of the effluent. ~~NPDES permit limits may be based on translation of the toxic form to total recoverable metals. Studies used to determine the toxic form or translators must be~~

~~designed according to "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.~~

~~For purposes other than consideration of NPDES permitting of point source discharges as described in this Subparagraph, the Action Levels in this Rule, as measured by an appropriate analytical technique, per 15A NCAC 02B .0103(a), shall be considered as numerical instream water quality standards.~~

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
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15A NCAC 02B .0212 is amended with changes as published in 28:24 NCR 3004-3032 as follows:

15A NCAC 02B .0212 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-I WATERS

The following water quality standards apply to surface waters within water supply watersheds ~~that are~~ classified as WS-I. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section shall also apply to Class WS-I waters.

(1) The best usage of WS-I waters ~~are~~ shall be as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users desiring maximum protection of their water supplies; waters located on land in public ownership; and any best usage specified for Class C waters;

(2) The conditions related to the best usage ~~are~~ shall be as follows: waters of this class are protected water supplies within essentially natural and undeveloped watersheds in public ownership with no permitted point source dischargers except those specified in Rule .0104 of this Subchapter; waters within this class ~~must~~ shall be relatively unimpacted by nonpoint sources of pollution; land use management programs are required to protect waters from nonpoint source pollution; the waters, following treatment required by the ~~Division of Environmental Health,~~Division, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, and food-processing purposes ~~which~~ that are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500. Sources of water pollution ~~which~~ that preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard. The Class WS-I classification may be used to protect portions of Class WS-II, ~~WS-III~~ WS-III, and WS-IV water supplies. For reclassifications occurring after the July 1, 1992 statewide reclassification, the more protective classification requested by local governments shall be considered by the Commission when all local governments having jurisdiction in the affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the Commission acts to protect a watershed when one or more local governments has failed to adopt necessary protection measures;

(3) Quality standards applicable to Class WS-I Waters ~~are~~ shall be as follows:

(a) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

(b) Nonpoint Source Pollution: none shall be allowed that would adversely impact the waters for use as a water supply or any other designated use;

(c) Organisms of coliform group: total coliforms not to exceed 50/100 ml (MF count) as a monthly geometric mean value in watersheds serving as unfiltered water supplies;

(d) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies from taste and odor problems from chlorinated phenols;

(e) Sewage, industrial wastes: none shall be allowed except those specified in ~~Subparagraph~~Item~~(2)~~ Item (2) of this ~~Paragraph~~Rule or Rule .0104 of this Subchapter;

(f) Solids, total dissolved: not greater than 500 mg/l;

(g) Total hardness: not greater than 100 mg/l as calcium ~~carbonate;~~carbonate ($CaCO_3$ or Ca + Mg);

(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-I waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

~~(C) Manganese: 200 ug/l;~~

~~(D)~~(C) Nickel: 25 ug/l;

~~(E)~~(D) Nitrate nitrogen: 10.0 mg/l;

~~(F)~~(E) 2,4-D: ~~100 ug/l;~~70 ug/l;

~~(G)~~(F) 2,4,5-TP (Silvex): 10 ~~ug/l;~~ ug/l; and

~~(H)~~(G) Sulfates: 250 mg/l;

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-I waters:

(A) Aldrin: 0.05 ng/1;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/1;

(D) Carbon tetrachloride: 0.254 ug/l;

(E) Chlordane: 0.8 ng/1;

(F) Chlorinated benzenes: 488 ug/l;

(G) DDT: 0.2 ng/1;

(H) Dieldrin: 0.05 ng/1;

(I) Dioxin: 0.000005 ng/l;

(J) Heptachlor: 0.08 ng/1;

(K) Hexachlorobutadiene: 0.44 ug/l;

(L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;

(M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;

(N) Tetrachloroethylene: 0.7 ug/l;

(O) Trichloroethylene: 2.5 ~~ug/l;~~ ug/l; and

(P) Vinyl Chloride: 0.025 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. February 1, 1976;
Amended Eff. January 1, 2015; May 1, 2007; April 1, 2003; October 1, 1995; February 1, 1993;
March 1, 1991; October 1, 1989.

15A NCAC 02B .0214 is amended with changes as published in 28:24 NCR 3004-3032 as follows:

15A NCAC 02B .0214 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-II WATERS

The following water quality standards apply to surface waters within water supply watersheds ~~that are~~ classified as WS-II. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section shall also apply to Class WS-II waters.

(1) The best usage of WS-II waters ~~are~~ shall be as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users desiring maximum protection for their water supplies where a WS-I classification is not feasible and any best usage specified for Class C waters;

(2) The conditions related to the best usage ~~are~~ shall be as follows: waters of this class are protected as water supplies ~~which~~ that are in predominantly undeveloped watersheds and meet average watershed development density levels as specified in Sub-Items (3)(b)(i)(A), (3)(b)(i)(B), (3)(b)(ii)(A) and (3)(b)(ii)(B) of this Rule; discharges ~~which~~ that qualify for a General Permit pursuant to 15A NCAC 2H .0127, trout farm discharges, recycle (closed loop) systems that only discharge in response to 10-year storm events and other stormwater discharges ~~are~~ shall be allowed in the entire watershed; new domestic and industrial discharges of treated wastewater ~~are not~~ shall not be allowed in the entire watershed; the waters, following treatment required by the ~~Division of Environmental Health,~~Division, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, and food-processing purposes ~~which~~ that are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500. Sources of water pollution ~~which~~ that preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard. The Class WS-II classification may be used to protect portions of Class WS-III and WS-IV water supplies. For reclassifications of these portions of Class WS-III and WS-IV water supplies occurring after the July 1, 1992 statewide reclassification, the more protective classification requested by local governments shall be considered by the Commission when all local governments having jurisdiction in the affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the Commission acts to protect a watershed when one or more local governments has failed to adopt necessary protection measures;

(3) Quality standards applicable to Class WS-II Waters ~~are~~ shall be as follows:

(a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none shall be allowed except for those specified in either Item (2) of this Rule and Rule .0104 of this Subchapter; none shall be allowed that have an adverse effect on human health or that are not ~~effectively~~ treated to the satisfaction of the Commission and in accordance with the requirements of the ~~Division of Environmental Health, North Carolina Department of~~

~~Environment and Natural Resources.~~Division. Any discharger ~~may~~ shall be required upon request by the Commission to disclose all chemical constituents present or potentially present in their wastes and chemicals ~~which~~ that could be spilled or be present in runoff from their facility ~~which~~ that may have an adverse impact on downstream water quality. These facilities may be required to have spill and treatment failure control plans as well as perform special monitoring for toxic substances;

(b) Nonpoint Source and Stormwater Pollution: none that would adversely impact the waters for use as a water supply or any other designated use;

