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Rulemaking Hearing Rule(s) Filing Form

Rulemaking Hearing Rules are rules filed after and as a result of a rulemaking hearing. T.C.A. § 4-5-205

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Revision Type (check all that apply):

X Amendment
___ New
___ Repeal

Rule(s) Revised (**ALL** chapters and rules contained in filing must be listed here. If needed, copy and paste additional tables to accommodate multiple chapters. Please enter only **ONE** Rule Number/Rule Title per row)

Chapter Number	**Chapter Title**
1200-04-03	General Water Quality Criteria
Rule Number	**Rule Title**
1200-04-03-.01	Tennessee Water Quality Control Board
1200-04-03-.02	General Considerations
1200-04-03-.03	Criteria For Water Uses
1200-04-03-.04	Definitions
1200-04-03-.05	Interpretation of Criteria
1200-04-03-.06	Antidegradation Statement
1200-04-03-.07	Ground Water Classification
1200-04-03-.08	Criteria
1200-04-03-.09	Site Specific Impaired Classification Petition Process
1200-04-03-.10	Remediation of Ground Water or Perched Water
1200-04-03-.11	Classified Site Specific Impaired Ground Water and Respective Criteria
1200-04-03-.12	Reporting Requirement

Chapter Number	**Chapter Title**
1200-04-04	Use Classifications For Surface Waters
Rule Number	**Rule Title**
1200-04-04-.01	Memphis Area Basin
1200-04-04-.02	Hatchie River Basin
1200-04-04-.03	Obion-Forked Deer Basin
1200-04-04-.04	Tennessee River Basin – Western Valley
1200-04-04-.05	Duck River Basin
1200-04-04-.06	Elk River Basin (including Shoal Creek)

1200-04-04-.07	Lower Tennessee River Basin (including Conasauga Basin)
1200-04-04-.08	Upper Tennessee River Basin
1200-04-04-.09	Clinch River Basin
1200-04-04-.10	French Broad River Basin
1200-04-04-.11	Holston River Basin
1200-04-04-.12	Lower Cumberland River Basin
1200-04-04-.13	Upper Cumberland River Basin
1200-04-04-.14	Barren River Watershed

(Place substance of rules and other info here. Statutory authority must be given for each rule change. For information on formatting rules go to http://state.tn.us/sos/rules/1360/1360.htm)

Chapter 1200-04-03
General Water Quality Criteria

Amendments

Chapter 1200-04-03 General Water Quality Criteria is deleted in its entirety and replaced with the following so that, as amended, Chapter 1200-04-03 shall read as follows:

Chapter 1200-04-03
General Water Quality Criteria

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1200-04-03-.01 Tennessee Board of Water Quality, Oil and Gas

The Water Quality Control Act, T.C.A., § 69-3-101, et seq., makes it the duty of the Board of Water Quality, Oil and Gas to study and investigate all problems concerned with the pollution of the Waters of the State and with its prevention, abatement, and control; and to establish such standards of quality for any Waters of the State in relation to their reasonable and necessary use as the Board shall deem to be in the public interest; and establish general policies relating to pollution as the Board shall deem necessary to accomplish the purposes of the Act. The following general considerations and criteria shall be used to determine the permissible conditions of waters with respect to pollution and preventative or corrective measures required to control pollution in various waters or in different sections of the same waters.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.02 General Considerations

(1) Tennessee water quality standards shall consist of the General Water Quality Criteria and the Antidegradation Statement found in Rule 1200-04-03, and the Use Classifications for Surface Waters found in Rule 1200-04-04.

(2) Waters have many uses which in the public interest are reasonable and necessary. Such uses include: sources of water supply for domestic and industrial purposes; propagation and maintenance of fish and other aquatic life; recreation in and on the waters including the safe consumption of fish and shellfish; livestock watering and irrigation; navigation; generation of power; propagation and maintenance of

wildlife; and the enjoyment of scenic and aesthetic qualities of waters.

(3) The rigid application of uniform water quality is not desirable or reasonable because of the varying uses of such waters. The assimilative capacity of a stream for sewage and waste varies depending upon various factors and including the following: volume of flow, depth of channel, the presence of falls or rapids, rate of flow, temperature, natural characteristics, and the nature of the stream.

(4) In order to permit the reasonable and necessary uses of the Waters of the State, existing pollution should be corrected as rapidly as practicable, and future pollution prevented through the best available technology economically achievable or that greater level of technology necessary to meet water quality standards; i.e., modeling and stream survey assessments, treatment plants or other control measures.

(5) Since all Waters of the State are classified for more than one use, the most stringent criteria will be applicable. In cases where criteria for protection of more than one use apply at different stream flows (e.g., aquatic life versus recreation), the most protective will also be applicable.

(6) Waters identified as wet weather conveyances according to the definition found in Rule 1200-04-03-.04, shall be protective of humans and wildlife that may come in contact with them and shall not adversely affect the quality of downstream waters. Applicable water quality standards will be maintained downstream of wet weather conveyances.

(7) Where general water quality criteria are applied on a regional, ecoregional, or subecoregional basis, these criteria will be considered to apply to a stream if eighty percent of its watershed or catchment is contained within the unit upon which the criterion is based.

(8) All fish and aquatic life metals criteria are expressed as total recoverable, except cadmium, copper, lead, nickel, silver, and zinc which are expressed as dissolved. Translators will be used to convert the dissolved fraction into a total recoverable permit limit. One of three approaches to metals translation will be used: (1) translator is the same as the conversion factor, (2) translator is based on relationships derived from STORET data, (3) a site-specific translator is developed. Where available, a site-specific translator is preferred. For assessing whether criteria for cadmium, copper, lead, nickel, silver, and zinc are exceeded by ambient water quality conditions, the dissolved criteria will also be translated in order to allow direct comparison to the ambient data, if total recoverable.

(9) Site-specific criteria studies may be conducted on any appropriate fish and aquatic life criteria.

(a) Site-specific criteria studies based on a Water Effects Ratio (WER) calculated from the documented toxicity of a parameter in the stream in which it will be introduced may supersede the adopted criteria at a site. The Division shall approve a site-specific criteria developed by others provided that the WER methodology [Interim Guidance on Determination and Use of Water-effect Ratios for Metals (EPA-823-B-94-001)] is used, both the study plan and results are approved by the department, and the U.S. Environmental Protection Agency has concurred with the final site specific criterion value(s).

(b) Any site specific criterion based on methodologies other than the WER methodology which recalculate specific criterion, such as the Resident Species Method or the Recalculation Method, must be adopted as a revision to Tennessee water quality standards into Chapter 1200-04-03, and following EPA approval, can be used for Clean Water Act purposes.

References on this subject include, but are not limited to: Technical Support Document for Water Quality-based Toxics Control (EPA - 505/2-90-001); Technical Guidance Manual for Performing Waste Load Allocations: Book VIII (EPA/600/6-85/002a/002b/002c); MinteqA2, An Equilibrium Metal Speciation Model (EPA/600/3-87/012); Water Quality Standards Handbook, Second Edition (EPA-823-B-93-002); The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criteria (EPA-823-B-96-007); Interim Guidance on Determination and Use of Water-effect Ratios for Metals (EPA-823-B-94-001).

(10) Interpretation and application of narrative criteria shall be based on available scientific literature and EPA guidance and regulations.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.03 Criteria For Water Uses

(1) The criteria for the use of Domestic Water Supply are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not appreciably impair the usefulness of the water as a source of domestic water supply.

(d) Total Dissolved Solids - The total dissolved solids shall at no time exceed 500 mg/l.

(e) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water as a source of domestic water supply.

(f) Turbidity or Color - There shall be no turbidity or color in amounts or characteristics that cannot be reduced to acceptable concentrations by conventional water treatment processes (See definition).

(g) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet or mid-depth, whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(h) Coliform - The concentration of the E. coli group shall not exceed 630 per 100 ml as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purpose of determining the geometric mean, individual samples having an E. coli group concentration of less than 1 per 100 ml shall be considered as having a concentration of 1 per 100 ml.

(i) Taste or Odor - The waters shall not contain substances which will result in taste or odor that prevent the production of potable water by conventional water treatment processes.

(j) Toxic Substances - The waters shall not contain toxic substances, whether alone or in combination with other substances, which will produce toxic conditions that materially affect the health and safety of man or animals, or impair the safety of conventionally treated water supplies. Available references include, but are not limited to: Quality Criteria for Water (Section 304(a) of Public Law 92-500 as amended); Federal Regulations under Section 307 of Public Law 92-500 as amended; and Federal Regulations under Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act, (Public Law 93-523). Limits set for some of the most commonly occurring toxic substances are as follows:

Compound	Criteria (µg/L)	Compound	Criteria (µg/L)
Antimony	6	Diquat	20
Arsenic	10	Endothall	100
Beryllium	4	Glyphosate	700
Barium	2000	Hexachlorobenzene	1
Cadmium	5	Hexachlorocyclopentadiene	50
Chromium, total	100	Oxamyl (Vydate)	200
Lead	5	Picloram	500
Cyanide (as free cyanide)	200	Simazine	4

Mercury	2	2,3,7,8 TCDD (Dioxin)	0.00003
Nickel	100	Benzene	5
Selenium	50	Carbon tetrachloride	5
Thallium	2	1,2-Dichloroethane	5
Alachlor	2	1,1-Dichloroethylene	7
Atrazine	3	1,1,1-Trichloroethane	200
Carbofuran	40	Trichloroethylene	5
Chlordane	2	Vinyl chloride	2
Dibromo chloropropane	0.2	para-Dichlorobenzene	75
2,4 Dichlorophenoxyacetic Acid	70	cis 1,2-Dichloroethylene	70
Ethylene dibromide	0.05	1,2-Dichloropropane	5
Heptachlor	0.4	Ethyl benzene	700
Heptachlor epoxide	0.2	Monochlorobenzene	100
Lindane	0.2	ortho-Dichlorobenzene	600
Methoxychlor	40	Styrene	100
Polychlorinated biphenyls	0.5	Tetrachloroethylene	5
2,4,5 Trichlorophenoxyprioponic acid	50	Toluene	1000
		trans 1,2-Dichloroethylene	100
Pentachlorophenol	1	Xylenes, total	10000
Benzo(a)pyrene	0.2	Dichloromethane	5
Dalapon	200	1,2,4-Trichlorobenzene	70
Di(2-ethylhexyl) adipate	400	1,1,2-Trichloroethane	5
Di(2-ethylhexyl) phthalate	6	Endrin	2.0
Dinoseb	7	Toxaphene	3
		Nitrate	10000

(k) Other Pollutants - The waters shall not contain other pollutants in quantities that may be detrimental to public health or impair the usefulness of the water as a source of domestic water supply.

(2) The criteria for the use of Industrial Water Supply are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not appreciably impair the usefulness of the water as a source of industrial water supply.

(d) Total Dissolved Solids - The total dissolved solids shall at no time exceed 500 mg/l.

(e) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water as a source of industrial water supply.

(f) Turbidity or Color - There shall be no turbidity or color in amounts or characteristics that cannot be reduced to acceptable concentrations by conventional water treatment processes.

(g) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet or mid- depth, whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(h) Taste or Odor - The waters shall not contain substances which will result in taste or odor that would prevent the use of the water for industrial processing.

(i) Toxic Substances - The waters shall not contain toxic substances whether alone or in combination with other substances, which will adversely affect industrial processing.

(j) Other Pollutants - The waters shall not contain other pollutants in quantities that may adversely affect the water for industrial processing.

(3) The criteria for the use of Fish and Aquatic Life are the following.

(a) Dissolved Oxygen - The dissolved oxygen shall not be less than 5.0 mg/l with the following exceptions.

1. In streams identified as trout streams, including tailwaters, dissolved oxygen shall not be less than 6.0 mg/L.

2. The dissolved oxygen concentration of trout waters designated as supporting a naturally reproducing population shall not be less than 8.0 mg/L. (Tributaries to trout streams or naturally reproducing trout streams should be considered to be trout streams or naturally reproducing trout streams, unless demonstrated otherwise. Additionally, all streams within the Great Smoky Mountains National Park should be considered naturally reproducing trout streams.)

3. In wadeable streams in subecoregion 73a, dissolved oxygen levels shall not be less than a daily average of 5.0 mg/L with a minimum dissolved oxygen level of 4.0 mg/L.

4. The dissolved oxygen level of streams in ecoregion 66 (Blue Ridge Mountains) not designated as naturally reproducing trout streams shall not be less than 7.0 mg/L.

Substantial and/or frequent variations in dissolved oxygen levels, including diurnal fluctuations, are undesirable if caused by man-induced conditions. Diurnal fluctuations shall not be substantially different than the fluctuations noted in reference streams in that region.

In lakes and reservoirs, the dissolved oxygen concentrations shall be measured at mid-depth in waters having a total depth of ten feet or less, and at a depth of five feet in waters having a total depth of greater than ten feet and shall not be less than 5.0 mg/L.

(b) pH - The pH value shall not fluctuate more than 1.0 unit over a period of 24 hours and shall not be outside the following ranges: 6.0 – 9.0 in wadeable streams and 6.5 – 9.0 in larger rivers, lakes, reservoirs, and wetlands.

(c) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life.

(d) Turbidity, Total Suspended Solids, or Color - There shall be no turbidity, total suspended solids, or color in such amounts or of such character that will materially affect fish and aquatic life. In wadeable streams, suspended solid levels over time should not be substantially different than conditions found in reference streams.

(e) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of recognized trout waters shall not exceed 20°C. There shall be no abnormal temperature changes that may affect aquatic life unless caused by natural conditions. The temperature in flowing streams shall be measured at mid-depth.

The temperature of impoundments where stratification occurs will be measured at mid-depth in the epilimnion (see definition in 1200-04-03-.04) for warm water fisheries and mid-depth in the hypolimnion (see definition in 1200-04-03-.04) for cold water fisheries. In the case of large impoundments (100 acres or larger) subject to stratification and recognized as trout waters, the temperature of the hypolimnion shall not exceed 20°C.

A successful demonstration as determined by the state conducted for thermal discharge limitations under Section 316(a) of the Clean Water Act, (33 U.S.C. §1326), shall constitute compliance with this section.

(f) Taste or Odor - The waters shall not contain substances that will impart unpalatable flavor to fish or result in noticeable offensive odors in the vicinity of the water or otherwise interfere with fish or aquatic life. References include, but are not limited to: Quality Criteria for Water (section 304(a) of Public Law 92-500 as amended).

(g) Toxic Substances - The waters shall not contain substances or a combination of substances including disease - causing agents which, by way of either direct exposure or indirect exposure through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), physical deformations, or restrict or impair growth in fish or aquatic life or their offspring. References on this subject include, but are not limited to: Quality Criteria for Water (Section 304(a) of Public Law 92-500 as amended); Federal Regulations under Section 307 of Public Law 92-500 as amended. The following criteria are for the protection of fish and aquatic life:

Compound	Criterion Maximum Concentration µg/l (CMC)	Criterion Continuous Concentration µg/l (CCC)
Arsenic (III)*	340	150
Cadmium**	2.0	0.25
Chromium, III**	570	74
Chromium, VI*	16	11
Copper**	13	9.0
Lead**	65	2.5
Mercury* (b)	1.4	0.77
Nickel**	470	52
Selenium	20	5
Silver**	3.2	---
Zinc**	120	120
Cyanide***	22	5.2
Chlorine (TRC)	19	11
Pentachlorophenol ****	19	15
Aldrin	3.0	---
g-BHC – Lindane (b)	0.95	---
Chlordane (b)	2.4	0.0043
4-4'-DDT (b)	1.1	0.001
Demeton	----	0.1
Diazinon	0.1	0.1
Dieldrin (b)	0.24	0.056
a-Endosulfan	0.22	0.056
b-Endosulfan	0.22	0.056
Endrin	0.086	0.036
Guthion	----	0.01
Heptachlor	0.52	0.0038
Heptachlor epoxide	0.52	0.0038
Malathion	----	0.1
Methoxyclor	----	0.03
Mirex (b)	----	0.001
Nonylphenol	28.0	6.6
Parathion	0.065	0.013
PCBs, total (b)	---	0.014
Toxaphene (b)	0.73	0.0002
Tributyltin (TBT)	0.46	0.072

(b) Bioaccumulative parameter.

* Criteria for these metals are expressed as dissolved.

** Criteria for these metals are expressed as dissolved and are a function of total hardness (mg/L). Hardness-dependent metals criteria may be calculated from the following (values displayed above correspond to a total hardness of 100 mg/l and may have been rounded):

CMC (dissolved) = exp{mA[ln(hardness)]+bA } (CF)

CCC (dissolved) = exp{mC [ln(hardness)]+bC} (CF)

Chemical	MA	bA	MC	BC	Freshwater Conversion Factors (CF)	
					CMC	CCC
Cadmium	1.0166	-3.924	0.7409	-4.719	1.136672-[(ln hardness)(0.041838)]	1.101672-[(ln hardness)(0.041838)]
Chromium III	0.8190	3.7256	0.8190	0.6848	0.316	0.860
Copper	0.9422	-1.700	0.8545	-1.702	0.960	0.960
Lead	1.273	-1.460	1.273	-4.705	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]
Nickel	0.8460	2.255	0.8460	0.0584	0.998	0.997
Silver	1.72	-6.59			0.85	
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

If criteria are hardness-dependent, the Criterion Maximum Concentration (CMC) and Criterion Continuous Concentration (CCC) shall be based on the actual stream hardness. When an ambient hardness of less than 25 mg/l is used to establish criteria for cadmium or lead, the hardness dependent conversion factor (CF) shall not exceed one. When ambient hardness is greater than 400 mg/l, criteria shall be calculated according to one of the following two options: (1) calculate the criterion using a default Water Effects Ratio (WER) of 1.0 and a hardness of 400 mg/l in the hardness based equation; or (2) calculate the criterion using a WER and the actual ambient hardness of the surface water in the hardness based equation. For information concerning metals translation and site-specific criteria, see 1200-04-03-.02(9).