(i) Nonpoint Source and Stormwater Pollution Control Criteria for Entire Watershed:

(A) Low Density Option: development density ~~must~~shall be limited to either no more than one dwelling unit per acre of single family detached residential development (or 40,000 square foot lot excluding roadway ~~right-of-way)~~ right-of-way), or 12 percent built-upon area for all other residential and non-residential development in the watershed outside of the critical area; stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: if new development exceeds the low density option requirements as stated in Sub-Item (3)(b)(i)(A) of this Rule, then engineered stormwater controls ~~must~~ shall be used to control runoff from the first inch of rainfall; new residential and non-residential development shall not exceed 30 percent built-upon area;

(C) Land within the watershed shall be deemed compliant with the density requirements if the following condition is met: the density of all existing development at the time of reclassification does not exceed the density requirement when densities are averaged throughout the entire watershed area at the time of classification;

(D) Cluster development ~~is~~ shall be allowed on a project-by-project basis as follows:

(I) overall density of the project meets associated density or stormwater control requirements of this Rule;

(II) buffers meet the minimum statewide water supply watershed protection requirements;

(III) built-upon areas ~~are~~ shall be designed and located to minimize stormwater runoff impact to the receiving waters, minimize concentrated stormwater flow, maximize the use of

sheet flow through vegetated areas, and maximize the flow length through vegetated areas;

(IV) areas of concentrated development ~~are~~ shall be located in upland areas and away, to the maximum extent practicable, from surface waters and drainageways;

(V) remainder of tract to remain in vegetated or natural state;

(VI) area in the vegetated or natural state may be conveyed to a property owners association, a local government for preservation as a park or greenway, a conservation organization, or placed in a permanent conservation or farmland preservation easement;

(VII) a maintenance agreement for the vegetated or natural area shall be filed with the Register of Deeds; and

(VIII) cluster development that meets the applicable low density option requirements shall transport stormwater runoff from the development by vegetated conveyances to the maximum extent practicable;

(E) A maximum of 10 percent of each jurisdiction's portion of the watershed outside of the critical area as delineated on July 1, 1993 may be developed with new development projects and expansions of existing development of up to 70 percent built-upon surface area (the "10/70 option") in addition to the new development approved in compliance with the appropriate requirements of Sub-Item (3)(b)(i)(A) or Sub-Item (3)(b)(i)(B) of this Rule. For expansions to existing development, the existing built-upon surface area ~~is not~~shall not be counted toward the allowed 70 percent built-upon surface area. A local government having jurisdiction within the watershed may transfer, in whole or in part, its right to the ~~10 percent/70 percent~~ 10/70 option land area to another local government within the watershed upon submittal of a joint resolution and review by the Commission. When the water supply watershed is composed of public lands, such as National Forest land, local governments may count the public land acreage within the watershed outside of the critical area in calculating the acreage allowed under this provision. For local governments that do not choose to use the high density option in that WS-II watershed, each project ~~must,~~ shall, to the maximum extent practicable, minimize built-upon surface area, direct stormwater runoff away from surface ~~waters~~waters, and

incorporate best management ~~practices~~practices, as defined in Rule .0202 of this Section, to minimize water quality impacts. If the local government selects the high density development option within that WS-II watershed, then engineered stormwater controls ~~must~~ shall be employed for the new development;

(F) If local governments choose the high density development option ~~which~~that requires stormwater controls, then they shall assume ultimate responsibility for operation and maintenance of the required controls as outlined in Rule .0104 of this Subchapter;

(G) ~~Minimum~~ A minimum 100 foot vegetative buffer ~~is~~ shall be required for all new development activities that exceed the low density option requirements as specified in Sub-Items (3)(b)(i)(A) and Sub-Item (3)(b)(ii)(A) of this Rule, otherwise a minimum 30 foot vegetative buffer for development activities ~~is~~ shall be required along all perennial waters indicated on the most recent versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies. Nothing in this Rule shall stand as a bar to artificial streambank or shoreline stabilization;

(H) No new development ~~is~~ shall be allowed in the buffer; water dependent structures, or other structures such as flag poles, ~~signs~~ signs, and security lights, which result in only de minimus increases in impervious area and public projects such as road crossings and greenways may be allowed where no practicable alternative exists. These activities shall minimize built-upon ~~surface area, direct runoff away from the surface waters and maximize the utilization of BMPs;~~surface area and avoid channelizing stormwater;

(I) No National Pollutant Discharge Elimination System(NPDES) ~~NPDES~~ permits shall be issued for landfills that discharge treated leachate;

(ii) Critical Area Nonpoint Source and Stormwater Pollution Control Criteria:

(A) Low Density Option: new development ~~is~~ shall be limited to either no more than one dwelling unit of single family detached residential development per two acres (or 80,000 square foot lot excluding roadway ~~right-of-way)~~right-of-way), or six percent built-upon area for all other residential and non-residential development; stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: if new development density exceeds the low density requirements specified in Sub-Item (3)(b)(ii)(A) of this Rule, then engineered stormwater controls ~~must~~ shall be used to control runoff from the first inch of rainfall; new residential and non-residential development density ~~not to~~ shall not exceed 24 percent built-upon area;

(C) No new permitted sites for land application of residuals or petroleum contaminated soils ~~are~~ shall be allowed;

(D) No new landfills ~~are~~ shall be allowed;

(c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

(d) Odor producing substances contained in sewage or other wastes: only such amounts, whether alone or in combination with other substances or wastes, as shall not cause taste and odor difficulties in water supplies ~~which~~that cannot be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class;

(e) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies from taste and odor problems from chlorinated phenols;

(f) Total hardness: not greater than 100 mg/l as calcium ~~carbonate;~~carbonate ($CaCO_3$ or Ca + Mg);

(g) Total dissolved solids: not greater than 500 mg/l;

(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-II waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

~~(C) Manganese: 200 ug/l;~~

~~(D)~~(C) Nickel: 25 ug/l;

~~(E)~~(D) Nitrate nitrogen: 10 mg/l;

~~(F)~~(E) 2,4-D: ~~100 ug/l;~~70 ug/l;

~~(G)~~(F) 2,4,5-TP (Silvex): 10 ~~ug/l;~~ ug/l; and

~~(H)~~(G) Sulfates: 250 mg/l;

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-II waters:

(A) Aldrin: 0.05 ng/l;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/l;

(D) Carbon tetrachloride: 0.254 ug/l;

(E) Chlordane: 0.8 ng/l;

(F) Chlorinated benzenes: 488 ug/l;

(G) DDT: 0.2 ng/l;

(H) Dieldrin: 0.05 ng/l;

(I) Dioxin: 0.000005 ng/l;

(J) Heptachlor: 0.08 ng/l;

(K) Hexachlorobutadiene: 0.44 ug/l;

(L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;

(M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;

(N) Tetrachloroethylene: 0.7 ug/l;

(O) Trichloroethylene: 2.5 ~~ug/l;~~ ug/l; and

(P) Vinyl Chloride: 0.025 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. May 10, 1979;
Amended Eff. January 1, 2015; May 1, 2007; April 1, 2003; January 1, 1996; October 1, 1995.