*** If Standard Methods 4500-CN I (Weak Acid Dissociable), 4500-CN G (Cyanides Amenable to Chlorination after Distillation), or OIA-1677 are used, this criterion may be applied as free cyanide.

**** Criteria for pentachlorophenol are expressed as a function of pH. Values displayed above correspond to a pH of 7.8 and are calculated as follows:

CMC = exp(1.005(pH) - 4.869) CCC = exp(1.005(pH) - 5.134)

(h) Other Pollutants - The waters shall not contain other pollutants that will be detrimental to fish or aquatic life.

(i) Iron – The waters shall not contain iron at concentrations that cause toxicity or in such amounts that interfere with habitat due to precipitation or bacteria growth.

(j) Ammonia – The one-hour average concentration of total ammonia nitrogen (in mg N/L) shall not exceed the CMC (acute criterion) calculated using the following equations:

Where salmonid fish are present:

$$CMC = \frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}}$$

Or where salmonid fish are not present:

$$CMC = \frac{0.411}{1 + 10^{7.204-pH}} + \frac{58.4}{1 + 10^{pH-7.204}}$$

The thirty-day average concentration of total ammonia nitrogen (in mg N/L) shall not exceed the CCC (chronic criterion) calculated using the following equations:

When fish early life stages are present:

$$CCC = \left(\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right) \cdot MIN\ (2.85,\ 1.45 \cdot 10^{0.028 \cdot (25-T)})$$

When fish early life stages are absent:

$$CCC = \left(\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right) \cdot 1.45 \cdot 10^{0.028 \cdot (25-MAX\ (T,7))}$$

In addition, the highest four-day average within the 30-day period shall not exceed 2.5 times the CCC.

(k) Nutrients - The waters shall not contain nutrients in concentrations that stimulate aquatic plant and/or algae growth to the extent that aquatic habitat is substantially reduced and/or the biological integrity fails to meet regional goals. Additionally, the quality of downstream waters shall not be detrimentally affected. Examples of parameters associated with the criterion include but are not limited to: nitrogen, phosphorus, potassium, calcium, magnesium, and various forms of each.

Interpretation of this provision may be made using the document Development of Regionally-based Interpretations of Tennessee's Narrative Nutrient Criterion and/or other scientifically defensible methods.

(l) Coliform - The concentration of the E. coli group shall not exceed 630 per 100 ml as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purposes of determining the geometric mean, individual samples having an E. coli group concentration of less than 1 per 100 ml shall be considered as having a concentration of 1 per 100 ml. In addition, the concentration of the E. coli group in any individual sample shall not exceed 2,880 per 100 ml.

(m) Biological Integrity - The waters shall not be modified through the addition of pollutants or through physical alteration to the extent that the diversity and/or productivity of aquatic biota within the receiving waters are substantially decreased or, in the case of wadeable streams, substantially different from conditions in reference streams in the same ecoregion. The parameters associated with this criterion are the aquatic biota measured. These are response variables.

Interpretation of this provision for any stream which (a) has at least 80% of the upstream catchment area contained within a single bioregion and (b) is of the appropriate stream order specified for the bioregion and (c) contains the habitat (riffle or rooted bank) specified for the bioregion, may be made using the most current revision of the Department's Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys and/or other scientifically defensible methods.

Interpretation of this provision for all other wadeable streams, lakes, and reservoirs may be made using Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers (EPA/841-B-99-002) or Lake and Reservoir Bioassessment and Biocriteria (EPA 841-B-98-007), and/or other scientifically defensible methods. Interpretation of this provision for wetlands or large rivers may be made using scientifically defensible methods. Effects to biological populations will be measured by comparisons to upstream conditions or to appropriately selected reference sites in the same bioregion if upstream conditions are determined to be degraded.

(n) Habitat - The quality of stream habitat shall provide for the development of a diverse aquatic community that meets regionally-based biological integrity goals. Examples of parameters associated with this criterion include but are not limited to: sediment deposition, embeddedness of riffles, velocity/depth regime, bank stability, and vegetative protection. Types of activities or conditions which can cause habitat loss include, but are not limited to: channel and substrate alterations, rock and gravel removal, stream flow changes, accumulation of silt, precipitation of metals, and removal of riparian vegetation. For wadeable streams, the instream habitat within each subecoregion shall be generally similar to that found at reference streams. However, streams shall not be assessed as impacted by habitat loss if it has been demonstrated that the biological integrity goal has been met.

(o) Flow – Stream or other waterbody flows shall support the fish and aquatic life criteria.

(4) The criteria for the use of Recreation are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to recreation.

(d) Total Suspended Solids, Turbidity or Color - There shall be no total suspended solids, turbidity or color in such amounts or character that will result in any objectionable appearance to the water, considering the nature and location of the water.

(e) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet, or mid- depth whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(f) Coliform - The concentration of the E. coli group shall not exceed 126 colony forming units per 100 ml, as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purposes of determining the geometric mean, individual samples having an E. coli concentration of less than 1 per 100 ml shall be considered as having a concentration of 1 per 100 ml.

Additionally, the concentration of the E. coli group in any individual sample taken from a lake, reservoir, State Scenic River, Exceptional Tennessee Water or ONRW (1200-04-03-.06) shall not exceed 487 colony forming units per 100 ml. The concentration of the E. coli group in any individual sample taken from any other waterbody shall not exceed 941 colony forming units per 100 ml.

(g) Taste or Odor - The waters shall not contain substances that will result in objectionable taste or odor.

(h) Nutrients - The waters shall not contain nutrients in concentrations that stimulate aquatic plant and/or algae growth to the extent that the public's recreational uses of the waterbody or other

downstream waters are detrimentally affected. Unless demonstrated otherwise, the nutrient criteria found in 1200-04-03-.03(3)(k) will be considered adequately protective of this use.

(i) Nutrient Response Criteria for Pickwick Reservoir: those waters impounded by Pickwick Dam on the Tennessee River. The reservoir has a surface area of 43,100 acres at full pool, 9,400 acres of which are within Tennessee. Chlorophyll a (corrected, as described in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998): the mean of the photic-zone (See definition) composite chlorophyll a samples collected monthly April through September shall not exceed 18 µg/l, as measured over the deepest point, main river channel, dam forebay.

(j) Toxic Substances - The waters shall not contain toxic substances, whether alone or in combination with other substances, that will render the waters unsafe or unsuitable for water contact activities including the capture and subsequent consumption of fish and shellfish, or will propose toxic conditions that will adversely affect man, animal, aquatic life, or wildlife. Human health criteria have been derived to protect the consumer from consumption of contaminated fish and water. The water and organisms criteria should only be applied to those waters classified for both recreation and domestic water supply. The criteria for recreation are as follows:

Compound	Water & Organisms Criteria * (µg/L)	Organisms Only Criteria (µg/L)
INORGANICS		
Antimony	5.6	640
Arsenic (c)	10.0	10.0
Mercury (b)	0.05	0.051
Nickel	610	4600
Thallium	0.24	0.47
Cyanide	140	140
Selenium	170	4200
Zinc	7400	26000
Dioxin ** (b)	0.000001	0.000001
VOLATILES		
Acrolein	6	9
Acrylonitrile (c)	0.51	2.5
Benzene (c)	22	510
Bromoform (c)	43	1400
Carbon tetrachloride (c)	2.3	16
Chlorobenzene	130	1600
Chlorodibromomethane (c)	4.0	130
Chloroform (c)	57	4700
Dichlorobromomethane (c)	5.5	170
1,2-Dichloroethane (c)	3.8	370
1,1-Dichloroethylene	330	7100
1,2-Dichloropropane (c)	5.0	150
1,3-Dichloropropene (c)	3.4	210
Ethylbenzene	530	2100
Methyl bromide	47	1500
Methylene chloride (c)	46	5900
1,1,2,2-Tetrachloroethane (c)	1.7	40
Tetrachloroethylene (c)	6.9	33
Toluene	1300	15000
1,2-Trans-Dichloroethylene	140	10000
1,1,2-Trichloroethane (c)	5.9	160
Trichloroethylene (c)	25	300
Vinyl chloride (c)	0.25	24

Compound	Water & Organisms Criteria * (µg/L)	Organisms Only Criteria (µg/L)
ACID EXTRACTABLES		
2-Chlorophenol	81	150
2,4-Dichlorophenol	77	290
2,4-Dimethylphenol	380	850
2-Methyl-4,6-dinitrophenol	13	280
Dinitrophenols	69	5300
Pentachlorophenol (c) (pH)	2.7	30
Phenol	10000	860000
2,4,6-Trichlorophenol (c)	14	24
BASE NEUTRALS		
Acenaphthene	670	990
Anthracene	8300	40000
Benzidine (c)	0.00086	0.0020
Benzo(a)anthracene (c)	0.038	0.18
Benzo(a)pyrene (c)	0.038	0.18
Benzo(b)fluoranthene (c)	0.038	0.18
Benzo(k)fluoranthene (c)	0.038	0.18
Bis(2-Chlorethyl)ether (c)	0.30	5.3
Bis(2-Chloro-isopropyl)ether	1400	65000
Bis(2-Ethylhexyl)phthalate (c)	12	22
Bis(Chloromethyl)ether (c)	0.0010	0.0029
Butylbenzyl Phthalate	1500	1900
2-Chloronaphthalene	1000	1600
Chrysene (c)	0.038	0.18
Dibenz(a,h)Anthracene (c)	0.038	0.18
1,2-Dichlorobenzene	420	1300
1,3-Dichlorobenzene	320	960
1,4-Dichlorobenzene	63	190
3,3-Dichlorobenzidine (c)	0.21	0.28
Diethyl phthalate	17000	44000
Dimethyl phthalate	270000	1100000
Di-n-butyl phthalate	2000	4500
2,4-Dinitrotoluene (c)	1.1	34
1,2-Diphenylhydrazine (c)	0.36	2.0
Fluoranthene	130	140
Fluorene	1100	5300
Hexachlorobenzene (b)(c)	0.0028	0.0029
Hexachlorobutadiene (b)(c)	4.4	180
Hexachlorocyclohexane-Technical (b)(c)	0.123	0.414
Hexachlorocyclopentadiene	40	1100
Hexachloroethane (c)	14	33
Ideno(1,2,3-cd)Pyrene (c)	0.038	0.18
Isophorone (c)	350	9600
Nitrobenzene	17	690
Nitrosamines	0.0008	1.24
Nitrosodibutylamine (c)	0.063	2.2
Nitrosodiethylamine (c)	0.008	12.4
Nitrosopyrrolidine (c)	0.16	340
N-Nitrosodimethylamine (c)	0.0069	30
N-Nitrosodi-n-Propylamine (c)	0.05	5.1
N-Nitrosodiphenylamine (c)	33	60

Compound	Water & Organisms Criteria * (µg/L)	Organisms Only Criteria (µg/L)
Pyrene	830	4000
Pentachlorobenzene (b)	1.4	1.5
1,2,4,5-Tetrachlorobenzene (b)	0.97	1.1
1,2,4-Trichlorobenzene	35	70
2,4,5-Trichlorophenol	1800	3600
PESTICIDES		
Aldrin (c)	0.00049	0.00050
a-BHC (c)	0.026	0.049
b-BHC (c)	0.091	0.17
g-BHC - Lindane (b)	0.98	1.8
Chlordane (b)(c)	0.0080	0.0081
4-4'-DDT (b)(c)	0.0022	0.0022
4,4'-DDE (b)(c)	0.0022	0.0022
4,4'-DDD (b)(c)	0.0031	0.0031
Dieldrin (b)(c)	0.00052	0.00054
a-Endosulfan	62	89
b-Endosulfan	62	89
Endosulfan Sulfate	62	89
Endrin	0.059	0.06
Endrin Aldehyde	0.29	0.30
Heptachlor (c)	0.00079	0.00079
Heptachlor epoxide (c)	0.00039	0.00039
PCB, total (b)(c)	0.00064	0.00064
Toxaphene (b)(c)	0.0028	0.0028

(b) Bioaccumulative parameter.

(c) 10-5 risk level is used for all carcinogenic pollutants.

* These criteria are for protection of public health due to consumption of water and organisms and should only be applied to these waters designated for both recreation and domestic water supply.

** Total dioxin is the sum of the concentrations of all dioxin and dibenzofuran isomers after multiplication by Toxic Equivalent Factors (TEFs). Following are the TEFs currently recommended by EPA (subject to revision):

DIOXIN ISOMERS	TEF	FURAN ISOMERS	TEF
Mono-, Di-, & TriCDDs	0.0	Mono-, Di-, & TriCDFs	0.0
2,3,7,8 TCDD	1.0	2,3,7,8 TCDF	0.1
Other TCDDs	0.0	Other TCDFs	0.0
2,3,7,8 PeCDD	0.5	1,2,3,7,8 PeCDF	0.05
Other PeCDDs	0.0	2,3,4,7,8 PeCDF	0.5
		Other PeCDFs	0.0
2,3,7,8 HxCDD	0.1	Other PeCDFs	0.0
Other HxCDDs	0.0	2,3,7,8 HxCDF	0.1
		Other HxCDFs	0.0
2,3,7,8 HpCDD	0.01	2,3,7,8 HpCDF	0.01
Other HpCDDs	0.0	Other HpCDFs	0.0
OCDD	0.001	OCDF	0.001

(k) Other Pollutants - The waters shall not contain other pollutants in quantities which may have a detrimental effect on recreation.

(l) Fish Consumption Advisories - A public fishing advisory will be considered when the calculated risk of additional cancers exceeds 10 -4 for typical consumers or 10 -5 for atypical consumers (See definition). A "do not consume" advisory will be issued for the protection of typical consumers and a "precautionary advisory" will be issued for the protection of atypical consumers. The following formula will be used to calculate the risk of additional cancers:

$$R = qE$$

where:

R= Plausible-upper-limit risk of cancer associated with a chemical in a fisheries species for a human subpopulation.

q = Carcinogenic Potency Factor for the chemical (mg kg-1 day-1)-1 estimated as the upper 95 percent confidence limit of the slope of a linear dose-response curve. Scientifically defensible Potency Factors will be used.

E = Exposure dose of the chemical (mg kg-1 day-1) from the fish species for the human subpopulation in the area. E is calculated by the following formula:

$$E = \frac{C\ I\ X}{W} \quad \text{where:}$$

C = Concentration of the chemical (mg/kg) in the edible portion of the species in the area. The average levels from multiple fillet samples of the same species will be used. Catfish will be analyzed skin-off with the belly flap included in the sample. Gamefish and carp will be analyzed skin-on with the belly flap included in the sample. Sizes of fish collected for analysis will represent the ranges of sizes likely to be collected and consumed by the public. References on this subject include, but are not limited to: EPA's Guidance for Assessing Chemical Contaminant Data for use in Fish Advisories.

I = Mean daily consumption rate (g/day averaged over 70 year lifetime) of the fish species by the human subpopulation in the area. 6.5 g/day will be used unless better site-specific information is available.

X = Relative absorption coefficient, or the ratio of human absorption efficiency to test animal absorption efficiency of the chemical. Assumed to be 1.0 unless better information is available.

W = Average human mass (kg). 75 kg will be used.

For substances for which the public health concern is based on toxicity, a "do not consume" advisory will be considered warranted when average levels of the substance in the edible portion of fish exceed U.S. Food and Drug Administration (FDA) Action Levels or EPA national criteria. Based on the rationale used by FDA or EPA for their levels, the Commissioner may issue precautionary advisories at levels appropriate to protect sensitive populations.

(m) Flow – Stream flows shall support recreational uses.

(5) The criteria for the use of Irrigation are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not impair its use for irrigation.

(d) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water for irrigation purposes.

(e) Temperature - The temperature of the water shall not interfere with its use for irrigation purposes.

(f) Toxic Substances - The waters shall not contain toxic substances whether alone or in combination with other substances which will produce toxic conditions that adversely affect the quality of the waters for irrigation.

(g) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the waters used for irrigation.

(6) The criteria for the use of Livestock Watering and Wildlife are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not impair its use for livestock watering and wildlife.

(d) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as to interfere with livestock watering and wildlife.

(e) Temperature - The temperature of the water shall not interfere with its use for livestock watering and wildlife.

(f) Toxic Substances - The waters shall not contain substances whether alone or in combination with other substances, which will produce toxic conditions that adversely affect the quality of the waters for livestock watering and wildlife.

(g) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the water for livestock watering and wildlife.

(7) The criteria for the use of Navigation are the following.

(a) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as to interfere with navigation.

(b) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the waters used for navigation.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.04 Definitions

In addition to the meanings provided in the Water Quality Control Act (T.C.A. § 69-3-103), terms used in these rules shall mean the following:

(1) Atypical consumers - Those persons in the vicinity of a stream or lake who due to physiological factors or previous exposure are more sensitive to specific pollutants than is the population in general. Examples of atypical consumers may include, but are not limited to: children; pregnant or nursing women; subsistence

fishermen; frequent purchasers of commercially harvested fish; and agricultural, industrial, or military personnel who may have had previous occupational exposure to the contaminant of concern.

(2) Conventional Water Treatment - Conventional water treatment as referred to in the criteria denotes coagulation, sedimentation, filtration, and chlorination or disinfection.

(3) Degradation - The alteration of the properties of waters by the addition of pollutants, withdrawal of water, or removal of habitat, except those alterations of a short duration.