15A NCAC 02B .0215 is amended with changes as published in 28:24 NCR 3004-3032 as follows:

15A NCAC 02B .0215 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-III WATERS

The following water quality standards apply to surface waters within water supply ~~waters~~ watersheds ~~that are~~ classified as WS-III. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section shall also apply to Class WS-III waters.

(1) The best usage of WS-III waters ~~are~~ shall be as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users where a more protective WS-I or WS-II classification is not feasible and any other best usage specified for Class C waters;

(2) The conditions related to the best usage ~~are~~ shall be as follows: waters of this class are protected as water supplies ~~which~~ that are ~~generally~~ in low to moderately developed watersheds and meet average watershed development density levels as specified in Sub-Items (3)(b)(i)(A), (3)(b)(i)(B), (3)(b)(ii)(A) and (3)(b)(ii)(B) of this Rule; discharges that qualify for a General Permit pursuant to 15A NCAC 2H .0127, trout farm discharges, recycle (closed loop) systems that only discharge in response to 10-year storm events, and other stormwater discharges ~~are~~ shall be allowed in the entire watershed; treated domestic wastewater discharges ~~are~~ shall be allowed in the entire watershed but no new domestic wastewater discharges ~~are~~ shall be allowed in the critical area; no new industrial wastewater discharges except non-process industrial discharges ~~are~~ shall be allowed in the entire watershed; the waters, following treatment required by the ~~Division of Environmental Health,~~Division, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, or food-processing purposes ~~which~~ that are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500. Sources of water pollution ~~which~~ that preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard. The Class WS-III classification may be used to protect portions of Class WS-IV water supplies. For reclassifications of these portions of WS-IV water supplies occurring after the July 1, 1992 statewide reclassification, the more protective classification requested by local governments shall be considered by the Commission when all local governments having jurisdiction in the affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the Commission acts to protect a watershed when one or more local governments has failed to adopt necessary protection measures;

(3) Quality standards applicable to Class WS-III Waters ~~are~~ shall be as follows:

(a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none shall be allowed except for those specified in Item (2) of this Rule and Rule .0104 of this Subchapter; none shall be allowed that have an adverse effect on human health or that are not ~~effectively~~ treated to the satisfaction of the Commission and in accordance with the

requirements of the ~~Division of Environmental Health, North Carolina Department of Environment and Natural Resources.~~Division. Any discharger may be required by the Commission to disclose all chemical constituents present or potentially present in their wastes and chemicals ~~which~~ that could be spilled or be present in runoff from their facility ~~which~~ that may have an adverse impact on downstream water quality. These facilities may be required to have spill and treatment failure control plans as well as perform special monitoring for toxic substances;

(b) Nonpoint Source and Stormwater Pollution: none that would adversely impact the waters for use as water supply or any other designated use;

(i) Nonpoint Source and Stormwater Pollution Control Criteria For Entire Watershed:

(A) Low Density Option: development density ~~must~~ shall be limited to either no more than two dwelling units of single family detached residential development per acre (or 20,000 square foot lot excluding roadway ~~right-of-way)~~ right-of-way), or 24 percent built-upon area for all other residential and non-residential development in watershed outside of the critical area; stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: if new development density exceeds the low density option requirements specified in Sub-Item (3)(b)(i)(A) of this Rule then development ~~must~~ shall control runoff from the first inch of rainfall; new residential and non-residential development shall not exceed 50 percent built-upon area;

(C) Land within the watershed shall be deemed compliant with the density requirements if the following condition is met: the density of all existing development at the time of reclassification does not exceed the density requirement when densities are averaged throughout the entire watershed area;

(D) Cluster development ~~is~~ shall be allowed on a project-by-project basis as follows:

(I) overall density of the project meets associated density or stormwater control requirements of this Rule;

(II) buffers meet the minimum statewide water supply watershed protection requirements;

(III) built-upon areas ~~are~~ shall be designed and located to minimize stormwater runoff impact to the receiving waters, minimize

concentrated stormwater flow, maximize the use of sheet flow through vegetated areas, and maximize the flow length through vegetated areas;

(IV) areas of concentrated development ~~are~~ shall be located in upland areas and away, to the maximum extent practicable, from surface waters and drainageways;

(V) remainder of tract to remain in vegetated or natural state;

(VI) area in the vegetated or natural state may be conveyed to a property owners association, a local government for preservation as a park or greenway, a conservation ~~organization~~ organization, or placed in a permanent conservation or farmland preservation easement;

(VII) a maintenance agreement for the vegetated or natural area shall be filed with the Register of Deeds; and

(VIII) cluster development that meets the applicable low density option requirements shall transport stormwater runoff from the development by vegetated conveyances to the maximum extent practicable;

(E) A maximum of 10 percent of each jurisdiction's portion of the watershed outside of the critical area as delineated on July 1, 1993 may be developed with new development projects and expansions of existing development of up to 70 percent built-upon surface area (the "10/70 option") in addition to the new development approved in compliance with the appropriate requirements of Sub-Item (3)(b)(i)(A) or Sub-Item (3)(b)(i)(B) of this Rule. For expansions to existing development, the existing built-upon surface area ~~is not~~shall not be counted toward the allowed 70 percent built-upon surface area. A local government having jurisdiction within the watershed may transfer, in whole or in part, its right to the ~~10 percent/70 percent~~10/70 option land area to another local government within the watershed upon submittal of a joint resolution and review by the Commission. When the water supply watershed is composed of public lands, such as National Forest land, local governments may count the public land acreage within the watershed outside of the critical area in figuring the acreage allowed under this provision. For local governments that do not choose to use the high density option in that WS-III watershed, each project ~~must,~~ shall, to the maximum extent practicable, minimize built-upon surface

area, direct stormwater runoff away from surface waters, and incorporate best management ~~practices~~ practices, as defined in Rule .0202 of this Section, to minimize water quality impacts. If the local government selects the high density development option within that WS-III watershed, then engineered stormwater controls ~~must~~ shall be employed for the new development;

(F) If local governments choose the high density development option ~~which~~ that requires engineered stormwater controls, then they shall assume ultimate responsibility for operation and maintenance of the required controls as outlined in Rule .0104 of this Subchapter;