(4) De Minimis degradation – Degradation of a small magnitude, as provided in this paragraph.

(a) Discharges and withdrawals

1. Subject to the limitation in part 3 of this subparagraph, a single discharge other than those from new domestic wastewater sources will be considered de minimis if it uses less than five percent of the available assimilative capacity for the substance being discharged.

2. Subject to the limitation in part 3 of this subparagraph, a single water withdrawal will be considered de minimis if it removes less than five percent of the 7Q10 flow of the stream.

3. If more than one activity described in part 1 or 2 of this subparagraph has been authorized in a segment and the total of the authorized and proposed impacts uses no more than ten percent of the assimilative capacity, or 7Q10 low flow, they are presumed to be de minimis. Where the total of the authorized and proposed impacts uses ten percent of the assimilative capacity, or 7Q10 low flow, additional degradation may only be treated as de minimis if the division finds on a scientific basis that the additional degradation has an insignificant effect on the resource.

(b) Habitat alterations authorized by an Aquatic Resource Alteration Permit (ARAP) are de minimis if the division finds that the impacts, individually and cumulatively are offset by impact minimization and/or in-system mitigation, provided however, in ONRWs the mitigation must occur within the ONRW.

(5) Ecoregion - A relatively homogeneous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.

(6) Epilimnion – The upper layer of water in a thermally stratified lake or reservoir. This layer consists of the warmest water and has a fairly uniform (constant) temperature.

(7) Ground water – Water beneath the surface of the ground within the zone of saturation, whether or not flowing through known and definite channels.

(8) Ground water table – The upper surface of the zone of saturation by ground water.

(9) Hypolimnion - The lowest layer in a thermally stratified lake or reservoir. This layer consists of colder, more dense water, has a constant temperature and no mixing occurs. The hypolimnion of a eutrophic lake is usually low or lacking in oxygen.

(10) Interflow – The runoff infiltrating into the surface soil and moving toward streams as shallow, perched water above the main ground-water level.

(11) Measurable degradation, as used in the context of discharges or withdrawals – Changes in parameters of waters that are of sufficient magnitude to be detectable by the best available instrumentation or laboratory analyses.

(12) Mixing Zone - That section of a flowing stream or impounded waters in the immediate vicinity of an outfall where an effluent becomes dispersed and mixed.

(13) Multiple populations – Two or more individuals from each of two or more distinct taxa, in the context of obligate lotic aquatic organisms.

(14) Normal weather conditions – Those within one standard deviation of the cumulative monthly precipitation means for at least the three months prior to the hydrologic determination investigation, based on a 30-year average computed at the end of each decade. Precipitation data shall come from National Oceanographic and Atmospheric Agency's National Climatic Data Center, National Resources Conservation Service's National Climatic Data Center, Natural Resources Conservation Service's National Water and Climate Center, or other well-established weather station.

(15) Obligate lotic aquatic organisms - Organisms that require flowing water for all or almost all of the aquatic phase of their life cycles.

(16) Parameter – A biological, chemical, radiological, bacteriological, or physical property of water that can be directly measured. Some criteria are expressed in terms of a single parameter; others, such as habitat, nutrients, and biological integrity are not directly measured, but are derived from measurements of parameters.

(17) Perched water – Water that accumulates above an aquitard that limits downward migration where there is an unsaturated interval below it, between the aquitard and the zone of saturation.

(18) Photic Zone - the region of water through which light penetrates and where photosynthetic organisms live.

(19) Reference condition - A parameter-specific set of data from regional reference sites that establish the statistical range of values for that particular substance at least-impacted streams.

(20) Reference Site - Least impacted waters within an ecoregion that have been monitored to establish a baseline to which alterations of other waters can be compared.

(21) Response Variable – a characteristic of water quality that can be measured and changes as a result of an alteration of habitat, water withdrawal, or discharge of pollutants, as distinguished from agents that cause changes in aquatic systems.

(22) Stratification – The tendency in lakes and reservoirs for distinct layers of water to form as a result of vertical change in temperature and, therefore, in the density of water. During stratification, dissolved oxygen, nutrients, and other parameters of water chemistry do not mix well between layers, establishing chemical as well as thermal gradients.

(23) Stream - A surface water that is not a wet weather conveyance.

(24) Subecoregion - A smaller, more homogenous area that has been delineated within an ecoregion.

(25) Thermocline – The middle layer in a thermally stratified lake or reservoir. In this layer there is a rapid decrease in temperature with depth. Also called the metalimnion.

(26) Wadeable streams - Streams that can be sampled using a hand held, one meter square or smaller kick net without water and materials escaping over the top of the net.

(27) Watercourse - A man-made or natural hydrologic feature with a defined linear channel which discretely conveys flowing water, as opposed to sheet-flow.

(28) Wet weather conveyance - Man-made or natural watercourses, including natural watercourses that have been modified by channelization:

(a) That flow only in direct response to precipitation runoff in their immediate locality;

(b) Whose channels are at all times above the ground water table;

(c) That are not suitable for drinking water supplies; and

(d) In which hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at

least two months.

(29) Wet weather conveyance determination - The decision based on site specific information of whether a particular watercourse is a stream or a wet weather conveyance. It is synonymous with "stream determination" and "hydrologic determination."

(30) Zone of saturation – A subsurface zone below the ground water table in which all of the interconnected voids and pore spaces are filled with water.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.05 Interpretation of Criteria

(1) Interpretation of the above criteria shall conform to any rules and regulations or policies adopted by the Board of Water Quality, Oil and Gas.

(2) The effect of treated sewage or waste discharge on the receiving waters shall be considered beyond the mixing zone except as provided in this paragraph. The extent to which this is practicable depends upon local conditions and the proximity and nature of other uses of the waters. Such mixing zones (See definition) shall be restricted in area and length and shall not (i) prevent the free passage of fish or cause aquatic life mortality in the receiving waters; (ii) contain materials in concentrations that exceed acute criteria beyond the zone immediately surrounding the outfall; (iii) result in offensive conditions; (iv) produce undesirable aquatic life or result in dominance of a nuisance species; (v) endanger the public health or welfare; or (vi) adversely affect the reasonable and necessary uses of the area; (vii) create a condition of chronic toxicity beyond the edge of the mixing zone; (viii) adversely affect nursery and spawning areas; or (ix) adversely affect species with special state or federal status.

(3) The technical and economical feasibility of waste treatment, recovery, or adjustment of the method of discharge to provide correction shall be considered in determining the time to be allowed for the development of practicable methods and for the specified correction, to the extent allowable under Rule 1200-04-03-.06(5).

(4) Water quality criteria for fish and aquatic life and livestock watering and wildlife set forth shall generally be applied on the basis of the following stream flows: unregulated streams - stream flows equal to or exceeding the 7-day minimum, 10-year recurrence interval; regulated streams - all flows in excess of the minimum critical flow occurring once in ten years as determined by the division. However, criteria that are wholly or partially based on measurements of ambient aquatic community health, such as the nutrient, biological integrity, and habitat criteria for the fish and aquatic life use, shall support the designated use. These criteria should be considered independent of a specified minimum flow duration and recurrence. All other criteria shall be applied on the basis of stream flows equal to or exceeding the 30 day minimum 5 year recurrence interval.

(5) In general, deviations from normal water conditions are undesirable, but the frequency, magnitude and duration of the deviations shall be considered in interpreting the above criteria. When interpreting pathogen data, samples collected during or immediately after significant rain events may be treated as outliers unless caused by point source dischargers. Such outlier data may be given less weight in assessment decisions than non-rain event sampling results.

(6) The criteria and standards provide that all discharges of sewage, industrial waste, and other waste shall receive the degree of treatment or effluent reduction necessary to comply with water quality standards, or state or federal laws and regulations pursuant thereto, and where appropriate will comply with the "Standards of Performance" as required by the Tennessee Water Quality Control Act, (T.C.A., §§69-3-101, et seq.).

(7) Where naturally formed conditions (e.g., geologic formations) or background water quality conditions are substantial impediments to attainment of the water quality standards, these natural or background conditions shall be taken into consideration in establishing any effluent limitations or restrictions on discharges to such waters. For purposes of water quality assessment, exceedances of water quality standards caused by natural conditions will not be considered the condition of pollution.

(8) There are cases in which the in-stream criteria as established by this rule are less than current chemical

technological capabilities for analytical detection. In instances where permit limits established through implementation of these criteria are below analytical capabilities, compliance with those limits will be determined using the following reporting limits, unless in specific cases other reporting limits are demonstrated to be the best achievable because of the particular nature of the wastewater being analyzed. Such a demonstration shall be made at the time results are submitted and shall affirm that using methods, personnel, training, and equipment appropriate to reach applicable required reporting levels (RRLs), the laboratory was unable to do so due to the nature of the sample. The methods, equipment, and general nature of the interference shall be provided. Inability to accurately quantify the level of a contaminant shall not be acceptable grounds for a higher reporting level if the permit requirement is based on detection/non-detection.

REQUIRED REPORTING LEVELS [RRL] (µg/l)
Approved EPA Methods Must Be Used)

INORGANICS	RRL
Antimony	3.0
Arsenic, total (c)	1.0
Arsenic (III) (c)	1.0
Beryllium (c)	1.0
Cadmium	1.0
Chromium, total	1.0
Chromium (III)	1.0
Chromium (VI)	10.0
Copper	1.0
Lead	1.0
Mercury	0.2
Nickel	10.0
Selenium	2.0
Silver	1.0
Zinc	1.0
Cyanide	5.0
Dioxin	0.00001

BASE NEUTRALS	RRL
Acenaphthylene (c)	2.3
Anthracene	0.7
Benzo(a)anthracene (c)	0.3
Benzo(a)pyrene (c)	0.3
3,4-Benzofluoranthene (c)	0.3
Benzo(k)fluoranthene (c)	0.3
Bis(2-Chloroethyl)ether (c)	1.0
Bis(2-Ethylhexyl)phthalate(c)	2.5
Chrysene	2.5
1,2-Dichlorobenzene	2.0
1,3-Dichlorobenzene	2.0
1,4-Dichlorobenzene - para-Dichlorobenzene	4.4
Diethyl phthalate	1.9
Dimethyl phthalate	1.6
Di-n-Butyl phthalate	2.5
2,4-Dinitrotoluene (c)	1.0
Fluoranthene	2.2

INORGANICS	RRL
VOLATILES	
Acrolein	1.0
Acrylonitrile (c)	1.0
Benzene (c)	1.0
Bromoform - Tribromomethane (c)	1.0
Carbon tetrachloride (c)	1.0
Chloroform - Trichloromethane (c)	0.5
Dichlorobromomethane (c)	1.0
1,2-Dichloroethane (c)	1.0
1,1-Dichloroethylene (c)	1.0
1,3-Dichloropropylene	1.0
Ethylbenzene	1.0
Methyl chloride - Chloromethane (c)	1.0
Methylene chloride - Dichloromethane (c)	1.0
1,1,2,2-Tetrachloroethane (c)	0.5
Tetrachloroethylene (c)	0.5
Toluene	1.0
1,1,1-Trichloroethane	1.0
1,1,2-Trichloroethane (c)	0.2
Trichloroethylene (c)	1.0

BASE NEUTRALS	RRL
Fluorene	0.3
Hexachlorobenzene (c)	1.9
Hexachlorobutadiene (c)	5.0
Hexachloroethane (c)	0.5
Nitrobenzene	10.0
Phenanthrene	0.7
Pyrene	0.3
PESTICIDES	
Aldrin (c)	0.5
g-BHC - Lindane (c)	0.5
Chlordane (c)	0.1
4-4'-DDT (c)	0.1
4,4'-DDE (c)	0.1
4,4'-DDD (c)	0.1
Dieldrin (c)	0.05
a-Endosulfan	0.1
b-Endosulfan	0.05
Endrin	0.1
Heptachlor (c)	0.05
Heptachlor epoxide (c)	0.08
PCB-1242 (c)	0.5
PCB-1254 (c)	0.5
PCB-1221 (c)	0.5
PCB-1232 (c)	0.5

Vinyl chloride (c)	2.0	PCB-1248 (c)	0.5
		PCB-1260 (c)	0.5
ACID EXTRACTABLES		PCB-1016 (c)	0.5
2-Methyl-4,6-dinitrophenol-		PCB, total (c)	0.5
4,6-Dinitro-o-cresol	24.0	Toxaphene (c)	0.5
2,4-Dinitrophenol	42.0		
Pentachlorophenol	5.0		
2,4,6-Trichlorophenol (c)	2.7		

(c) carcinogen

(9) Standard operating procedures for making stream and wet weather conveyance determinations (hydrologic determinations)

(a) General

1. Because a primary purpose of the Water Quality Control Act is to protect the waters of the state for the public, and since streams receive a higher level of protection than wet weather conveyances, anyone desiring to alter a watercourse who wishes to avoid unnecessary expense and delay, may request the department to process a permit application or issue an authorization under a general permit with the presumption that the watercourse is a stream. In that instance, a full hydrologic determination would not be performed under these rules. However, nothing shall preclude an applicant from subsequently seeking a wet weather conveyance determination.

2. The procedures detailed in this rule are intended to be used in situations where there is some question whether a watercourse is a stream or wet weather conveyance. In situations where it is obvious that a watercourse is a stream, such as named rivers or streams with watersheds larger than a square mile, or spring-fed streams with consistent flow greater than one cubic foot per second, it is not necessary to conduct a detailed hydrologic determination.

3. It is the purpose of this rule to set out the framework for making stream and wet weather conveyance determinations taking into consideration all relevant and necessary information on the biology, geology, geomorphology, precipitation, hydrology, and other scientifically based principles. Staff of the department and certified hydrologic professionals not employed by the department who are making a submission pursuant to §69-3-108(r) shall follow these rules and the Guidance for Making Hydrologic Determinations (Guidance) which contains the instructions and examples for proper application of these rules to situations in the field that has been developed pursuant to §69-3-107(25) in making these determinations.

4. The format for documenting these determinations is provided in the Hydrologic Determination Field Data Sheet (Data Sheet) in the Guidance. All available field characteristics necessary to make an accurate determination shall be evaluated, and all evidence utilized in making a determination shall be documented using the Data Sheet or as an addendum. Applicants may choose to submit additional hydrological or geotechnical data not included in the standard procedure in support of a hydrologic determination. Any additional relevant information submitted to the department shall be considered by the division in its determination.

5. Any significant revision to the Data Sheet or Guidance shall be subject to a thirty-day public comment period prior to adoption. The department shall advertise its intent to modify the Data Sheet or Guidance by posting notice of proposed changes on the department's internet web site and by sending to the permit mailing list. Significant modifications include the addition or deletion or substantive modification of either the primary or secondary indicators or a change in the scoring system. The department shall consider the need for modifications to the Data Sheet and Guidance periodically and whenever a significant comment is submitted in regard to them.

6. To be classified as a wet weather conveyance, a watercourse must meet all four elements of the definition in §69-3-103. Therefore, if it is determined that any one of the four elements does not apply to a watercourse, the watercourse is a stream.

7. Because natural variation and human activities can alter hydrologic conditions over time, hydrologic determination will only be considered valid for a maximum of five years or the term of a permit based on it.

8. Because there can be considerable variability within a given reach of a watercourse, wet weather conveyance determinations should not be made on a single point but must also investigate up and down channel and consider the watercourse's landscape context.

9. All of the indicators referred to in these rules and the Guidance are evidence relevant to the presence or absence of one or more of the four elements of the wet weather conveyance definition. The difference between the primary and secondary indicators is that each of the primary indicators is considered presumptive evidence alone regarding one or more of the four elements, and will allow for an immediate hydrologic determination to be made in most cases. Some of the primary indicators involve direct observations of the presence or absence of one or more of the elements. The primary indicators of wet weather conveyances are:

   (i) hydrologic feature exists solely due to a process discharge,

   (ii) defined bed and bank absent, watercourse dominated by upland vegetation/ grass,

   (iii) watercourse dry anytime during February through April 15th under normal precipitation/ ground water conditions, and

   (iv) daily flow and precipitation records showing feature only flows in direct response to rainfall.

10. Primary indicators of streams are:

   (i) presence of multiple populations of obligate lotic organisms with two months or longer aquatic phase,

   (ii) presence of fish (except Gambusia),

   (iii) presence of naturally occurring ground water table connection,

   (iv) flowing water in channel seven days or more since the last precipitation in the local watershed, and

   (v) evidence watercourse has been used as a supply of drinking water.

11. When primary indicators cannot be observed or documented, then the investigator must evaluate the watercourse using secondary indicators. The secondary indicators are an aggregate set of observations that in total are used to evaluate the presence or absence of one or more of the elements of a wet weather conveyance. Secondary indicators are:

   (i) continuous bed and bank,

   (ii) sinuous channel,

   (iii) in-channel structure, riffle-pool sequences,

   (iv) sorting of soil textures or other substrate,

   (v) active/relic floodplain,

(vi) depositional bars or benches,

(vii) braided channel,

(viii) recent alluvial deposits,

(ix) natural levees,

(x) headcuts,

(xi) grade controls,

(xii) natural valley draingeway,

(xiii) at least second order channel on United States Geological Survey or Natural Resources Conservation Service map,

(xiv) subsurface flow/discharge into channel,

(xv) water in channel more than forty-eight hours since rain,

(xvi) leaf litter in channel,

(xvii) sediment on plants or on debris,

(xviii) organic debris lines or piles (wrack lines),

(xix) hydric soils in channel bed or sides,

(xx) fibrous roots in channel,

(xxi) rooted plants in channel,

(xxii) crayfish in channel (exclude in floodplain),

(xxiii) bivalves/mussels,

(xxiv) amphibians,

(xxv) macrobenthos,

(xxvi) filamentous algae, periphyton,

(xxvii) iron-oxidizing bacteria/fungus, and

(xxviii) wetland plants in channel.

12. The secondary indicators shall be scored in accordance with the instructions in the Guidance. Hydrologic determinations will often be made on the basis of secondary indicators because none of the primary indicators is present at the time of investigation. Any of the primary indicators contained in these rules and the Guidance may be considered conclusive after consideration of appropriate background information including recent weather and precipitation, in the absence of any directly contradictory evidence. However, since hydrologic determinations are required to be made at all times of year, secondary indicators of hydrologic status will be used, in accordance with the Guidance and these rules, as determinant evidence in the absence of primary indicators. The secondary indicators used in the Guidance shall be based on sound scientific principles.

13. Watercourses in which flow is solely a result of process or wastewater discharge or other non-natural sources shall not be regulated as streams even though they may exhibit characteristics of a stream rather than a wet weather conveyance.

(b) The specific procedures outlined herein are intended to consider each of the four elements necessary for a watercourse to be classified as a wet weather conveyance.

1. Because the duration of the flow in a watercourse is the central inquiry of hydrologic determinations, all of the primary and secondary indicators are relevant to evaluating it. Although other factors may also be relevant, at a minimum the following procedures shall be used to determine if a watercourse flows only in direct response to precipitation runoff in its immediate vicinity.

(i) Prior to conducting a field evaluation, the investigator should review recent precipitation patterns for the local area, the longer-term seasonal precipitation trends, and any other available information such as historic land use, regional geology and soil types, or previous hydrologic determinations near the site to be investigated.

(ii) The investigator must decide if the determination is being conducted under "normal weather conditions." The procedure for determining if weather conditions are normal, or either wetter or drier than normal, is contained in the Guidance. If conditions are either wetter or drier than normal the investigator must take this into consideration in making a hydrologic determination.

(iii) The vast majority of wet weather conveyances will generally cease to flow within 48 hours of almost all except some of the largest rain events. This is especially true in urbanized, impervious areas, or other areas with low infiltration rates, such as mowed lawns. The investigator shall document the presence or absence of flow within the watercourse. If in-stream surface flow is observed within the evaluated reach, and it has been at least seven days since the last rainfall event in the upstream watershed, the flow will not be considered a direct storm response, and the investigator shall conclude that the feature is a stream. The investigator shall document the source of the precipitation data. The source used shall be as close as feasible to the watercourse.

(iv) When subsurface water discharges such as seeps, interstitial flow, perched water, or interflow are observed and used as indicators of hydrology, investigators shall consider the influence of recent precipitation events and localized soil and geologic conditions on these features to determine if these features provide adequate hydrology such that the watercourse flows more than in direct response to precipitation. For example, since some such features have more flow when there has been significant recent precipitation, if they are flowing when there has not been much recent precipitation, it is more likely that they flow for sustained periods. In some instances, there may be observable outcroppings of a confining layer such as shale or clay that causes interstitial flow to discharge to a watercourse. In this situation, the capacity of up-gradient conditions such as the permeability and volume of the soils above the confining layer to sustain extended periods of surface flow should be considered. These types of sustained discharges should not be considered a direct response to rainfall. In other instances, such as in areas with a highly karst geology, observed seeps into a watercourse may be not be able to sustain extended periods of flow, and may be considered a more direct response to rainfall.

(v) Field investigations for hydrologic determinations should not be conducted if a one-inch precipitation event in 24 hours has occurred in the area of investigation within the previous 48 hours.

2. The following procedures are to determine if the channel is above the ground water table at all times. Under the definition of wet weather conveyance in T.C.A. §69-3-103, if there are any times that the channel is not above the ground water table, it is a stream.

(i) Since larger streams and rivers are frequently in contact with the ground water table, the investigator shall review topographic maps to determine if the watercourse is within the floodplain of, or within twenty feet in elevation of a larger stream or river known to carry perennial flow. Flow in such a watercourse should not be considered conclusive evidence of a ground water table connection, but is contributing evidence to be considered in the determination. Therefore further investigation into additional factors including those listed below is necessary to determine that the watercourse in question is in contact with the ground water table.

(ii) Since the presence of wetlands often indicates a shallow depth to the ground water table, the investigator shall search for the presence of wetlands in the immediate vicinity of the watercourse both on topographic maps and in the field. The presence of wetlands in the vicinity of the watercourse being examined should not be considered conclusive evidence of a ground water table connection, but is contributing evidence to be considered in the determination. Therefore further investigation into other factors including those listed below is necessary to determine that the watercourse in question is in contact with the ground water table.

(iii) The investigator shall review United States Department of Agriculture soil surveys. Their soil descriptions often contain information on depth to water table. For watercourses whose channels are at a depth that indicates contact with the ground water table for the soil type in which they are formed, the investigator can conclude that the watercourse is in contact with the water table, absent contradicting field information.

(iv) The investigator shall review site geological characteristics affecting the elevation of the ground water table with respect to the elevation of the channel, including the presence of karst bedrock features, erodibility of watershed soils, thickness of regolith and channel alluvium, depth to bedrock or laterally persistent silt or clay horizons, land-use disturbances, and other watershed conditions controlling or contributing to the presence or absence of channel base flow.

(v) If data are available from water wells within one mile of and in similar landscape position to a watercourse under investigation, and if the surface elevation of standing water in the well is at or above the elevation of the bottom of the channel of the watercourse, then the investigator can conclude that the watercourse is in contact with the ground water table.

(vi) The observed emergence of water from the ground is not necessarily water from the ground water table and should not be considered as conclusive for the purpose of this element. Therefore further investigation into factors including those listed above is necessary to determine the source of the emergent water.

3. The following procedures are to determine if a watercourse is suitable for drinking water supplies. The investigator should note spring boxes, water pipes to carry water from the watercourse to a residence, or other observable evidence the watercourse is being used as a household water supply upstream of or within the segment being evaluated. When these features are noted, the investigator can conclude that the watercourse is a stream absent contradicting information.

4. The following procedures are to determine if a watercourse, under normal weather conditions, due to naturally occurring ephemeral or low flow does not have sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months.

(i) The presence of the requisite aquatic life is a primary indicator that the watercourse supports that aquatic life. In order to find that the requisite aquatic life is present, the investigator must document more than one individual of at

least two qualifying taxa in the evaluated reach under normal weather conditions. Unhatched eggs or any other stage of a taxon's life cycle that could be found in a wet weather conveyance or lentic habitat (such as a deceased winged adult) should not be considered as a primary indicator that a watercourse is a stream. The specific taxa found should be noted on the Data Sheet. Representative individuals of the taxa used to make this determination should be collected for confirmation of identification. All aquatic life observed should be noted, even if some do not qualify as primary indicators. These organisms may also be relevant as secondary field indicators.

(ii) Indigenous members of taxa within the benthic macroinvertebrate groups listed below are obligate lotic aquatic organisms and thus are primary indicators that a watercourse is a stream when two or more specimens of two or more taxa are documented under normal weather conditions.

(I) Gastropoda: Pleuroceridae, Viviparidae, Valvatidae

(II) Bivalvia: Unionidae

(III) Coleoptera: Dryopidae, Elmidae, Psephenidae, Ptilodactylidae, Staphylinidae

(IV) Diptera: Athericidae, Blephariceridae, Chironomidae (except: Chironomini or red midges), Empididae, Ptychopteridae, Tanyderidae, and some Tipulidae (Antocha, Rhabdomastix, Dicranota, Hexatoma, Limnophila, Tipula)

(V) Ephemeroptera: all members, except: Siphlonuridae, and some Ephemeridae (Hexagenia)

(VI) Megaloptera: all members, except: Chauliodes

(VII) Odonata: Aeshnidae, Calopterygidae, Cordulegastridae, Gomphidae, some Coenagrionidae (Argia, Chromagrion, Amphiagrion), some Libellulidae (Perithemis) and some Corduliidae (Epitheca, Helocordulia, Neurocordulia)

(VIII) Plecoptera: all members

(IX) Trichoptera: all members, except: Molannidae, some Leptoceridae (Nectopsyche, Triaenodes), and some Limnephilidae (Ironoquia, Limnephilus, Hesperophylax)

(X) Oligochaetes: Branchiobdellidae, Lumbriculidae, Sparganophilidae, some Tubificidae (subfamily Naidinae, Ilyodrilus, Rhyacodrilus, Varichaetadrilus), and some Lumbricidae (Eiseniella tetraedra only).

(iii) The presence of any indigenous fish species, other than the Mosquitofish (*Gambusia*), documented under normal weather conditions, is also a primary indicator that the watercourse is a stream, and constitutes support of the requisite aquatic life.

(iv) There are conditions in which a stream may be dry for a period of weeks or even months, but supports multiple populations of lotic aquatic organisms or fish at other times during a year. In such conditions, an investigator could appropriately determine that there is sufficient water on an annual basis to support such populations even though there were not any present on a particular date. In addition, manmade pollution or other water quality issues may preclude support of these organisms. Therefore, the absence of lotic aquatic organisms at the time of the investigation cannot be the sole basis for a determination that a watercourse meets the fourth element of the definition. When multiple

populations of lotic aquatic organisms or fish cannot be documented to occur in a watercourse, then the investigator must consider the hydrologic and biologic factors referred to as secondary indicators in these rules and the Guidance to make a hydrologic determination.

(v) Under normal weather conditions, if the investigator documents the absence of water due to naturally occurring conditions in a watercourse between February 1 and April 15, then the investigator can conclude the watercourse is unable to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months and is therefore a wet weather conveyance.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.06 Antidegradation Statement

(1) General

(a) It is the purpose of Tennessee's standards to fully protect existing uses of all surface waters as established under the Act. Existing uses are those actually attained in the waterbody on or after November 28, 1975. Additionally, the Tennessee Water Quality Standards shall not be construed as permitting the degradation (see definition) of high quality surface waters. Where the quality of Tennessee waters is better than the level necessary to support propagation of fish, shellfish, and wildlife, or recreation in and on the water, that quality will be maintained and protected unless the state finds, after intergovernmental coordination and public participation, that lowering water quality is necessary to accommodate important economic or social development in the area in which the waters are located. Sources exempted from permit requirements under the Water Quality Control Act should utilize all cost-effective and reasonable best management practices. Where new or increased temperature alterations are proposed, a successful demonstration as determined by the state under Section 316(a) of the Clean Water Act, 33 U.S.C. §1326, shall be considered to be in compliance with this rule.

(b) To apply this antidegradation statement in the permitting context, the Department shall first determine if the application is complete. Absent extraordinary circumstances, the Department shall notify the applicant that an application is complete or of any deficiencies within 30 days of receipt of the application.

1. A complete application will include all of the information requested on the forms provided by the Department. For activities other than new domesic wastewater discharges, a complete application will include the applicant's basis for concluding that the proposed activity:

(i) will not cause measurable degradation, or

(ii) will only cause de minimis degradation, or

(iii) will cause more than de minimis degradation.

2. If the proposed activity will cause degradation above a de minimis level or if it is a new discharge of domestic wastewater, a complete application will:

(i) analyze all reasonable alternatives and describe the level of degradation caused by each of the feasible alternatives;

(ii) discuss the social and economic consequences of each alternative; and

(iii) demonstrate that the degradation will not violate the water quality criteria for uses existing in the receiving waters and is necessary to accommodate important economic and social development in the area.

3. Such alternatives analyses shall include, at a minimum, completed and accurate Worksheets A and B for public sector applicants or Worksheets A and G for private system applicants, or shall provide alternative information subject to approval by the Department. Additionally, to provide information to the Department regarding the applicant's claim of economic or social necessity, public sector applicants shall provide the relevant information from Forms O, P, Q, S, T, U, and AA, found in the EPA guidance document (Economic Guidance); private sector applicants shall provide the relevant information from Forms O, R, V, W, X, Y, Z, and AB, found in the EPA guidance document (Economic Guidance). Either type of applicant shall submit alternative or additional information regarding economic or social necessity as directed by the Department. These forms are found in the EPA guidance document entitled Interim Economic Guidance for Water Quality Standards: Workbook (EPA 823/B-95-002) (Economic Guidance). Reasonable alternatives for the various activities include, but are not limited to the following actions.

(i) Alternatives for discharges include connection to an existing collection system, land application, water reuse, water recycling, or other treatment alternatives. For small domestic discharges, connection to an existing system or land application will be considered preferable.

(ii) For water withdrawals, alternatives include water conservation, water reuse or recycling, off-stream impoundments, water harvesting during high flow conditions, regionalization, withdrawing water from a larger waterbody, use of ground water, connection to another water supply with available capacity, and pricing structures that encourage a reduction in consumption.

(iii) For activities that cause habitat alterations, alternatives that avoid or minimize degradation should be explored and explained by the applicant. These avoidance or minimization activities could include maintaining or enhancing buffer zones, bridging a stream rather than culverting it, altering the footprint of a project instead of relocating a stream, or using a culvert without a bottom, instead of one that is fully concreted.

(c) When the Department determines that a permit application is complete, it shall notify the applicant by letter or email and shall notify the public and the state and federal agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and historic preservation by posting a notice on the department's web site and sending email to persons who have asked to be notified of permit actions. In the case of habitat alterations or water withdrawals this notice shall be a part of the public notice of a permit application under paragraph (4) of Rule 1200-04-07-.04 and shall contain the information required by that paragraph of the rules. For a discharge, the notice shall summarize the information given by the applicant pursuant to subparagraph (b) of this paragraph.

(d) Next, the Department shall determine the level of degradation that would occur as a result of the proposed activity. Not all activities cause an addition of pollutants, diminish flows, or impact habitat.

1. In the case of discharges, if the department determines that no measurable degradation will occur as a result of the activity, no further review under this rule (1200-04-03-.06) is required regardless of the antidegradation classification of the receiving stream, unless the activity:

(i) is a new domestic wastewater discharge, or

(ii) introduces a parameter identified as bioaccumulative, or

(iii) introduces a parameter with a criterion below the current method detection level for that substance, or

(iv) is proposed to occur in an ONRW.

2. In the case of water withdrawals requiring permits from waters other than ONRWs, if the department determines that no measurable degradation will occur, no further review under this rule (1200-04-03-.06) is required regardless of the antidegradation classification of the receiving stream.

3. In the case of habitat alterations, if the department determines that no degradation or only de minimis degradation will occur, no further review under the rule (1200-04-03-.06) is required regardless of the antidegradation classification of the receiving stream.

(e) If the steps described in subparagraphs (b), (c) and (d) of this paragraph do not conclude the review under this rule (1200-04-03-.06), the Department shall determine whether the waters impacted by the activity are ones with available parameters, unavailable parameters, Exceptional Tennessee Waters, or Outstanding National Resource Waters, or if they are in more than one category. For example, a stream segment may be unavailable for one parameter and be available for others and Exceptional Tennessee Waters may also be unavailable for certain parameters. If an activity is proposed in a waterbody that is in more than one category, it must meet all of the applicable requirements.

(2) Waters with unavailable parameters

Unavailable parameters exist where water quality is at, or fails to meet, the levels specified in water quality criteria in Rule 1200-04-03-.03. In the case of a criterion that is a single response variable or is derived from measurement of multiple response variables, the unavailable parameters shall be the agents causing water quality to be at or failing to meet the levels specified in criteria. For example, if the biological integrity criterion (derived from multiple response variables) is violated, the unavailable parameters shall be the pollutants causing the violation, not the response variables.

(a) In waters with unavailable parameters, new or increased discharges that would cause measurable degradation of the parameter that is unavailable shall not be authorized. Nor will discharges be authorized in such waters if they cause additional loadings of unavailable parameters that are bioaccumulative or that have criteria below current method detection levels.

(b) In waters with unavailable parameters, no new or expanded water withdrawals that will cause additional measurable degradation of the unavailable parameter shall be authorized.

(c) Where one or more of the parameters comprising the habitat criterion are unavailable, activities that cause additional degradation of the unavailable parameter or parameters above the level of de minimis shall not be authorized.

(3) Waters with available parameters

Available parameters exist where water quality is better than the levels specified in water quality criteria in Rule 1200-04-03-.03.

(a) In waters with available parameters, new or increased discharges that would cause degradation above the level of de minimis for any available parameter for any criterion will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and the degradation will not violate the water quality criteria for uses existing in the receiving waters.

(b) In waters with available parameters, new or expanded water withdrawals that would cause degradation above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters.

(c) In waters with available parameters, an activity that would cause degradation of habitat above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water

quality criteria for uses existing in the receiving waters.

(4) Exceptional Tennessee Waters

(a) Exceptional Tennessee Waters are waters that are in any one of the following categories:

1. Waters within state or national parks, wildlife refuges, forests, wilderness areas, or natural areas;

2. State Scenic Rivers or Federal Wild and Scenic Rivers;

3. Federally-designated critical habitat or other waters with documented non-experimental populations of state or federally-listed threatened or endangered aquatic or semi-aquatic plants, or aquatic animals;

4. Waters within areas designated as Lands Unsuitable for Mining pursuant to the federal Surface Mining Control and Reclamation Act where such designation is based in whole or in part on impacts to water resource values;

5. Waters with naturally reproducing trout;

6. Waters with exceptional biological diversity as evidenced by a score of 40 or 42 on the Tennessee Macroinvertebrate Index (or a score of 28 or 30 in subecoregion 73a) using protocols found in TDEC's 2011 Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys, provided that the sample is considered representative of overall stream conditions; or

7. Other waters with outstanding ecological, or recreational value as determined by the Department. When application of this provision is a result of a request for a permit, such preliminary determination is to be made within 30 days of receipt of a complete permit application.