(G) ~~Minimum~~ A minimum 100 foot vegetative buffer ~~is~~ shall be required for all new development activities that exceed the low density requirements as specified in Sub-Item (3)(b)(i)(A) and Sub-Item (3)(b)(ii)(A) of this Rule, otherwise a minimum 30 foot vegetative buffer for development ~~is~~ shall be required along all perennial waters indicated on the most recent versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies. Nothing in this Rule shall stand as a bar to artificial streambank or shoreline stabilization;

(H) No new development ~~is~~ shall be allowed in the buffer; water dependent structures, or other structures such as flag poles, ~~signs~~ signs, and security lights, which result in only de minimus increases in impervious area and public projects such as road crossings and greenways may be allowed where no practicable alternative exists. These activities shall minimize built-upon ~~surface area, direct runoff away from surface waters and maximize the utilization of BMPs;~~ surface area and avoid channelizing stormwater;

(I) No National Pollutant Discharge Elimination System (NPDES) ~~NPDES~~ permits shall be issued for landfills that discharge treated leachate;

(ii) Critical Area Nonpoint Source and Stormwater Pollution Control Criteria:

(A) Low Density Option: new development shall be limited to either no more than one dwelling unit of single family detached residential development per acre (or 40,000 square foot lot excluding roadway ~~right-of-way)~~ right-of-way), or 12 percent built-upon area for all other residential and non-residential development; stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: if new development exceeds the low density requirements specified in Sub-Item (3)(b)(ii)(A) of this Rule, then engineered stormwater controls ~~must~~ shall be used to control runoff from the first inch of rainfall; development shall not exceed 30 percent built-upon area;

(C) No new permitted sites for land application of residuals or petroleum contaminated soils ~~are~~ shall be allowed;

(D) No new landfills ~~are~~ shall be allowed;

(c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

(d) Odor producing substances contained in sewage, industrial wastes, or other wastes: only such amounts, whether alone or in combination with other substances or wastes, as shall not cause taste and odor difficulties in water supplies ~~which~~ that cannot be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class;

(e) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies from taste and odor problems from chlorinated phenols;

(f) Total hardness: not greater than 100 mg/l as calcium ~~carbonate;~~carbonate ($CaCO_3$ or Ca + Mg);

(g) Total dissolved solids: not greater than 500 mg/l;

(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-III waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

~~(C) Manganese: 200 ug/l;~~

~~(D)~~(C) Nickel: 25 ug/l;

~~(E)~~(D) Nitrate nitrogen: 10 mg/l;

~~(F)~~(E) 2,4-D: ~~100 ug/l;~~70 ug/l;

~~(G)~~(F) 2,4,5-TP (Silvex): 10 ~~ug/l;~~ ug/l; and

~~(H)~~(G) Sulfates: 250 mg/l;

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-III waters:

(A) Aldrin: 0.05 ng/l;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/l;

(D) Carbon tetrachloride: 0.254 ug/l;

(E) Chlordane: 0.8 ng/l;

(F) Chlorinated benzenes: 488 ug/l;

(G) DDT: 0.2 ng/l;

(H) Dieldrin: 0.05 ng/l;

(I) Dioxin: 0.000005 ng/l;

(J) Heptachlor: 0.08 ng/l;

(K) Hexachlorobutadiene: 0.44 ug/l;

(L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;

(M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;

(N) Tetrachloroethylene: 0.7 ug/l;

(O) Trichloroethylene: 2.5 ~~ug/l;~~ ug/l; and

(P) Vinyl Chloride: 0.025 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. September 9, 1979;
Amended Eff. January 1, 2015; May 1, 2007; April 1, 2003; January 1, 1996; October 1, 1995; October 1, 1989.

15A NCAC 02B .0216 is amended with changes as published in 28:24 NCR 3004-3032 as follows:

15A NCAC 02B .0216 FRESH SURFACE WATER QUALITY STANDARDS FOR WS-IV WATERS

The following water quality standards apply to surface waters within water supply ~~waters that are~~ watersheds classified as WS-IV. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section shall also apply to Class WS-IV waters.

(1) The best usage of WS-IV waters ~~are~~ shall be as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users where a more protective WS-I, WS-II or WS-III classification is not feasible and any other best usage specified for Class C waters;

(2) The conditions related to the best usage ~~are~~ shall be as follows: waters of this class are protected as water supplies ~~which~~ that are ~~generally~~ in moderately to highly developed watersheds or protected areas and meet average watershed development density levels as specified in Sub-Items (3)(b)(i)(A), (3)(b)(i)(B), (3)(b)(ii)(A) and (3)(b)(ii)(B) of this Rule; discharges ~~which~~ that qualify for a General Permit pursuant to 15A NCAC 02H .0127, trout farm discharges, recycle (closed loop) systems that only discharge in response to 10-year storm events, other stormwater ~~discharges~~ discharges, and domestic wastewater discharges shall be allowed in the protected and critical areas; treated industrial wastewater discharges ~~are~~ shall be allowed in the protected and critical areas; however, new industrial wastewater discharges in the critical area shall be required to meet the provisions of 15A NCAC 02B .0224(1)(b)(iv), (v) and (vii), and 15A NCAC 02B .0203; new industrial connections and expansions to existing municipal discharges with a pretreatment program pursuant to 15A NCAC 02H .0904 ~~are~~ shall be allowed; the waters, following treatment required by the ~~Division of Environmental Health,~~Division, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, or food-processing purposes ~~which~~ that are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500. Sources of water pollution ~~which~~ that preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard. The Class WS-II or WS-III classifications may be used to protect portions of Class WS-IV water supplies. For reclassifications of these portions of WS-IV water supplies occurring after the July 1, 1992 statewide reclassification, the more protective classification requested by local governments shall be considered by the Commission when all local governments having jurisdiction in the affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the Commission acts to protect a watershed when one or more local governments has failed to adopt necessary protection measures;

(3) Quality standards applicable to Class WS-IV Waters ~~are~~ shall be as follows:

(a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none shall be allowed except for those specified in Item (2) of this Rule and Rule .0104 of this Subchapter and none shall be allowed that ~~shall~~ have an adverse effect on human health

or that are not ~~effectively~~ treated to the satisfaction of the Commission and in accordance with the requirements of the ~~Division of Environmental Health, North Carolina Department of Environment and Natural Resources.~~Division. Any ~~dischargesdischargers~~ or industrial users subject to pretreatment standards may be required by the Commission to disclose all chemical constituents present or potentially present in their wastes and chemicals ~~which~~ that could be spilled or be present in runoff from their facility which may have an adverse impact on downstream water supplies. These facilities may be required to have spill and treatment failure control plans as well as perform special monitoring for toxic substances;

(b) Nonpoint Source and Stormwater Pollution: none shall be allowed that would adversely impact the waters for use as water supply or any other designated use.

(i) Nonpoint Source and Stormwater Pollution Control Criteria For Entire Watershed or Protected Area:

(A) Low Density Option: development activities ~~which~~ that require a Sedimentation/Erosion Control Plan in accordance with 15A NCAC 4 established by the North Carolina Sedimentation Control Commission or approved local government programs as delegated by the Sedimentation Control Commission shall be limited to no more than either: two dwelling units of single family detached development per acre (or 20,000 square foot lot excluding roadway ~~right-of-way)~~ right-of-way), or 24 percent built-upon on area for all other residential and non-residential development; or three dwelling units per ~~acre~~ acre, or 36 percent built-upon area for projects without curb and gutter street systems in the protected area outside of the critical area; stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: if new development activities ~~which~~ that require a Sedimentation/Erosion Control Plan exceed the low density requirements of Sub-Item (3)(b)(i)(A) of this ~~Rule~~ Rule, then development shall control the runoff from the first inch of rainfall; new residential and non-residential development shall not exceed 70 percent built-upon area;

(C) Land within the critical and protected area shall be deemed compliant with the density requirements if the following condition is met: the density of all existing development at the time of reclassification does not exceed the density requirement when densities are averaged throughout the entire area;

(D) Cluster development shall be allowed on a project-by-project basis as follows:

(I) overall density of the project meets associated density or stormwater control requirements of this Rule;

(II) buffers meet the minimum statewide water supply watershed protection requirements;

(III) built-upon areas ~~are~~ shall be designed and located to minimize stormwater runoff impact to the receiving waters, minimize concentrated stormwater flow, maximize the use of sheet flow through vegetated areas, and maximize the flow length through vegetated areas;

(IV) areas of concentrated development ~~are~~ shall be located in upland areas and away, to the maximum extent practicable, from surface waters and drainageways;

(V) remainder of tract to remain in vegetated or natural state;

(VI) area in the vegetated or natural state may be conveyed to a property owners association, a local government for preservation as a park or greenway, a conservation organization, or placed in a permanent conservation or farmland preservation easement;

(VII) a maintenance agreement for the vegetated or natural area shall be filed with the Register of Deeds; and

(VIII) cluster development that meets the applicable low density option requirements shall transport stormwater runoff from the development by vegetated conveyances to the maximum extent practicable;

(E) If local governments choose the high density development option ~~which~~ that requires engineered stormwater controls, then they shall assume ~~ultimate~~ responsibility for operation and maintenance of the required controls as outlined in Rule .0104 of this Subchapter;

(F) ~~Minimum~~A minimum 100 foot vegetative buffer ~~is~~ shall be required for all new development activities that exceed the low density option requirements as specified in Sub-Item (3)(b)(i)(A) or Sub-Item (3)(b)(ii)(A) of this Rule, otherwise a minimum 30 foot vegetative buffer for development shall be required along all perennial waters indicated on the most recent versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies;

(G) No new development shall be allowed in the buffer; water dependent structures, or other structures, such as flag poles, ~~signs~~ signs, and security lights, which result in only de minimus increases in impervious area and public projects such as road crossings and greenways may be allowed where no practicable alternative exists. These activities shall minimize built-upon ~~surface area, divert runoff away from surface waters and maximize the utilization of BMPs;~~ surface area and avoid channelizing stormwater;

(H) For local governments that do not use the high density option, a maximum of 10 percent of each jurisdiction's portion of the watershed outside of the critical area as delineated on July 1,. 1995 may be developed with new development projects and expansions to existing development of up to 70 percent built-upon surface area (the "10/70 option") in addition to the new development approved in compliance with the appropriate requirements of Sub-Item (3)(b)(i)(A) of this Rule. For expansions to existing development, the existing built-upon surface area shall not be counted toward the allowed 70 percent built-upon surface area. A local government having jurisdiction within the watershed may transfer, in whole or in part, its right to the ~~10 percent/70 percent~~ 10/70 option land area to another local government within the watershed upon submittal of a joint resolution for review by the Commission. When the designated water supply watershed area is composed of public land, such as National Forest land, local governments may count the public land acreage within the designated watershed area outside of the critical area in figuring the acreage allowed under this provision. Each project shall, to the maximum extent practicable, minimize built-upon surface area, direct stormwater runoff away from surface waters and incorporate best management ~~practices~~ practices, as defined in Rule .0202 of this Section, to minimize water quality impacts;

(ii) Critical Area Nonpoint Source and Stormwater Pollution Control Criteria:

(A) Low Density Option: new development activities ~~which~~ that require a Sedimentation/Erosion Control Plan in accordance with 15A NCAC 4 established by the North Carolina Sedimentation Control Commission or approved local government programs as delegated by the Sedimentation Control Commission shall be limited to no more than two dwelling units of single family detached development per acre (or

20,000 square foot lot excluding roadway ~~right-of-way)~~ right-of-way), or 24 percent built-upon area for all other residential and non-residential development; stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: if new development density exceeds the low density requirements specified in Sub-Item (3)(b)(ii)(A) of this Rule, engineered stormwater controls shall be used to control runoff from the first inch of rainfall; new residential and non-residential development shall not exceed 50 percent built-upon area;

(C) No new permitted sites for land application of residuals or petroleum contaminated soils shall be allowed;

(D) No new landfills shall be allowed;

(c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

(d) Odor producing substances contained in sewage, industrial wastes, or other wastes: only such amounts, whether alone or in combination with other substances or waste, as will not cause taste and odor difficulties in water supplies ~~which~~ that ~~can not~~ cannot be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class;

(e) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies from taste and odor problems due to chlorinated phenols shall be allowed. Specific phenolic compounds may be given a different limit if it is demonstrated not to cause taste and odor problems and not to be detrimental to other best usage;

(f) Total hardness shall not exceed 100 mg/l as calcium ~~carbonate;~~carbonate ($CaCO_3$ or Ca + Mg);

(g) Total dissolved solids shall not exceed 500 mg/l;

(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-IV waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

~~(C) Manganese: 200 ug/l;~~

~~(D)~~(C) Nickel: 25 ug/l;

~~(E)~~(D) Nitrate nitrogen: 10.0 mg/l;

~~(F)~~(E) 2,4-D: ~~100 ug/l;~~ 70 ug/l;

~~(G)~~(F) 2,4,5-TP (Silvex): 10 ~~ug/l;~~ ug/l; and

~~(H)~~(G) Sulfates: 250 mg/l;

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-IV waters:

(A) Aldrin: 0.05 ng/l;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/l;

(D) Carbon tetrachloride: 0.254 ug/l;

(E) Chlordane: 0.8 ng/l;

(F) Chlorinated benzenes: 488 ug/l;

(G) DDT: 0.2 ng/l;

(H) Dieldrin: 0.05 ng/l;

(I) Dioxin: 0.000005 ng/l;

(J) Heptachlor: 0.08 ng/l;

(K) Hexachlorobutadiene: 0.44 ug/l;

(L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;

(M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;

(N) Tetrachloroethylene: 0.7 ug/l;

(O) Trichloroethylene: 2.5 ug/l; and

(P) Vinyl Chloride: 0.025 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. February 1, 1986;
Amended Eff. January 1, 2015; May 1, 2007; April 1, 2003; June 1, 1996; October 1, 1995; August 1, 1995; June 1, 1994.