(b) The Department will maintain a list of waterbodies that have been reviewed and are known to have one or more of the above characteristics on its website and will make paper copies of that list available upon request.

(c) Authorization of Activities in Exceptional Tennessee Waters

1. In waters identified as Exceptional Tennessee Waters new or increased discharges that would cause degradation of any available parameter above the level of de minimis and discharges of domestic wastewater will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters. At the time of permit renewal, previously authorized discharges, including upstream discharges, which presently degrade Exceptional Tennessee Waters above a de minimis level, will be subject to a review of updated alternatives analysis information provided by the applicant, but not to a determination of economic/social necessity. Public participation for these existing discharges will be provided in conjunction with permitting activities. Sources exempted from permit requirements under the Water Quality Control Act should utilize all cost-effective and reasonable best management practices.

2. In waters identified as Exceptional Tennessee Waters, new or increased water withdrawals that would cause degradation of any available parameter above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters.

3. In waters identified as Exceptional Tennessee Waters, an activity that would cause

degradation of habitat above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters.

(d) Determination of Economic/Social Necessity - The Department's determination that degradation of Exceptional Tennessee Waters resulting from a proposed discharge, habitat alteration or water withdrawal is, or is not, necessary to accommodate important economic and social development in the area shall be subject to review by the Board of Water Quality, Oil and Gas under the following procedures.

1. If the Department determines that an activity that would cause degradation above a de minimis level of Exceptional Tennessee Waters is necessary to accommodate important economic or social development in the area, it shall give notice to the applicant, the public, and federal and state agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and advisory councils for historic preservation. In the case of an application for a discharge, this notice may be combined with the notice of a draft permit under Rule 1200-04-05-.06. In the case of an application for a habitat alteration or water withdrawal, this notice shall be given by being posted on the department's web site and by sending email to persons who have asked to be notified of permit actions. Within 30 days after the date of the notification, any affected intergovernmental coordination agency or affected third person may petition the Board for a declaratory order under Tennessee Code Annotated § 4-5-223, and the Board shall convene a contested case. After the Board has convened a contested case in response to a declaratory order petition under this part, the Department shall within 5 business days thereafter transmit the petition to the Administrative Procedures Division of the Secretary of State so the contested case may be docketed and an administrative law judge may be assigned to the case. If a declaratory order petition is timely filed, the Department shall not proceed further in processing the permit application until the petition has been resolved before the Board. In the contested case, the petitioner shall have the burden of proof, and the Department's determination shall carry no presumption of correctness before the Board. The applicant is a necessary party to the declaratory order contested case, and if the applicant does not participate in the contested case, the Board shall render a decision that degradation is not necessary to accommodate important economic or social development in the area. If no intergovernmental coordination agency or third person petitions for a declaratory order within 30 days of the notification date, or if one is filed after the 30 days expires, then the Department shall proceed with processing the permit application.

2. A declaratory order contested case conducted under this subparagraph shall be subject to the following procedures. Mediation may occur if all the parties agree. Any proposed agreed order resulting from mediation shall be subject to approval by the Board. In order to provide for an expedited proceeding, the contested case is subject to the following time limitations. The time periods specified in this part shall commence on the day after the contested case has been docketed by the Administrative Procedures Division of the Secretary of State and an administrative law judge has been assigned to the case. Any alteration of the time periods set out in this part shall be granted only upon agreement of all the parties, or when there have been unforeseen developments that would cause substantial prejudice to a party, or when the parties have agreed to mediation. Within 20 days, the parties shall confer to try and develop a proposed agreed scheduling order. If the parties are unable to agree, then each party shall submit a proposed scheduling order, and the administrative law judge, after a hearing, shall enter a scheduling order. All discovery shall be completed no later than 20 days prior to the date the hearing before the Board is to begin. Within 120 days, the hearing before the Board shall begin, but the Board on its own initiative may exceed 120 days to complete the hearing and render its final decision. In order for degradation of Exceptional Tennessee Waters to proceed pursuant to these rules, the Board must make a finding approving degradation by a majority vote of the members of the Board present and voting.

3. If the Department determines that degradation is not necessary to accommodate

important economic or social development in the area, it will notify the applicant, the federal and state agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and advisory councils for historic preservation, and third persons who have asked to be notified of permit actions. The Department also will issue a tentative decision to deny the permit because degradation is not necessary. In accordance with paragraph (4) of Rule 1200-04-05-.06, the Department will provide the public with notice of and an opportunity to comment on its tentative denial decision. If no public hearing is requested within the 30 day public comment period, and if the Department does not alter its tentative decision to deny, the Department shall notify the applicant of its final decision to deny the permit because degradation is not necessary. Within 30 days after receiving notice of the final decision to deny the permit, the applicant may seek review of the decision that the degradation is not necessary to accommodate important economic or social development in the area in a contested case before the Board in accordance with Tennessee Code Annotated § 69-3-105(i). Within 5 business days after the Department receives an applicant's written request for a contested case hearing before the Board, the Department shall transmit the written request to the Administrative Procedures Division of the Secretary of State so the contested case may be docketed and an administrative law judge may be assigned to the case. In the contested case, the applicant shall have the burden of proof, and the Department's determination shall carry no presumption of correctness before the Board. The federal and state intergovernmental coordination agencies, and third persons who requested notification of the Department's degradation determination will be notified by the Department of the applicant's permit appeal. The intergovernmental coordination agencies and third persons may seek to intervene in the contested case in accordance with Tennessee Code Annotated § 4-5-310.

(5) Outstanding National Resource Waters

(a) The following streams or portions of streams are designated as ONRW:

	WATERBODY	PORTION DESIGNATED AS ONRW
1.	Little River	Portion within Great Smoky Mountains National Park.
2.	Abrams Creek	Portion within Great Smoky Mountains National Park.
3.	West Prong Little Pigeon River	Portion within Great Smoky Mountains National Park upstream of Gatlinburg.
4.	Little Pigeon River	From the headwaters within Great Smoky Mountains National Park downstream to the confluence of Mill Branch.
5.	Big South Fork Cumberland River	Portion within Big South Fork National River and Recreation Area.
6.	Reelfoot Lake	Tennessee portion of the lake and its associated wetlands.

7. The portion of the Obed River that is designated as a federal wild and scenic river as of June 22, 1999 is designated as ONRW, provided however, that if the current search for a regional water supply by the Cumberland Plateau Regional Water Authority results in a determination that it is necessary to utilize the Obed River as its source of drinking water, for that purpose the Obed shall be designated as an Exceptional Tennessee Water and any permit issued for that project, whether state, federal, or otherwise, shall be considered under the requirements for Exceptional Tennessee Waters.

(b) The Department may recommend to the Board of Water Quality, Oil and Gas that certain waterbodies be designated as Outstanding National Resource Waters (ONRWs). These shall be high quality waters which constitute an outstanding national resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance. Designation of ONRWs must be made by the Board of Water Quality, Oil and Gas

and will be accomplished in accordance with Section 69-3-105(a)(1) of the Tennessee Water Quality Control Act and through the appropriate rulemaking process.

1. In surface waters designated by the Board of Water Quality, Oil and Gas as ONRWs, no new discharges, expansions of existing discharges, water withdrawals or mixing zones will be permitted unless such activity will not result in either measurable degradation or discernible effect. At the time of permit renewal, previously authorized discharges, including upstream discharges and withdrawals, which presently degrade an ONRW, will be subject to alternatives analysis. Public participation for these existing discharges will be provided in conjunction with permitting activities.

2. In waters designated by the Board of Water Quality, Oil and Gas as ONRWs, no new or increased habitat alteration that would cause degradation of habitat above the level of de minimis or degrade water chemistry for more than a short duration will be authorized.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.07 Ground Water Classification

(1) Purpose and Intent

(a) It is one of the primary goals of the Tennessee Water Quality Control Act, Tennessee Code Annotated (T.C.A.) §§ 69-3-101 et seq. (the "Act") to protect our valuable ground water resource. This rule classifies ground water across the state based on the factors stated in T.C.A. § 69-3-105(a)(2) of the Act and establishes ground water quality criteria. The quality of ground water varies in Tennessee. Some ground water is sufficient to be used by our citizens directly as a drinking water supply with limited or no treatment. Other ground water would require more extensive treatment before it could be used as a water supply. Further, some ground water may be of such value as to warrant special protection. The board recognizes that some water below the surface of the ground may be present in a zone of aeration between ground surface and the water table. The zone of aeration is where treatment from household septic systems occurs and water in the zone of aeration is not classified as ground water in these regulations. Perched water above the zone of saturation may, in some areas, be used as a water supply or may migrate to either ground water or surface water and is included in these regulations to protect for its direct use or impact on ground water or surface water. Additionally, some ground water has levels of naturally occurring constituents that make the resource unusable as a drinking water supply.

(b) The board recognizes these rules apply to both permitting activities and response actions that involve water beneath the surface of the ground. The permitting of underground injection is governed by Rule Chapter 0400-45-06.

(c) These rules provide appropriate flexibility in the regulatory process to protect our ground water resource and to allow the productive use of land. Reuse of brownfield areas is encouraged and reduces the use of greenfield areas.

(d) The board recognizes that several divisions within the department have a role in protecting ground water resources. It is not the intent of these rules to change the responsibilities of those programs. It is, however, the intent of these rules to provide a basis for decisions involving ground water that may be applied by all divisions of the department. The board does not intend these rules to affect in any way the ability of the State to seek natural resource damages from responsible parties when ground water has been contaminated by human activity.

(e) Ground water that enters a stream or other water classified as surface water becomes surface water and is subject to respective criteria applicable to that water. The board expects that the department will use prudent judgment where ground water mixes with water on the surface of the ground.

(2) Definitions

(a) "Area of Control" means a volume designated by the commissioner underlying or surrounding a site, including the zone of aeration and the zone of saturation, containing water, some of which

the commissioner has determined not to meet applicable criteria.

(b) "Ground Water" means water beneath the surface of the ground within the zone of saturation, whether or not flowing through known and definite channels.

(c) "Perched water" means water that accumulates above an aquitard that limits downward migration where there is an unsaturated interval below it, between the aquitard and the zone of saturation.

(d) "Point of Classification Change" means the boundary of the volume within which ground water is classified as Site Specific Impaired as established under Rule 1200-04-03-.09.

(e) "Response action" means a clean up, remedial action, remedy, remedial investigation or other action taken by the department to address the presence of contaminants at levels that have been determined by the Department to require an appropriate response.

(f) "Zone of Aeration" means a subsurface zone extending from the water table to the surface of the land.

(g) "Zone of Saturation" means a subsurface zone below the water table in which all of the interconnected voids and pore spaces are filled with water.

(3) Water in the Zone of Aeration

Water in the zone of aeration is not defined as ground water in this rule, but it may occur as perched water. This perched water may be above ground water of any of the classifications used in this rule. Perched water is protected under this rule in accordance with its use as follows:

(a) Perched water that is used for drinking water or reasonably anticipated to be used as a drinking water supply shall meet the criteria listed for General Use in Rule 1200-04-03-.08(2). Other perched water shall not contain constituents, other than of natural origin, that cause or are reasonably likely to cause a violation of criteria of underlying ground water or surface water where the perched water enters those waters.

(b) Except for naturally occurring levels, perched water shall contain no other constituents at levels and conditions that pose an unreasonable risk to public health or the environment.

(c) If perched water, such as in a cave system, is habitat for fish and aquatic life, it shall contain no constituents except for naturally occurring substances at levels and concentrations that violate the criteria of Rule 1200-04-03-.03(3) for fish and aquatic life.

(4) Water below the surface of the ground is classified as follows:

(a) Special Source Waters

This is ground water or perched water with exceptional quality or quantity, which may serve as a valuable source for water supply or which is ecologically significant.

When the board finds water to be Special Source Water, then through the rulemaking process, the board will amend these rules to include the specific location and the boundaries of ground water or perched water designated as Special Source Water. To initiate this process, a petition shall address the factors listed below for board consideration. Any cost involved in making the petition shall be borne by the petitioner. In making this decision, the board may consider the following factors and relevant public input:

1. The vulnerability of the water in the proposed area to contamination due to hydrogeologic characteristics;

2. The number of persons or the proportion of the population using the water as a drinking water supply;

3. Existing water quality in the proposed Special Source Water area;

4. An evaluation of the ecological and environmental impact should the quality of the Special Source Water be compromised; and

5. Other pertinent information as deemed necessary by the petitioner, department, or board. Because such action is a rulemaking procedure, public input may be made as provided in the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et. seq., but not as a contested case under T.C.A. §§ 4-5-301 et seq.

(b) General Use Ground Water

Except for ground water in areas that have been designated as Special Source Water, Site Specific Impaired Ground Water, or meet the definition of Unusable Ground Water, all ground water is designated General Use Ground Water.

(c) Site Specific Impaired Ground Water

This is ground water that has been contaminated by human activity and the board finds that either it is not technologically feasible to remediate the ground water to the criteria required by other classifications or it is not reasonable to remediate to that criteria based on information provided in accordance with Rule 1200-04-03-.09. Ground water shall be classified as Site Specific Impaired upon approval of a petition to the Water Quality Control Board and completion of the rulemaking process to amend these rules to identify the reclassified ground water. When ground water is reclassified to Site Specific Impaired the areal extent of the Site Specific Impaired Ground Water shall be delineated. The boundaries of the Site Specific Impaired Ground Water cannot extend beyond the perimeter and depth investigated with an appropriate safety factor as determined under Rule 1200-04-03-.09. Figures which clearly depict the horizontal and vertical boundaries of the Site Specific Impaired Ground Water must be submitted to the department in the plans/reports required by Rule 1200-04-03-.09.

(d) Unusable Ground Water

Ground water in the following areas are classified as Unusable Ground Water:

1. A "High Dissolved Solids Zone" is an area in which ground water has naturally occurring total dissolved solids of more than 10,000 ppm.

2. A "Historical Injection Zone" is an area in which the ground water and the injection zone designated to receive fluids and other substances from deep well injection initiated prior to September 1985 and operated under compliance with the Department at the time of injection is no longer subject to injection. The certification as a historical injection zone subclass of Unusable Ground Water does not provide authorization for future injection activities and shall not be construed as Class I zone designation under Rule Chapter 0400-45-06, Underground Injection Control. The zone may be subsequently considered for Class I zone designation under that Rule Chapter provided it meets the criteria based on naturally occurring conditions and not from changes as a result of the previously injected fluids.

3. A "Class I Injection Zone" is an area in which ground water has been demonstrated by a permit applicant as a part of a Class I operation under Rule Chapter 0400-45-06, Underground Injection Control, to be suitable for Class I injection.

4. A "Class II or III Injection Zone" is an area in which ground water is mineral, hydrocarbon or geothermal energy producing, or has been demonstrated by a permit applicant as a part of a permit application for a Class II or III operation under Rule Chapter 0400-45-06 Underground Injection Control to contain minerals or hydrocarbons that, considering their quality and location, are expected to be commercially producible. The designation as Class II or III injection zone subclass of Unusable Ground Water shall not be construed as a Class I zone designation under Rule Chapter 0400-45-06, Underground Injection Control.

5. An "Acid Production Zone from Mining Activities" is an area in which ground water occurs within an excavated area where reaction with naturally occurring minerals generates acid rock drainage or acid mine drainage. An excavated area may be a surface or underground mined area as well as a subsidence area whether or not the mined area is backfilled. Ground water beyond the excavated area is classified as described elsewhere in this rule.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.08 Criteria

The water quality criteria for the different classes are as follows:

(1) Special Source Water

The board will consider the special protection needs of any water identified as Special Source Water and promulgate criteria at the time of designation.

(2) General Use Ground Water

Except for naturally occurring levels, General Use Ground Water:

(a) shall not contain constituents that exceed those levels specified in Rules 1200-04-03-.03(1)(j) and (k); and

(b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health or the environment.

(3) Site Specific Impaired Ground Water

Except for naturally occurring levels, Site Specific Impaired Ground Water:

(a) shall contain no substances, whether alone or in combination with other substances , that are toxic, carcinogenic, mutagenic or teratogenic, other than those of natural origin, at levels and conditions which pose an unreasonable risk to public health or the environment;

(b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health or the environment;

(c) shall contain no constituents at levels that will prevent ground waters beyond the point of classification change from meeting the classification and criteria for those waters; and

(d) other criteria established by the board as appropriate to the site.

(4) Unusable Ground Water

Except for naturally occurring levels, Unusable Ground Water:

(a) shall contain no substances, whether alone or in combination with other substances, that are toxic, carcinogenic, mutagenic or teratogenic, other than those of natural origin, at levels and conditions which pose an unreasonable risk to the public health;

(b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health;

(c) shall not discharge to surface water causing a violation of surface water quality criteria or biological integrity; and

(d) naturally occurring levels as used in subparagraph (a) of this paragraph shall include the natural minerals, mining wastes, and the reaction products of oxidation and reduction associated with these materials in Unusable Ground Water in an Acid Production Zone from Mining Activities.

These substances shall not pose an unreasonable public health or safety risk to the public. Physical barriers and institutional controls satisfy that requirement.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.09 Site Specific Impaired Classification Petition Process

(1) Any person who encounters ground water that may meet the requirements for Site Specific Impaired, may petition the board to adopt a rule reclassifying that ground water as Site Specific Impaired, using the process set forth in this rule. Any costs involved in making the petition shall be borne by the petitioner. The petition shall include the following, unless it is determined by the department in writing that the site conditions render any of them unnecessary:

(a) An assessment of the horizontal and vertical extent of the contamination;

(b) An evaluation of the hydrogeology of the area including but not limited to the ground water flow rate and direction, permeability, recharge area, ground water classification and location of local water wells, springs and seeps;

(c) An evaluation of the area geology including, but not limited to, soil type, soil permeability, soil porosity, depth to bedrock, and identification of geologic formations;

(d) A description of the corrective actions or response actions taken or proposed;

(e) The chemical characteristics of the constituents(s) including, but not limited to, the constituent's solubility, mobility, toxicity, and carcinogenicity, the nature of and the level of constituents to remain or be present in the ground water and the calculations and rationale used in the determination;

(f) A feasibility study, which evaluates clean-up alternatives, the cost, and the time to complete each alternative;

(g) An evaluation of current and reasonably anticipated future ground water use within the proposed site specific impaired area and within a one-half (1/2) mile radius of the proposed Site Specific Impaired area; the impact of conduit flow shall be evaluated in karst areas;

(h) An evaluation of current and reasonably anticipated future land uses within the proposed Site Specific Impaired area and within a one-half (1/2) mile radius of the proposed Site Specific Impaired area;

(i) An evaluation of the potential of the constituent to migrate through soil and ground water to:

1. homes;

2. buildings;

3. surface waters;

4. subsurface utilities; and

5. adjacent properties.

(j) A description of any existing or proposed monitoring program to observe constituent levels in soil and ground water;

(k) Evaluation of the existing or anticipated actual exposure pathways (inhalation, ingestion, dermal contact, etc.) of the constituents and an assessment of the human health risks presented by exposure to the constituents as well as the impact, if any, of the constituents on fish and aquatic life pursuant to Rule Chapter 1200-04-03;

(l) Consideration of the classification in Rule 1200-04-03-.07 that would apply to the ground water at

the site if it were not contaminated;

(m) Analysis of the benefits of the restored resource;

(n) A description of how and when the contamination occurred, if known;

(o) A plat map with the proposed site-specific ground water area superimposed on it that shows all property owners for properties included in the Site Specific Impaired classification with contact information for owners of each property and identification and contact information for the parties paying property taxes on each property in the proposed Site Specific Impaired classification area; and

(p) Other items as requested by the department associated with the evaluation of the petition.

(2) Because Site Specific Impaired classification is a rulemaking procedure, public input may be made as provided in the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et seq., but not as a contested case under T.C.A. §§ 4-5-301 et seq. In addition to the requirements for public input under the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et seq., the petitioner shall, at a minimum, notify the party of record paying property taxes for each property subject to the Site Specific Impaired classification of the petition and the process for submitting comments on said petition. The petitioner shall provide a copy of such notification to the department.

(3) In the evaluation of a petition to classify ground water as Site Specific Impaired, the board may consider the following:

(a) the extent of any threat to human health or safety;

(b) the extent of damage to the environment;

(c) technology commercially available to accomplish restoration;

(d) a comparison of the environmental and economic costs and benefits to be derived from ground water quality restoration with the environmental and economic costs and benefits to be derived from classification as Site Specific Impaired;

(e) analysis of the restored resource;

(f) the point of classification change;

(g) contaminant or pollution source identification and cleanup;

(h) public comments; and

(i) other appropriate information presented in the petition.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.10 Remediation of Ground Water or Perched Water

(1) When a release or other event occurs that causes subsurface water to not meet the criteria in these rules, the commissioner has authority under a number of statutes to cause remediation of the water. These statutes include the Solid Waste Disposal Control Act, T.C.A. §§ 68-211-101 et seq., the Hazardous Waste Management Act, parts 1 and 2, T.C.A. §§ 68-212-101 et seq., and §§ 68-212-201 et seq., the Petroleum Underground Storage Tank Act, T.C.A. §§ 68-215-101 et seq., and the Drycleaner Environmental Response Act, T.C.A. §§ 68-217-101 et seq. The goals of all such remediation actions are:

(a) to return waters to meeting standards when practicable by such methods as source removal, bioremediation, pump and treat, and natural attenuation; and

(b) to protect the public from exposure to water that does not meet standards through such methods

as physical and institutional controls.

(2) In order to accomplish these goals the commissioner may establish an Area of Control when contamination has caused water to exceed the standards in these rules. In establishing an Area of Control, the commissioner shall use the authorities of the remediation statutes and rules to;

(a) describe the extent of an Area of Control; and

(b) protect the public from exposure to the water in the Area of Control.

Where the commissioner identifies the source of pollution or water of sufficient contamination as to warrant contaminant mass reduction, he may further prescribe the actions to be taken to reduce the levels of contamination within the Area of Control.

(3) The commissioner may establish such an Area of Control for water contaminated by human activity prior to November 19, 1980 if there are no liable parties as defined in T.C.A. § 68-212-202 (3) (B), (C), or (D) and the current property owner did not cause the water contamination. This could be done in conjunction with imposing land use restrictions to protect the public from any harm caused by the site whether or not the department expends funds to remediate the site. In establishing such an Area of Control, the commissioner may use the authorities of the remediation statutes and rules to:

(a) describe the extent of an Area of Control;

(b) prescribe the actions to be taken to reduce the levels of contamination within the Area of control; and

(c) protect the public from exposure to the water in the Area of Control.

(4) Any current or future "alternate concentration limit" or "ground water protection standard" established within a Tennessee Hazardous Waste Management enforceable document in accordance with Tennessee Rule Chapter 1200-1-11-.06 identifies an Area of Control in accordance with this Rule. Compliance with the enforceable document constitutes compliance with the remediation actions identified in paragraph (1) of this Rule.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.11 Classified Site Specific Impaired Ground Water and Respective Criteria

The following ground water is classified as site specific impaired ground water with the respective criteria:

(1) Porter Cable

(a) Description of the site

The area of ground water classified is the ground water within the boundaries of the Porter Cable/Rockwell facility that is within the rectangle with the following boundary points to a depth equivalent to 250 feet mean sea level.

Northwest boundary point...35°44'27.5"N, 88°51'19.8"W

Northeast boundary point ...35°44'27.5"N, 88°51'05.7"W

Southwest boundary point...35°44'13.8"N, 88°51'19.8"W

Southeast boundary point... 35°44'13.8"N, 88°51'05.7"W

A solvent plume under the western edge of the building is moving very slowly to the north-northwest. Since the plant began operation in the mid-1970's, the plume has migrated approximately 400 feet, with the property boundary another 1500 feet down gradient. Sampling has shown that the plume is degrading to a certain extent by natural and biologic processes, and this process can be enhanced with the addition of nutrients to fuel the biologic activity in the

contaminated zone.

(b) Criteria

Nutrient addition is allowed to promote enhanced natural attenuation of the plume in accordance with the remediation remedy being used at the site. Deed restrictions will insure the site will not be used as residential and that ground water will not be used for potable purposes. The point of classification change is totally within the boundaries of the Porter-Cable facility. The plume shall not cross the point of classification change at levels exceeding general use criteria.

(2) Isabella Mine Pit

(a) Description of the site

The area of ground water classified is the ground water in mined areas of the former Isabella/Eureka Mine, the connected Isabella pit, ground water between the Isabella pit and North Potato Creek, and an approximate 500 foot buffer around the mined areas. This ground water classification applies to part of the land that was previously abandoned by the bankruptcy court and is now either under control of a court-appointed receiver or trustee for the Irrevocable Trust of the Tennessee Chemical company (receiver or trustee). If the 500 foot buffer boundary would extend beyond a property line, then the property line shall be the point of classification change. The depth of ground water classification is from ground surface to 1400 feet. The mined areas are delineated as shown on the former mining company's mine maps. The point of classification change for this area is the outer boundary of the area classified as described above and a depth of 1400 feet.

There is a bulkhead or plug between the Isabella/Eureka Mine and the Burra Burra Mine and this Site Specific Impaired classification includes the drift between the Isabella and Burra Burra Mines on the Isabella side of the drift plug but does not apply to water in the Burra Burra Mine. The drift does not require a 500-foot wide buffer zone.

(b) Criteria

The Site Specific Impaired Ground Water criteria for the water in the Isabella pit, associated Isabella/Eureka mine workings, and ground water between the Isabella pit and North Potato Creek shall be:

1. Any concentration of inorganic constituents or elements associated with acid mine drainage and any pH or other physical standard associated with acid mine drainage;

2. Any concentration of inorganic constituents or elements associated with approved backfilling or addition of ore, waste rock, calcine, concentrate, granulated slag, tailings, or other acid-generating materials from historic mining and ore beneficiation processes in the Copper Basin;

3. Criteria for other constituents are those required for General Use Ground Water as of November 3, 2004;

4. The continued use of institutional controls to avoid the potential for human contact with this ground water; and

5. Institute a monitoring program, acceptable to TDEC, that monitors the water level in the pit and is sufficient to assure protection of human health and the environment.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.12 Reporting Requirement

(1) The board acknowledges that the General Assembly has given it the authority to promulgate rules for the prevention, control, and abatement of pollution in T.C.A. § 69-3-105(b). The board finds a necessary first step toward controlling and abating pollution is becoming aware of the situation. This is especially

needed in the case of ground water, as it is not in plain view as surface water often is. Furthermore, once the department has documents relating to an instance of pollution, they are generally going to be open to the public. Making the public aware of pollution both increases the likelihood that the pollution will be abated and that the public will be able to take appropriate action to reduce harmful exposure. These findings, in addition to the provision of T.C.A. § 69-3-114(b) making it unlawful to refuse to furnish any information required by the Board, are the basis for the requirement stated in paragraph (2) of this rule.

(2) Owners or prospective purchasers of property used for commercial or industrial purposes who test the ground water or perched water on the property shall notify the commissioner of any contamination of such water if it is currently used as potable water and it exceeds general use criteria or if an environmental professional engaged by such owner or prospective purchaser reasonably concludes that it poses some other substantial risk to health or safety, including but not limited to, situations in which vapors released from the water are causing an explosion hazard or a current inhalation hazard with a hazard quotient of greater than 1 or a cancer risk of greater than 1×10^{-6}

(3) Routine sampling and reporting of ground water or perched water data required by an agency of the Department as part of a regulatory program obligation shall constitute reporting for the purposes of this rule.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

Chapter 1200-04-04
Use Classifications for Surface Waters

Amendments

Chapter 1200-04-04 Use Classifications for Surface Waters is deleted in its entirety and replaced with the following so that, as amended, Chapter 1200-04-04 shall read as follows:

Chapter 1200-04-04
Use Classifications for Surface Waters

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Abbreviations for Designated Uses and Trout Streams:

Domestic Water Supply	DOM
Industrial Water Supply	IWS
Fish and Aquatic Life	FAL
Trout Stream	TS
Naturally Reproducing Trout Stream	NRTS
Recreation	REC
Livestock Watering and Wildlife	LWW
Irrigation	IRR
Navigation	NAV

1200-04-04-.01 Memphis Area Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mississippi-Tennessee State Line (Mile 714.0) to Upstream End of Loosahatchie Bar (Mile 741.0)		X	X	X	X	X	X		
McKellar Lake	Mouth on Mississippi R. to Origin		X	X	X			X		
Nonconnah Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf River	Mile 0.0 to 6.7 (L & N Railroad Bridge)			X	X	X	X			
Cypress Creek	Mile 0.0 to origin			X	X	X	X			
Wolf River	Mile 6.7 to Miss.-TN State Line (Mile 77.0)		X	X	X	X	X	X		
Loosahatchie River	Mile 0.0. to 20.9 (Austin Peay Hwy Bridge)			X	X	X	X			
Big Creek	Mile 0.0 to Origin			X	X	X	X			
North Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Crooked Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 3.0 of Crooked Creek	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 20.9 (Austin Peay Hwy) to 30.7			X	X	X	X			
Clear Creek Canal	Mile 0.0 to Origin at Mile 2.6 (Confluence of Hall Creek and Cypress Creek Canal)			X	X	X	X			
Cypress Creek Canal	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 30.7 to 45.5			X	X	X	X			
Middle Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
West Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
East Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Little Cypress Creek Canal	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 45.5 to 50.2			X	X	X	X			
Davis Creek	Mile 0.0 to Origin			X	X	X	X			
Town Branch	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 50.2 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Memphis Area Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.02 Hatchie River Basin

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mile 741.0 to 820.0	X	X	X	X	X	X	X		
Hatchie River	Mile 0.0 to Mile 129.0	X	X	X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Alston Creek	Mile 0.0 to Origin			X	X	X	X			
Big Muddy Canal	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib. to Mile 3.1 of Big Muddy Canal	Mile 0.0 to Origin			X	X	X	X			
Sugar Creek	Mile 0.0 to Origin			X	X	X	X			
Mill Creek	Mile 0.0 to 2.0			X	X	X	X			
Pugh Creek South	Mile 0.0 to Origin			X	X	X	X			
Mill Creek	Mile 2.0 to Origin			X	X	X	X			
Hatchie River	Mile 129.0 to Mile 131.0		X	X	X	X	X			
Hatchie River	Mile 131.0 to Miss-Tenn State Line (Mile 188.5)	X	X	X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Cypress Creek	Mile 0.0 to Origin			X	X	X	X			
Tuscumbia River	Mile 0.0 to Miss-Tenn State Line (Mile 10.5)	X		X	X	X	X			
Cypress Creek	Mile 0.0 to 14.2			X	X	X	X			
Cypress Creek	Mile 14.2 to 15.2			X	X	X	X			
Cypress Creek	Mile 15.2 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Hatchie Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.03 Obion-Forked Deer Basin