15A NCAC 02B .0218 is amended with changes as published in 28:24 NCR 3004-3032 as follows:

15A NCAC 02B .0218 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-V WATERS

The following water quality standards apply to surface waters within water supply ~~waters~~ watersheds ~~that are~~ classified as WS-V. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section shall also apply to Class WS-V waters.

(1) The best usage of WS-V waters ~~are~~ shall be as follows: waters that are protected as water supplies ~~which~~ that are ~~generally~~ upstream and draining to Class WS-IV waters; or waters previously used for drinking water supply purposes; or waters used by industry to supply their employees, but not municipalities or counties, with a raw drinking water supply source, although this type of use ~~is not~~ shall not be restricted to WS-V classification; and all Class C uses. The Commission may consider a more protective classification for the water supply if a resolution requesting a more protective classification is submitted from all local governments having land use jurisdiction within the affected watershed;

(2) The conditions related to the best usage ~~are~~ shall be as follows: waters of this class are protected water supplies; the waters, following treatment required by the ~~Division of Environmental Health,~~Division, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, or food-processing purposes ~~which~~ that are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500; no categorical restrictions on watershed development or wastewater discharges ~~are~~ shall be required, however, the Commission or its designee may apply management requirements for the protection of waters downstream of receiving waters (15A NCAC 02B .0203). Sources of water pollution ~~which~~ that preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard;

(3) Quality standards applicable to Class WS-V Waters ~~are~~ shall be as follows:

(a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none shall be allowed that have an adverse effect on human health or that are not ~~effectively~~ treated to the satisfaction of the Commission and in accordance with the requirements of the ~~Division of Environmental Health, North Carolina Department of Environment and Natural Resources.~~Division. Any discharges or industrial users subject to pretreatment standards ~~may~~ shall be required by the Commission to disclose all chemical constituents present or potentially present in their wastes and chemicals ~~which~~ that could be spilled or be present in runoff from their facility which may have an adverse impact on downstream water supplies. These facilities may be required to have spill and treatment failure control plans as well as perform special monitoring for toxic substances;

(b) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

(c) Nonpoint Source and Stormwater Pollution: none that would adversely impact the waters for use as water supply or any other designated use;

(d) Odor producing substances contained in sewage, industrial wastes, or other wastes: only such amounts, whether alone or in combination with other substances or waste, as will not cause taste and odor difficulties in water supplies ~~which~~ that ~~can not~~ cannot be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class;

(e) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies from taste and odor problems due to chlorinated phenols; specific phenolic compounds may be given a different limit if it is demonstrated not to cause taste and odor problems and not to be detrimental to other best usage;

(f) Total hardness: not greater than 100 mg/l as calcium ~~carbonate;~~carbonate ($CaCO_3$ or Ca + Mg);

(g) Total dissolved solids: not greater than 500 mg/l;

(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-V waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

~~(C) Manganese: 200 ug/l;~~

~~(D)~~(C) Nickel: 25 ug/l;

~~(E)~~(D) Nitrate nitrogen: 10.0 mg/l;

~~(F)~~(E) 2,4-D: ~~100 ug/l;~~70 ug/l;

~~(G)~~(F) 2,4,5-TP (Silvex): 10 ~~ug/l;~~ ug/l; and

~~(H)~~(G) Sulfates: 250 mg/l.

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-V waters:

(A) Aldrin: 0.05 ng/l;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/l;

(D) Carbon tetrachloride: 0.254 ug/l;

(E) Chlordane: 0.8 ng/l;

(F) Chlorinated benzenes: 488 ug/l;

(G) DDT: 0.2 ng/l;

(H) Dieldrin: 0.05 ng/l;

(I) Dioxin: 0.000005 ng/l;

(J) Heptachlor: 0.08 ng/l;

(K) Hexachlorobutadiene: 0.44 ug/l;

(L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;

(M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;

(N) Tetrachloroethylene: 0.7 ug/l;

(O) Trichloroethylene: 2.5 ~~ug/l;~~ ug/l; and

(P) Vinyl Chloride: 0.025 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. October 1, 1989;
Amended Eff. January 1, 2015; May 1, 2007; April 1, 2003; October 1, 1995.

15A NCAC 02B .0220 is amended with changes as published in 28:24 NCR 3004-3032 as follows:

15A NCAC 02B .0220 TIDAL SALT WATER QUALITY STANDARDS FOR CLASS SC WATERS

General. The water quality standards for all tidal salt waters ~~are~~ shall be the basic standards applicable to Class SC waters. Additional and more stringent standards applicable to other specific tidal salt water classifications are specified in Rules .0221 and .0222 of this Section. Action Levels, for purposes of National Pollutant Discharge Elimination System (NPDES)[~~NPDES~~] permitting, are specified in Item (20) of this Rule.

(1) Best Usage of Waters: any usage except primary recreation or shellfishing for market purposes; usages include aquatic life propagation and maintenance of biological integrity (including fishing, fish and functioning ~~PNAs),~~ Primary Nursery Areas (PNAs)), wildlife, and secondary recreation;

(2) Conditions Related to Best Usage: the waters shall be suitable for aquatic life propagation and maintenance of biological integrity, wildlife, and secondary recreation. Any source of water pollution ~~which~~ that precludes any of these uses, including their functioning as PNAs, on either a short-term or a long-term basis shall be considered to be violating a water quality standard;

~~(3) Quality standards applicable to all tidal salt waters:~~

~~(a)~~(3) Chlorophyll a (corrected): not greater than 40 ug/l in sounds, estuaries, and other waters subject to growths of macroscopic or microscopic vegetation. The Commission or its designee may prohibit or limit any discharge of waste into surface waters if, in the opinion of the Director, the surface waters experience or the discharge would result in growths of microscopic or macroscopic vegetation such that the standards established pursuant to this Rule would be violated or the intended best usage of the waters would be impaired;

(4) Cyanide: 1 ug/l;

~~(b)~~(5) Dissolved oxygen: not less than 5.0 mg/l, except that swamp waters, poorly flushed tidally influenced streams or embayments, or estuarine bottom waters may have lower values if caused by natural conditions;

(6) Enterococcus, including *Enterococcus faecalis*, *Enterococcus faecium*, *Enterococcus avium* and *Enterococcus gallinarium*: not to exceed a geometric mean of 35 enterococci per 100 ml based upon a minimum of five samples within any consecutive 30 days. [~~In accordance with 33 U.S.C. 1313 (Federal Water Pollution Control Act) for~~]For purposes of beach monitoring and notification, "Coastal Recreational Waters Monitoring, Evaluation and Notification" regulations (15A NCAC 18A .3400), available free of charge at: http://www.ncoah.com/ , are hereby incorporated by reference including any subsequent amendments;

~~(c)~~(7) Floating solids, settleable solids, or sludge deposits: only such amounts attributable to sewage, industrial ~~wastes~~ wastes, or other wastes, as shall not make the waters unsafe or unsuitable for aquatic life and wildlife, or impair the waters for any designated uses;

~~(d)~~(8) Gases, total dissolved: not greater than 110 percent of saturation;

~~(e) Enterococcus, including *Enterococcus faecalis*, *Enterococcus faecium*, *Enterococcus avium* and *Enterococcus gallinarium*: not to exceed a geometric mean of 35 enterococci per 100 ml based upon a minimum of five samples within any consecutive 30 days. In accordance with 33 U.S.C. 1313 (Federal Water Pollution Control Act) for purposes of beach monitoring and notification, "Coastal Recreational Waters Monitoring, Evaluation and Notification" regulations (15A NCAC 18A .3400) are hereby incorporated by reference including any subsequent amendments;~~

(9) Metals:

(a) With the exception of mercury and selenium, tidal salt water quality standards for metals shall be based upon measurement of the dissolved fraction of the metals. Mercury and [~~Selenium~~] selenium [~~must~~] shall be based upon measurement of the total recoverable [~~metal.~~] metal; [~~Alternative site-specific standards can be developed where studies are designed according to the "Water Quality Standards Handbook: Second Edition" published by the US Environmental Protection Agency (EPA 823-B-94-005a) hereby incorporated by reference, including any subsequent amendments;~~]

(b) Compliance with acute instream metals standards shall only be evaluated using an average of two or more samples collected within one hour. Compliance with chronic instream metals standards shall only be evaluated using averages of a minimum of four samples taken on consecutive days, or as a 96-hour average;

[~~(c) With the exception of mercury and selenium, demonstrated attainment of the applicable aquatic life use in a waterbody will take precedence over the application of the aquatic life criteria established for metals associated with these uses. An instream exceedence of the numeric criterion for metals shall not be considered to have caused an adverse impact to the instream aquatic community if biological monitoring has demonstrated attainment of biological integrity;~~]

(c) Metals criteria [~~will~~]shall be used for proactive environmental management. An instream exceedence of the numeric criterion for metals shall not be considered to have caused an adverse impact to the aquatic community without biological confirmation and a comparison of all available monitoring data and applicable water quality standards. This weight of evidence evaluation [~~will~~]shall take into account data quality and the overall confidence in how representative the sampling is of conditions in the waterbody segment before an assessment of aquatic life use attainment, or non-attainment, is made by the Division. Recognizing the synergistic and antagonistic complexities of other water quality variables on the actual toxicity of metals, with the exception of mercury and selenium, biological monitoring [~~will~~]shall be used to validate, by direct measurement, whether or not the aquatic life use is supported.

(d) Acute and chronic tidal salt water quality metals standards are as follows:

(i) Arsenic, acute: WER· 69 ug/l;

(ii) Arsenic, chronic: WER· 36 ug/l;

(iii) Cadmium, acute: WER· 40 ug/l;

(iv) Cadmium, chronic: WER· 8.8 ug/l;

(v) Chromium VI, acute: WER· 1100 ug/l;

(vi) Chromium VI, chronic: WER· 50 ug/l;

(vii) Copper, acute: WER· 4.8 ug/l;

(viii) Copper, chronic: WER· 3.1 ug/l;

(ix) Lead, acute: WER· 210 ug/l;

(x) Lead, chronic: WER· 8.1 ug/l;

(xi) Mercury, total recoverable, chronic: 0.025 ug/l;

(xii) Nickel, acute: WER· 74 ug/l;

(xiii) Nickel, chronic: WER· 8.2 ug/l;

(xiv) Selenium, total recoverable, chronic: 71 ug/l;

(xv) Silver, acute: WER· 1.9 ug/l;

(xvi) Silver, chronic: WER· 0.1 ug/l;

(xvii) Zinc, acute: WER· 90 [ug/l;]ug/l; and

(xviii) Zinc, chronic: WER· 81 ug/l;

With the exception of mercury and selenium, acute and chronic tidal saltwater quality aquatic life standards for metals listed above apply to the dissolved form of the metal and apply as a function of the pollutant's water effect ratio (WER). A WER [~~is a factor that~~] expresses the difference between the measures of the toxicity of a substance in laboratory waters and the toxicity in site water. The WER [~~is~~]shall be assigned a value equal to one [~~(1)~~] unless any person demonstrates to the [~~Department's~~]Division's satisfaction in a permit proceeding that another value is [~~appropriately~~] developed in accordance with the "Water Quality Standards Handbook: Second Edition" published by the US Environmental Protection Agency (EPA-823-B-12-002), free of charge, at http://water.epa.gov/scitech/swguidance/standards/handbook/, hereby incorporated by reference including any subsequent amendments. Alternative site-specific standards [~~can~~] may also be developed when any person submits values that demonstrate to the Commissions' satisfaction that they were derived in accordance with the "Water Quality Standards Handbook: Second Edition, Recalculation Procedure or the Resident Species [~~Procedure".~~]Procedure", hereby incorporated by reference including subsequent amendments at http://water.epa.gov/scitech/swguidance/standards/handbook/.