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mile 820.0 to Mile 905.0 (Kentucky State Line)	X	X	X	X	X	X	X		
Obion River	Mile 0.0 to Confluence of North and			X	X	X	X			
	South Fork Obion River (Mile 71.8)			X	X	X	X			
Running Reelfoot Bayou	Mile 0.0 to Reelfoot Lake Spillway			X	X	X	X			
Reelfoot Lake	Entirety			X	X	X	X			
Biffle Creek	Mile 0.0 to Origin			X	X	X	X			
Reeds Creek	Mile 0.0 to Origin			X	X	X	X			
Cool Springs Branch	Mile 0.0 to Origin			X	X	X	X			
North Fork Obion River	Mile 0.0 to Origin			X	X	X	X			
Hoosier Creek	Mile 0.0 to Origin			X	X	X	X			
First Creek	Mile 0.0 to Origin			X	X	X	X			
Grove Creek	Mile 0.0 to Origin			X	X	X	X			
Harris Fork Creek	Mile 0.0 to Kentucky-Tennessee State Line			X	X	X	X			
Walnut Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 3.8 of Walnut Fork Creek	Mile 0.0 to Origin			X	X	X	X			
South Fork Obion River	Mile 0.0 to 38.9 (Formed at Confluence of Beaver Creek and Crooked Creek)			X	X	X	X			
Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 9.8 of Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 11.0 of Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Brassfield Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 0.5 of Brassfield Creek	Mile 0.0 to Origin			X	X	X	X			
Rutherford Fork	Mile 0.0 to Origin			X	X	X	X			
Carroll Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
E. Fork Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 27.7 of Rutherford Fork	Mile 0.0 to Origin			X	X	X	X			
Middle Fork Obion River	Mile 0.0 to Origin			X	X	X	X			
Buckor Ditch	Mile 0.0 to Origin			X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Pritchett Branch	Mile 0.0 to Origin			X	X	X	X			
Bradford Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Reedy Creek	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	Mile 0.0 to Origin		X	X	X	X	X			
Crooked Creek	Mile 0.0 to Origin		X	X	X	X	X			
Guins Creek	Mile 0.0 to Origin		X	X	X	X	X			
Trib. to Mile 9.7 of Guins Creek	Mile 0.0 to Origin			X	X	X	X			
Forked Deer River	Mouth at Obion River Mile 3.3 to Mile 20.3 at Confluence of North and South Fork			X	X	X	X	X		
South Fork Forked Deer	Mile 0.0 to 48.8			X	X	X	X	X		
Nixon Creek	Mile 0.0 to Origin			X	X	X	X			
Little Nixon Creek	Mile 0.0 to Origin			X	X	X	X			
Old Channel Forked Deer- Trib. at Mile 35.8	Mile 0.0 to Origin			X	X	X	X			
South Fork Forked Deer River	Mile 48.8 to 70.3			X	X	X	X	X		
North Fork of South Fork Forked Deer River	Mile 0.0 to Origin			X	X	X	X			
Johnson Creek	Mile 0.0 to Origin			X	X	X	X			
Anderson Branch	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 0.0 to 1.2			X	X	X	X			
Trib. to Mile 1.0 of Turkey Creek	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 1.2 to Origin			X	X	X	X			
South Fork Forked Deer River	Mile 70.3 to Origin			X	X	X	X			
Sugar Creek	Mile 0.0 to Origin			X	X	X	X			
North Fork Forked Deer River	Mile 0.0 to 5.8			X	X	X	X	X		
North Fork Forked Deer River	Mile 5.8 to 33.9			X	X	X	X			
Middle Fork Forked Deer River	Mile 0.0 to Origin			X	X	X	X			
Mosquito Creek	Mile 0.0 to Origin			X	X	X	X			
Moize Creek	Mile 0.0 to Origin			X	X	X	X			
Dyer Creek	Mile 0.0 to Origin			X	X	X	X			
North Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Cow Creek	Mile 0.0 to Origin			X	X	X	X			
Sand Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
North Fork Forked Deer River	Mile 33.9 to Origin			X	X	X	X			
Trib. to Mile 857.5 of Mississippi River	Mile 0.0 to Origin			X	X	X	X			
Harris Ditch	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Obion-Forked Deer Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified.				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.04 Tennessee River Basin - Western Valley.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Mile 49.1 (Tenn-Ky Line) to 215.1 (Tn-Miss Line)	X	X	X	X	X	X	X		
Big Sandy River	Mile 0.0 to 15.1		X	X	X	X	X	X		
Big Sandy River	Mile 15.1 to Origin		X	X	X	X	X			
West Sandy Creek	Mile 0.0 to Origin			X	X	X	X			
Holly Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Bailey Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Big Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Little Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X		X	
S. Fk Hurricane Cr	Mile 0.0 to Origin			X	X	X	X			
Beaverdam Creek	First bridge above mouth to origin.			X	X	X	X		X	
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trace Creek	Mile 0.0 to Origin			X	X	X	X			
Cypress Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
North Indian Creek	Mile 0.0 to Origin			X	X	X	X			
Birdsong Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Eagle Creek	Mile 0.0 to Origin			X	X	X	X			
Morgan Creek	Mile 0.0 to Origin			X	X	X	X			
Beech River	Mile 0.0 to 7.2	X	X	X	X	X	X	X		
Beech River	Mile 7.2 to 27.4	X	X	X	X	X	X			
Beech River	Mile 27.4 to 30.4		X	X	X	X	X			
Beech River	Mile 30.4 to Origin	X	X	X	X	X	X			
Rushing Creek	Mile 0.0 to Origin			X	X	X	X			
Harmon Creek	Mile 0.0 to Origin			X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Doe Creek	Mile 0.0 to Origin			X	X	X	X			
East Prong Doe Creek	Mile 0.0 to Origin			X	X	X	X			
White Oak Creek	Mile 0.0 to Origin			X	X	X	X			
Little Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Horse Creek	Mile 0.0 to Origin			X	X	X	X			
Beason Creek	Mile 0.0 to Origin			X	X	X	X			
South Fork Beason Creek	Mile 0.0 to Origin			X	X	X	X			
Dollar Creek	Mile 0.0 to Origin			X	X	X	X			
Beech Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Leatherwood Creek	First bridge to origin			X	X	X	X		X	
E. Fork Leatherwood Cr	Mile 0.0 to second tributary			X	X	X	X		X	
N. Fork Leatherwood Cr	Mile 0.0 to second tributary			X	X	X	X		X	
Town Branch	Mile 0.0 to Origin			X	X	X	X			
Chambers Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Western Valley Tennessee River Basin, with the exception of wet weather conveyances,which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.05 Duck River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Duck River	Mile 0.0 to 67.0	X	X	X	X	X	X			
Blue Creek	Mile 0.0 to 14.0	X	X	X	X	X	X			
Blue Creek	Mile 14.0 to 16.2		X	X	X	X	X			
Blue Creek	Mile 16.2 to Origin			X	X	X	X			
Buffalo River	Mile 0.0 to 24.0	X	X	X	X	X	X			
Cane Creek	Hickman Co. line to Lewis Co. line			X	X	X	X		X	
Buffalo River	Mile 24.0 to 26.0		X	X	X	X	X			
Buffalo River	Mile 26.0 to 38.0	X	X	X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			X
Sinking Creek	Mile 0.0 to Origin			X	X	X	X		X	
Buffalo River	Mile 38.0 to 41.1		X	X	X	X	X			
Buffalo River	Mile 41.1 to Origin	X	X	X	X	X	X			
Green River	Mile 0.0 to 9.0	X	X	X	X	X	X			
Green River	Mile 9.0 to 11.7		X	X	X	X	X			
Green River	Mile 11.7 to Origin	X	X	X	X	X	X			
Rockhouse Creek	Mile 0.0 to 6.0	X	X	X	X	X	X			
Rockhouse Creek	Mile 6.0 to 9.5		X	X	X	X	X			
Rockhouse Creek	Mile 9.5 to Origin	X	X	X	X	X	X			
Little Buffalo River	Mile 0.0 to Origin			X	X	X	X		X	
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X		X	
Beaverdam Creek	Highway 100 to Sulfur Fork Cr			X	X	X	X			X
Sulfur Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Piney River	Mile 0.0 to Origin	X	X	X	X	X	X			X
Mill Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Little Spring Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Spring Creek	Mile 0.0 to Origin			X	X	X	X			X
Garner Creek	Mile 0.0 to Origin			X	X	X	X		X	
Bear Creek	Mile 0.0 to Origin			X	X	X	X			X
East Piney River	Mile 0.0 to 4.0	X	X	X	X	X	X			
East Piney River	Mile 4.0 to 6.1		X	X	X	X	X			
East Piney River	Mile 6.1 to Origin	X	X	X	X	X	X			
Defeated Camp Creek	Mile 0.0 to 4.4		X	X	X	X	X			
Defeated Camp Creek	Mile 4.4 to Origin			X	X	X	X			
Defeated Branch	Mile 0.0 to Origin			X	X	X	X			
Duck River	Mile 67.0 to 71.5		X	X	X	X	X			
Duck River	Mile 71.5 to 123.2	X	X	X	X	X	X			
Big Bigby Creek	Mile 0.0 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Sugar Fork	Mile 0.0 to 1.9	X	X	X	X	X	X			
Sugar Fork	Mile 1.9 to 2.9		X	X	X	X	X			
Sugar Creek	Mile 0.0 to 0.7		X	X	X	X	X			
Sugar Creek	Mile 0.7 to Origin	X	X	X	X	X	X			
Quality Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Big Swan Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Little Swan Creek	Mile 0.0 to Origin			X	X	X	X		X	
Cathey's Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Duck River	Mile 123.2 to 127.2		X	X	X	X	X			
Little Bigby Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Rutherford Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Duck River	Mile 127.2 to 217.0	X	X	X	X	X	X			
Big Rock Creek	Mile 0.0 to 14.0	X	X	X	X	X	X			
Big Rock Creek	Mile 14.0 to 16.9		X	X	X	X	X			
Big Rock Creek	Mile 16.9 to Origin	X	X	X	X	X	X			
Duck River	Mile 217.0 to 221.3		X	X	X	X	X			
Duck River	Mile 221.3 to 244.0	X	X	X	X	X	X			
Duck River	Mile 244.0 to 248.6 (Normandy Dam)	X		X	X	X	X		X	
Duck River	Mile 248.6 to 266.5	X	X	X	X	X	X			
Garrison Fork Creek	Mile 0.0 to 2.7	X	X	X	X	X	X			
Garrison Fork Creek	Mile 2.7 to 3.3		X	X	X	X	X			
Garrison Fork Creek	Mile 3.3 to Origin	X	X	X	X	X	X			
Duck River	Mile 266.5 to 268.5		X	X	X	X	X			
Duck River	Mile 268.5 to Origin	X	X	X	X	X	X			
Little Duck River	Mile 0.0 to Origin	X	X	X	X	X	X			
All other surface waters named and unnamed in the Duck River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.06 Elk River Basin (including Shoal Creek).

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Shoal Creek	Tenn-Ala State Line (Mile 20.6) to Mile 56.9	X	X	X	X	X	X			
Clack Branch	Mile 0.0 to Origin		X	X	X	X	X			
Loretto Branch	Mile 0.0 to Origin		X	X	X	X	X			
Little Shoal Creek	Mile 0.0 to Origin		X	X	X	X	X			
Shoal Creek	Mile 56.9 to Origin (Jct of B. Dry Branch & Beeler Fk)		X	X	X	X	X		X	
Factory Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Chisholm Creek	Mile 0.0 to Origin			X	X	X	X		X	
Crowson Creek	Mile 0.0 to Origin			X	X	X	X			X
Elk River	Tenn-Ala State Line (Mile 33.6) to 36.3	X	X	X	X	X	X	X		
Elk River	Mile 36.3 to 90.5	X	X	X	X	X	X			
Richland Creek	Mile 0.0 to 20.0		X	X	X	X	X			
Buchannan Creek	Mile 0.0 to Origin			X	X	X	X			
Richland Creek	Mile 20.0 to 23.3			X	X		X			
Richland Creek	Mile 23.3 to Origin	X	X	X	X	X	X			
Pigeon Roost Creek	Mile 0.0 to Origin		X	X	X	X	X			
Robertson Fork	Mile 0.0 to Origin		X	X	X	X	X			
Town Creek	Mile 0.0 to Origin		X	X	X	X	X			
Holland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Elk River	Mile 90.5 to 119.0	X	X	X	X	X	X			
Mulberry Creek	Mile 0.0 to Origin		X	X	X	X	X			
East Fork Mulberry Cr.	Mile 0.0 to 11.1		X	X	X	X	X			
East Fork Mulberry Cr.	Mile 11.1 to Origin	X	X	X	X	X	X			
Spring Branch	Mile 0.0 to Origin	X	X	X	X	X	X			
Elk River	Mile 119.0 to 133.3 (Tims Ford Dam)	X	X	X	X	X	X		X	
Elk River	Mile 133.3 to Origin	X	X	X	X	X	X			
Beans Creek	Mile 0.0 to Origin		X	X	X	X	X			
Factory Branch	Mile 0.0 to Origin		X	X	X	X	X			
Mathias Branch	Mile 0.0 to Origin		X	X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin		X	X	X	X	X			
Boiling Fork Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Wagner Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Rock Creek	Mile 0.0 to Origin		X	X	X	X	X			
Rollins Creek	Mile 0.0 to 2.5	X	X	X	X	X	X			
Rollins Creek	Mile 2.5 to Origin			X	X	X	X			
Mud Creek	Mile 0.0 to Origin		X	X	X	X	X			
Caldwell Creek	Mile 0.0 to Origin		X	X	X	X	X			

STREAM	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
All other surface waters named and unnamed in the Elk River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified			X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.07 Lower Tennessee River Basin (including Conasauga River).

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Tenn-Ala State Line (Mile 416.5) to the POT Light (Mile 448.0)	X	X	X	X	X	X	X		
Unnamed Tributary	At Tenn. River Mile 417.5; Mile 0.0 to Origin			X	X	X	X			
Battle Creek	Mile 0.0 to 17.3 (Martin Spring)	X	X	X	X	X	X		X	
Swedens Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Fiery Gizzard	Mile 0.0 to 4.5			X	X	X	X			
Little Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Little Fiery Gizzard Mile 0.6; Mile 0.0 to Origin			X	X	X	X			
Big Fiery Gizzard	Mile 4.5 to 5.5			X	X	X	X		X	
Big Fiery Gizzard	Mile 5.5 to Origin			X	X	X	X			
Battle Creek	Mile 17.3 to Origin	X	X	X	X	X	X			
Sequatchie River	Mile 0.0 to 3.5	X	X	X	X	X	X	X		
Sequatchie River	Mile 3.5 to 41.0	X	X	X	X	X	X			
Little Sequatchie River	Mile 0.0 to confluence of Sawmill Creek			X	X	X	X			
Little Sequatchie River	Confluence of Sawmill Creek to confluence of Grays Creek		X	X	X	X		X		
Little Sequatchie River	Confluence of Grays Creek to Origin			X	X	X	X			
Pocket Creek	Mile 0.0 to Origin			X	X	X	X		X	
Clifty Creek	Mile 0.0 to Origin			X	X	X	X			
Sewanee Creek	Mile 0.0 to 4.0			X	X	X	X			
Sewanee Creek	Mile 4.0 to Origin	X		X	X	X	X			
Holywater Creek	Mile 0.0 to Origin	X		X	X	X	X			
Scott Creek	Mile 0.0 to Origin	X		X	X	X	X			
Coops Creek	Mile 0.0 to Origin			X	X	X	X			
Sequatchie River	Mile 41.0 to 43.9			X	X	X	X			
Sequatchie River	Mile 43.9 to 74.0	X	X	X	X	X	X			
Sequatchie River	Mile 74.0 to 78.4			X	X	X	X			
Sequatchie River	Mile 78.4 to 105.9	X	X	X	X	X	X			
Sequatchie River	Mile 105.9 to 108.9	X	X	X	X	X	X		X	
Sequatchie River	108.8 to Origin			X	X	X	X			
Tennessee River	Mile 448.0 to 460.6 (Chattanooga Creek)		X	X	X	X	X	X		
Shoal Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Tenn. River Mile 458.7; Mile 0.0 to Origin			X	X	X	X			
Lookout Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
Chattanooga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Tennessee River	Mile 460.6 to 499.4 (Hiwassee)	X	X	X	X	X	X	X		
Citico Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
South Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Friar Branch	Mile 0.0 to Origin			X	X	X	X			
West Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Spring Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Mackey Branch	Mile 0.0 to Origin			X	X	X	X			
Ryall Springs Br.	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Tenn. River Mile 469.2; Mile 0.0 to Origin			X	X	X	X			
North Chickamauga Creek	Mile 0.0 to 13.2			X	X	X	X			
Unnamed Tributary	At N. Chickamauga Creek Mile 0.7; Mile 0.0 to Origin			X	X	X	X			
North Chickamauga Creek	Mile 13.2 to 15.0			X	X	X	X		X	
North Chickamauga Creek	Mile 15.0 to Origin			X	X	X	X			
Wolftever Creek	Mile 0.0 to Origin			X	X	X	X			
Sale Creek	Mile 0.0 to Origin			X	X	X	X			
Roaring Creek	Mile 0.0 to Origin			X	X	X	X			
Brush Creek	Mile 0.0 to Origin			X	X	X	X			
Hiwassee River	Mile 0.0 to 23.9	X	X	X	X	X	X	X		
Candies Creek	Mile 0.0 to Origin			X	X	X	X			
South Mouse Creek	Mile 0.0 to Origin			X	X	X	X			
Chatata Creek	Mile 0.0 to Origin			X	X	X	X			
Little Chatata Cr.	Mile 0.0 to Origin			X	X	X	X			
Chestuee Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Creek	Mile 0.0 to 1.9			X	X	X	X			
Middle Creek	Mile 1.9 to Origin	X		X	X	X	X			
Ocoee River	Mile 0.0 to Benton Station Bridge	X	X	X	X	X	X		X	
Ocoee River	Benton Station Bridge to mile 17.0	X	X	X	X	X	X			
Sylco Creek	Mile 0.0 to Origin			X	X	X	X		X	
Dutch Creek	Mile 0.0 to Origin			X	X	X	X		X	
Greasy Creek	Mile 0.0 to Origin			X	X	X	X			
Rock Creek	Mile 0.0 to Origin			X	X	X	X		X	
Clear Creek	Mile 0.0 to Origin			X	X	X	X		X	
Ocoee River	Mile 17.0 to Ocoee #3 Powerhouse		X	X	X	X	X			
Caney Creek (East Fork)	Mile 0.0 to Origin			X	X	X	X		X	
Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Goforth Creek	Mile 0.0 to Origin			X	X	X	X		X	
Ocoee River	Ocoee #3 Powerhouse to Rock Creek		X	X	X	X	X		X	
Rock Creek	Mile 0.0 to Origin			X	X	X	X		X	
Ocoee River	Rock Creek to mile 37.9 (Georgia-Tenn State Line)		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
West Fork Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
North Potato Creek	Mile 0.0 to North Carolina-Tenn State Line)			X	X	X	X			
Burra Creek	Mile 0.0 to 1.5			X	X	X	X			
Brush Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Belcher Creek	Mile 0.0 to Origin			X	X	X	X			
Deweese Creek	Mile 0.0 to Origin	X		X	X	X	X			
Conasauga Creek	Mile 0.0 to Cog Hill Mill Dam			X	X	X	X		X	
Conasauga Creek	Cog Hill Mill Dam to Ruralville Mill			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Crockett Spring Cr	Mile 0.0 to Origin			X	X	X	X			
Conasauga Creek	Ruralville Mill to Origin			X	X	X	X		X	
Gee Creek	Mile 0.0 to Origin			X	X	X	X			X
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Yellow Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Lost Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Lost Creek	Mile 0.0 to Origin			X	X	X	X		X	
Smith Creek	Mile 0.0 to Origin			X	X	X	X		X	
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			X
Turtletown Creek	Mile 0.0 to N. Carolina Line			X	X	X	X		X	
Brushy Creek	Mile 0.0 to N. Carolina Line			X	X	X	X		X	
Coker Creek	Joe Brown Highway to Origin			X	X	X	X		X	
Hiwassee River	Mile 23.9 to 34.4	X	X	X	X	X	X	X		
North Mouse Creek	Mile 0.0 to 10.0	X	X	X	X	X	X			
Spring Creek	Mile 0.0 to 18.7		X	X	X	X	X			
Spring Creek	Mile 18.7 to Origin			X	X	X	X			
Dry Valley Creek	Mile 0.0 to Origin			X	X	X	X			
North Mouse Creek	Mile 10.0 to 30.1		X	X	X	X	X			
Little North Mouse Cr.	Mile 0.0 to 4.1			X	X	X	X			
Little North Mouse Cr.	Mile 4.1 to Origin			X	X	X	X			
North Mouse Creek	Mile 30.1 to Origin			X	X	X	X			
Oostanaula Creek	Mile 0.0 to 26.0	X	X	X	X	X	X			
Oostanaula Creek	Mile 26.0 to 28.0		X	X	X	X	X			
Oostanaula Creek	Mile 28.0 to 33.8		X	X	X	X	X			
Oostanaula Creek	Mile 33.8 to 37.5	X	X	X	X	X	X			
Oostanaula Creek	Mile 37.5 to Origin			X	X	X	X			
Hiwassee River	Mile 34.4 to 64.9 (North Carolina Line)	X	X	X	X	X	X		X	
All other surface waters named and unnamed in the Lower Tennessee River Basin, with the exception of wet weather				X	X	X	X			

conveyances, which have not been specifically noted shall be classified

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.08 Upper Tennessee River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Mile 499.4 (Hiwassee) to 567.8 (Clinch)	X	X	X	X	X	X	X		
Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Little Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Broyles Branch	Mile 0.0 to Origin		X	X	X	X	X			
Piney River	Mile 0.0 to 5.5		X	X	X	X	X	X		
Piney River	Mile 5.5 to 6.5 (U.S. Hwy. 27 Bridge)	X	X	X	X	X	X			
Piney River	Mile 6.5 to Origin		X	X	X	X	X			
Town Creek	Mile 0.0 to Origin		X	X	X	X	X			
Whites Creek	Mile 0.0 to 5.1			X	X	X	X	X		
Whites Creek	Mile 5.1 to Origin			X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
Caney Creek	Mile 0.0 to Origin			X	X	X	X			
Post Oak Creek	Mile 0.0 to Origin			X	X	X	X			
Cardiff Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to 3.0			X	X	X	X		X	
Tennessee River	Mile 567.8 to 601.1	X	X	X	X	X	X	X		
Martin Branch	Mile 0.0 to Origin			X	X	X	X			
Stamp Creek	Mile 0.0 to Origin			X	X	X	X			
Greenbriar Branch	Mile 0.0 to Origin			X	X	X	X			
Hines Creek	Mile 0.0 to Origin			X	X	X	X			
Sweetwater Creek	Mile 0.0 to 9.4	X	X	X	X	X	X			
Bacon Creek	Mile 0.0 to Origin			X	X	X	X			
Sweetwater Creek	Mile 9.4 to 19.0			X	X	X	X			
Sweetwater Creek	Mile 19.0 to 21.0	X		X	X	X	X			
Sweetwater Creek	Mile 21.0 to Origin	X	X	X	X	X	X			
Unnamed Spring Branch	Mile 0.0 to Origin			X	X	X	X			
Little Tennessee River	Mile 0.0 to 19.0	X	X	X	X	X	X	X		
Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	Mile 0.0 to Origin			X	X	X	X			
Bat Creek	Mile 0.0 to Origin			X	X	X	X			
Tellico River	Mile 0.0 to 5.0	X	X	X	X	X	X	X		
Tellico River	Mile 5.0 to 28.0	X	X	X	X	X	X			
Ballplay Creek	Upper 7 miles			X	X	X	X		X	
Cane Creek	Mile 0.0 to Origin			X	X	X	X		X	
Tellico River	Mile 28.0 to 41.0	X		X	X	X	X		X	
Wildcat Creek	Mile 0.0 to Origin			X	X	X	X		X	
Turkey Creek	Mile 0.0 to Origin			X	X	X	X		X	