This material is available free of charge;

~~(f)~~(10) Oils, deleterious substances, ~~colored~~ colored, or other wastes: only such amounts as shall not render the waters injurious to public health, secondary ~~recreation~~ recreation, ~~or~~ aquatic ~~life~~ life, and wildlife or adversely affect the palatability of fish,

aesthetic ~~quality~~ quality, or impair the waters for any designated uses. For the purpose of implementing this Rule, oils, deleterious substances, ~~colored~~ colored, or other wastes shall include ~~but not be limited to~~ substances that cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines pursuant to 40 CFR 110.3;

(11) Pesticides:

(a) Aldrin: 0.003 ug/l;

(b) Chlordane: 0.004 ug/l;

(c) DDT: 0.001 ug/l;

(d) Demeton: 0.1 ug/l;

(e) Dieldrin: 0.002 ug/l;

(f) Endosulfan: 0.009 ug/l;

(g) Endrin: 0.002 ug/l;

(h) Guthion: 0.01 ug/l;

(i) Heptachlor: 0.004 ug/l;

(j) Lindane: 0.004 ug/l;

(k) Methoxychlor: 0.03 ug/l;

(l) Mirex: 0.001 ug/l;

(m) Parathion: 0.178 [ug/l;]ug/l; and

(n) Toxaphene: 0.0002 ug/l;

~~(g)~~(12) pH: shall be normal for the waters in the area, which ~~generally shall~~ range between 6.8 and ~~8.5~~ 8.5, except that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;

~~(h)~~(13) Phenolic compounds: only such levels as shall not result in fish-flesh tainting or impairment of other best usage;

(14) Polychlorinated biphenyls: (total of all PCBs and congeners identified) 0.001 ug/l;

~~(i)~~(15) Radioactive substances:

~~(i)~~(a) Combined radium-226 and radium-228: The ~~maximum~~ average annual activity level (based on at least one sample collected per quarter)~~four samples collected quarterly)~~ for combined radium-226, and radium-228 shall not exceed five picoCuries per liter;

~~(ii)~~(b) Alpha Emitters. The average annual gross alpha particle activity (including radium-226, but excluding radon and uranium) shall not exceed 15 picoCuries per liter;

~~(iii)~~(c) Beta Emitters. The ~~maximum~~ average annual activity level (based on at least one sample collected per quarter)~~four samples collected quarterly)~~ for strontium-90 shall not exceed eight picoCuries per liter; nor shall the average annual gross beta particle activity (excluding potassium-40 and other naturally occurring ~~radio-nuclides)~~ radionuclides exceed 50 picoCuries per liter; nor shall the ~~maximum~~ average annual activity level for tritium exceed 20,000 picoCuries per liter;

~~(j)~~(16) Salinity: changes in salinity due to hydrological modifications shall not result in removal of the functions of a PNA. Projects that are determined by the Director to result in modifications of salinity such that functions of a PNA are impaired ~~will~~ shall be required to employ water management practices to mitigate salinity impacts;

~~(k)~~(17) Temperature: shall not be increased above the natural water temperature by more than 0.8 degrees C (1.44 degrees F) during the months of June, July, and August nor more than 2.2 degrees C (3.96 degrees F) during other months and in no cases to exceed 32 degrees C (89.6 degrees F) due to the discharge of heated liquids;

(18) Trialkyltin compounds: 0.007 ug/l expressed as tributyltin;

~~(l)~~(19) Turbidity: the turbidity in the receiving water shall not exceed 25 Nephelometric Turbidity Units (NTU); ~~NTU;~~ if turbidity exceeds this level due to natural background conditions, the existing turbidity level shall not be increased. Compliance with this turbidity standard can be met when land management activities employ Best Management Practices (BMPs) [as defined by Rule .0202 of this Section] recommended by the Designated Nonpoint Source Agency (as defined by Rule .0202 of this Section). BMPs ~~must~~ shall be in full compliance with all specifications governing the proper design, installation, ~~operation~~ operation, and maintenance of such BMPs;

~~(m) Toxic substances: numerical water quality standards (maximum permissible levels) to protect aquatic life applicable to all tidal saltwaters:~~

~~(i) Arsenic, total recoverable: 50 ug/l;~~

~~(ii) Cadmium: 5.0 ug/l; attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators;~~

~~(iii) Chromium, total: 20 ug/l;~~

~~(iv) Cyanide: 1.0 ug/l;~~

~~(v) Mercury: 0.025 ug/l;~~

~~(vi) Lead, total recoverable: 25 ug/l; collection of data on sources, transport and fate of lead shall be required as part of the toxicity reduction evaluation for~~

~~dischargers that are out of compliance with whole effluent toxicity testing requirements and the concentration of lead in the effluent is concomitantly determined to exceed an instream level of 3.1 ug/l from the discharge;~~

~~(vii) Nickel: 8.3 ug/l; attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators;~~

~~(viii) Pesticides:~~

~~(A) Aldrin: 0.003 ug/l;~~

~~(B) Chlordane: 0.004 ug/l;~~

~~(C) DDT: 0.001 ug/l;~~

~~(D) Demeton: 0.1 ug/l;~~

~~(E) Dieldrin: 0.002 ug/l;~~

~~(F) Endosulfan: 0.009 ug/l;~~

~~(G) Endrin: 0.002 ug/l;~~

~~(H) Guthion: 0.01 ug/l;~~

~~(I) Heptachlor: 0.004 ug/l;~~

~~(J) Lindane: 0.004 ug/l;~~

~~(K) Methoxychlor: 0.03 ug/l;~~

~~(L) Mirex: 0.001 ug/l;~~

~~(M) Parathion: 0.178 ug/l;~~

~~(N) Toxaphene: 0.0002 ug/l;~~

~~(ix) Polychlorinated biphenyls: (total of all PCBs and congeners identified) 0.001 ug/l;~~

~~(x) Selenium: 71 ug/l;~~

~~(xi) Trialkyltin compounds: 0.007 ug/l expressed as tributyltin.~~

~~(4)~~(20) Action Levels for Toxic ~~Substances:~~Substances Applicable to NPDES Permits:

(a) ~~Copper:~~Copper, dissolved, chronic: ~~3 ug/l;~~3.1 ug/l;

(b) ~~Silver:~~Silver, dissolved, chronic: 0.1 ug/l;

(c) ~~Zinc:~~Zinc, dissolved, chronic: ~~86 ug/l;~~81 ug/l

If the [~~chronic~~] ~~Action Levels~~ action levels for any of the substances listed in this ~~Subparagraph~~Item (which are generally not bioaccumulative and have variable toxicity to aquatic life because of chemical form, solubility, stream ~~characteristics~~ characteristics, or associated waste characteristics) ~~are~~ shall be determined by the waste load allocation to be exceeded in a receiving water by a discharge under the ~~specified low~~7Q10 flow criterion for toxic ~~substances (Rule .0206 in this Section),~~substances, the discharger shall ~~be required to~~ monitor the chemical or biological effects of the discharge; efforts shall be made by all dischargers to reduce or eliminate these substances from their effluents. Those substances for which ~~Action Levels~~ action levels are listed in this ~~Subparagraph~~Item ~~may~~shall be limited as appropriate in the NPDES permit if sufficient information (to be determined for metals by measurements of that portion of the dissolved instream concentration of the ~~Action Level~~ action level parameter attributable to a specific NPDES permitted discharge) exists to indicate that any of those substances may be a causative factor resulting in toxicity of the effluent. ~~NPDES permit limits may be based on translation of the toxic form to total recoverable metals. Studies used to determine the toxic form or translators must be designed according to: "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.~~

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. October 1, 1995;
Amended Eff. January 1, 2015; May 1, 2007; August 1, 2000.