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Bald River	Mile 0.0 to Origin			X	X	X	X			X
Kirkland Creek	Mile 0.0 to Origin			X	X	X	X			X
Henderson Creek	Mile 0.0 to Origin			X	X	X	X			X
Barrett Branch	Mile 0.0 to Origin			X	X	X	X			X
Service Branch	Mile 0.0 to Origin			X	X	X	X			X
Brookshire Branch	Mile 0.0 to Origin			X	X	X	X			X
North River	Mile 0.0 to Origin			X	X	X	X			X
Long Branch	Mile 0.0 to Origin			X	X	X	X		X	
Hemlock Branch	Mile 0.0 to Origin			X	X	X	X		X	
McNabb Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Big Cove Branch	Mile 0.0 to Origin			X	X	X	X			X
Round Mountain Br	Mile 0.0 to Origin			X	X	X	X			X
Service Tree Br	Mile 0.0 to Origin			X	X	X	X			X
Sugar Cove Br	Mile 0.0 to Origin			X	X	X	X			X
Meadow Branch	Mile 0.0 to Origin			X	X	X	X			X
Roaring Br	Mile 0.0 to Origin			X	X	X	X			X
Indian Creek	Mile 0.0 to Origin			X	X	X	X			X
Panther Branch	Mile 0.0 to Origin			X	X	X	X			X
Tellico River	Mile 41.0 to 50.0 (TN - NC Line)	X	X	X	X	X	X			X
Sycamore Creek	Mile 0.0 to Origin			X	X	X	X			X
Rough Ridge Creek	Mile 0.0 to Origin			X	X	X	X			X
Little Tennessee River	Mile 19.0 to 30.0	X	X	X	X	X	X	X	X	
Citico Creek	Mile 4.5 to 16.0			X	X	X	X		X	
Jakes Creek	Mile 0.0 to 3.0			X	X	X	X			X
Slide Hollow	Mile 0.0 to 2.0			X	X	X	X		X	
Little Citico Creek	Mile 0.0 to 3.5			X	X	X	X			X
Jake Best Creek	Mile 0.0 to Origin			X	X	X	X			X
Doublecamp Creek	Mile 0.0 to Origin			X	X	X	X			X
Mill Branch	Mile 0.0 to Origin			X	X	X	X			X
Flint Branch	Mile 0.0 to Origin			X	X	X	X			X
Crowder Branch	Mile 0.0 to Origin			X	X	X	X			X
Citico Creek	Mile 16.0 to Origin			X	X	X	X			X
N. Fk Citico Creek	Mile 0.0 to Origin			X	X	X	X			X
Indian Valley Br	Mile 0.0 to Origin			X	X	X	X			X
South Fork Citico Creek	Mile 0.0 to Origin			X	X	X	X			X
Ike Camp Branch	Mile 0.0 to Origin			X	X	X	X			X
Falls Branch	Mile 0.0 to Origin			X	X	X	X			X
Cochran Creek	Mile 0.0 to mile 2.0			X	X	X	X		X	
Abrams Creek	Mile 0.0 to Origin			X	X	X	X			X
Panther Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Bell Cove Branch	Mile 0.0 to Origin			X	X	X	X		X	
Kingfisher Creek	Mile 0.0 to Origin			X	X	X	X		X	
Buckshank Branch	Mile 0.0 to Origin			X	X	X	X		X	
Rabbit Creek	Mile 0.0 to Origin			X	X	X	X			X
Hannah Branch	Mile 0.0 to Origin			X	X	X	X			X
Peckerwood Br	Mile 0.0 to Origin			X	X	X	X			X
Wilson Branch	Mile 0.0 to Origin			X	X	X	X		X	
Stony Branch	Mile 0.0 to Origin			X	X	X	X		X	
Arbutus Branch	Mile 0.0 to Origin			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Forge Creek	Mile 0.0 to Origin			X	X	X	X			X
Coalen Ground Br	Mile 0.0 to Origin			X	X	X	X		X	
Bower Creek	Mile 0.0 to Origin			X	X	X	X			X
Tipton Sugar Cove	Mile 0.0 to Origin			X	X	X	X		X	
Ekanneetlee Br	Mile 0.0 to Origin			X	X	X	X			X
Tater Branch	Mile 0.0 to Origin			X	X	X	X		X	
McCaulley Branch	Mile 0.0 to Origin			X	X	X	X		X	
Rowans Branch	Mile 0.0 to Origin			X	X	X	X			X
Anthony Creek	Mile 0.0 to Origin			X	X	X	X			X
Shop Creek	Mile 0.0 to Origin			X	X	X	X			X
Tabcat Creek	Mile 0.0 to Origin			X	X	X	X			X
Parson Branch	Mile 0.0 to Origin			X	X	X	X			X
Bible Creek	Mile 0.0 to Origin			X	X	X	X			X
Slickrock Creek	Tennessee portion			X	X	X	X			X
Little Slickrock Cr	Mile 0.0 to Origin			X	X	X	X			X
Little Tennessee River	Mile 30.0 to 49.7 (TN.-N.C. Line)	X	X	X	X	X	X		X	
Morgan Branch	Mile 0.0 to Origin			X	X	X	X			
Abrams Branch	Mile 0.0 to Origin			X	X	X	X			
First Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Tennessee River	Mile 601.1 to 636.6 (Little River)	X	X	X	X	X	X	X		
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Gallagher Creek	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek #1	Mile 0.0 to Origin	X	X	X	X	X	X			
Ten Mile Creek	From Sink to Origin			X	X	X	X			
Sinking Creek #2	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	Mile 0.0 to Origin			X	X	X	X			
Lackey Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Little River	Mile 0.0 to 33.0	X	X	X	X	X	X			
Polecat Branch	Mile 0.0 to Origin			X	X	X	X			
Stock Creek	Mile 0.0 to Origin			X	X	X	X			
McCall Branch	Mile 0.0 to Origin			X	X	X	X			
Russell's Branch	Mile 0.0 to Origin			X	X	X	X			
Pistol Creek	Mile 0.0 to Origin			X	X	X	X			
Duncan Branch	Mile 0.0 to Origin			X	X	X	X			
Culton Creek	Mile 0.0 to Origin			X	X	X	X			
Tedford Br	Mile 0.0 to Origin			X	X	X	X			
Hesse Creek	Upper 5 miles			X	X	X	X		X	
Cane Creek	Upper 2.0 miles			X	X	X	X		X	
Beard Cane Cr	Upper 1.5 miles			X	X	X	X		X	
Little River	Mile 33.0 to Origin	X		X	X	X	X			X
M. Pr. Little River	Mile 0.0 to Origin			X	X	X	X			X
W. Prong Little R.	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Mile 0.0 to Origin			X	X	X	X			X
Meadow Br	Mile 0.0 to Origin			X	X	X	X			X
Spruce Flats Br	Mile 0.0 to Origin			X	X	X	X			X
Sams Creek	Mile 0.0 to Origin			X	X	X	X			X
Thunderhead Pr	Mile 0.0 to Origin			X	X	X	X			X
Shut-in Cr	Mile 0.0 to Origin			X	X	X	X			X
Lynn Camp Prong	Mile 0.0 to Origin			X	X	X	X			X
Marks Creek	Mile 0.0 to Origin			X	X	X	X			X
Meigs Creek	Mile 0.0 to Origin			X	X	X	X			X
Little Greenbriar Creek	Mile 0.0 to Origin			X	X	X	X			X
Mannis Branch	Mile 0.0 to Origin			X	X	X	X			X
Blanket Creek	Mile 0.0 to Origin			X	X	X	X			X
Shields Branch	Mile 0.0 to Origin			X	X	X	X			X
Jakes Creek	Mile 0.0 to Origin			X	X	X	X			X
Newt Prong	Mile 0.0 to Origin			X	X	X	X			X
Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Fish Camp Prong	Mile 0.0 to Origin			X	X	X	X			X
Goshen Prong	Mile 0.0 to Origin			X	X	X	X			X
Silers Prong	Mile 0.0 to Origin			X	X	X	X			X
Rich Branch	Mile 0.0 to Origin			X	X	X	X			X
Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
Meigs Post Prong	Mile 0.0 to Origin			X	X	X	X			X
Grouse Creek	Mile 0.0 to Origin			X	X	X	X			X
Tennessee River	Mile 636.6 to 638.6	X	X	X	X	X	X	X		
Tennessee River	Mile 638.6 to 640.0		X	X	X	X	X	X		
Tennessee River	Mile 640.0 to 643.4	X	X	X	X	X	X	X		
Tennessee River	Mile 643.4 to 646.4		X	X	X	X	X	X		

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Mile 646.4 to 652.2	X	X	X	X	X	X	X		
Knob Creek	Mile 0.0 to Origin			X	X	X	X			
Flenniken Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Fourth Creek	Mile 0.0 to Origin			X	X	X	X			
Third Creek	Mile 0.0 to 4.9			X	X	X	X			
Third Creek	Mile 4.9 to Origin	X	X	X	X	X	X			
Second Creek	Mile 0.0 to Origin		X	X	X	X	X			
First Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface water named and unnamed in the Upper Tennessee River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.09 Clinch River Basin

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Clinch River	Mile 0.0 to 4.4 (Emory River)	X	X	X	X	X	X	X		
Emory River	Mile 0.0 to Origin	X	X	X	X	X	X			
Little Emory River	Mile 0.0 to Origin	X	X	X	X	X	X			
Middle Fork Little Emory River	Mile 0.0 to Origin			X	X	X	X			
Davis Branch	Mile 0.0 to 0.2			X	X	X	X			
Unnamed Tributary	At Emory River (Mile 16.4); Mile 0.0 to 1.0			X	X	X	X			
Crooked Fork Creek	Mile 0.0 to 4.9			X	X	X	X			
Unnamed Tributary	At Crooked Fork Creek (Mile 4.9); Mile 0.0 to Origin			X	X	X	X			
Crooked Fork Creek	Mile 4.9 to Origin	X		X	X	X	X			
Flat Fork Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Unnamed Tributary	At Flat Fork (Mile 2.3); Mile 0.0 to Origin			X	X	X	X		X	
Stockstill Creek	Mile 0.0 to Origin			X	X	X	X			
Obed River	Mile 0.0 to 40.1			X	X	X	X			
Daddy's Creek	Mile 0.0 to Origin			X	X	X	X			
Basses Creek	Mile 0.0 to Origin			X	X	X	X			
Fox Creek	Mile 0.0 to Origin			X	X	X	X			
Scantling Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Scantling Branch (Mile 1.2); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Obed River (Mile 34.6); Mile 0.0 to Origin			X	X	X	X			
Obed River	Mile 40.1 to Origin	X	X	X	X	X	X			
Unnamed Tributary	At Obed River (Mile 45.4); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 4.4 to 12.0 (Poplar Creek)	X	X	X	X	X	X	X		
Poplar Creek	Mile 0.0 to 0.5		X	X	X	X	X			
Poplar Creek	Mile 0.5 to Origin			X	X	X	X			
East Fork Poplar Creek	Mile 0.0 to Origin			X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Indian Creek	At Poplar Creek (Mile 14.3); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 12.0 to 20.0	X	X	X	X	X	X			
White Oak Creek	Mile 0.0 to Origin			X	X		X			
Melton Branch	Mile 0.0 to Origin			X	X		X			
Clinch River	Mile 20.0 to 39.6	X	X	X	X	X	X	X		

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Beaver Creek	Mile 0.0 to 8.4	X	X	X	X	X	X			
Beaver Creek	Mile 8.4 to 10.4		X	X	X	X	X			
Beaver Creek	Mile 10.4 to 17.5	X	X	X	X	X	X			
Beaver Creek	Mile 17.5 to 17.9		X	X	X	X	X			
Beaver Creek	Mile 17.9 to 21.6	X	X	X	X	X	X			
Beaver Creek	Mile 21.6 to 23.6			X	X	X	X			
Beaver Creek	Mile 23.6 to 29.4	X	X	X	X	X	X			
Beaver Creek	Mile 29.4 to 31.4			X	X	X	X			
Beaver Creek	Mile 31.4 to Origin	X	X	X	X	X	X			
Unnamed Tributary	At Beaver Creek (Mile 44.1); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 39.6 to 41.1	X	X	X	X	X	X	X		
Scarboro Creek	Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 41.1 to 46.7	X	X	X	X	X	X	X		
Bull Run Creek	Mile 0.0 to 1.0			X	X	X	X			
Bull Run Creek	Mile 1.0 to Origin	X		X	X	X	X			
Nelson Branch	Mile 0.0 to Origin			X	X	X	X			
Blaze Branch	At Nelson Branch (Mile 5.0); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 46.7 to 47.8	X	X	X	X	X	X	X		
Worthington Branch	At Clinch River (Mile 47.8); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 47.8 to 50.7	X	X	X	X	X	X	X		
Braden Branch	At Clinch River (Mile 50.7); Mile 0.0 to 1.7			X	X		X			
Braden Branch	Mile 1.7 to Origin			X	X	X	X			
Clinch River	Mile 50.7 to 51.1	X	X	X	X	X	X	X		
Unnamed Tributary	At Clinch River (Mile 51.1); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 51.1 to 61.5	X	X	X	X	X	X	X		
Clinch River	Mile 61.5 to 66.2	X	X	X	X	X	X			
Hinds Creek	At Clinch River (Mile 65.0); Mile 0.0 to Origin			X	X	X	X			
Buffalo Creek	Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 66.2 to 79.8	X	X	X	X	X	X		X	
Cane Creek	At Clinch River (Mile 71.3); Mile 0.0 to Origin			X	X	X	X			
Blowing Spring Fork	At Cane Creek (Mile 1.9); Mile 0.0 to Origin			X	X	X	X			
Coal Creek	At Clinch River (Mile 75.0); Mile 0.0 to Origin			X	X	X	X		X	
Unnamed Tributary	At Coal Creek (Mile 8.6); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 79.8 to 202.1 (Virginia Stateline)	X	X	X	X	X	X			
Cove Creek	Mile 0.0 to 15.1	X	X	X	X	X	X			
Unnamed Tributary	At Cover Creek (Mile 13.7); Mile 0.0 to Origin			X	X	X	X			
Cove Creek	Mile 15.1 to 16.1		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Cove Creek	Mile 16.1 to Origin	X	X	X	X	X	X			
Bruce (Brush) Creek	Mile 0.0 to Origin			X	X	X	X			
Dog Creek	At Bruce Creek (Mile 0.9); Mile 0.0 toOrigin			X	X	X	X			
Unnamed Trib.	At Dog Creek (Mile 2.0); Mile 0.0 to Origin			X	X	X	X			
Big Creek	At Clinch River (Mile 83.0); Mile 0.0 to 15.6	X	X	X	X	X	X			
Big Creek	Mile 15.6 to 17.6		X	X	X	X	X			
Big Creek	Mile 17.6 to Origin			X	X	X	X			
Ollis Creek	At Big Creek (Mile 20.4); Mile 0.0 to Origin	X	X	X	X	X	X			
Powell River	At Clinch River (Mile 88.8); Mile 0.0 to 115.7	X	X	X	X	X	X			
Gap Creek	At Powell River (Mile 57.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Spring Br.	From Sinkhole to Origin			X	X	X	X			
Russell Creek	At Powell River (Mile 82.4); Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to 2.0			X	X	X	X		X	
White Creek	Mile 0.0 to 2.0			X	X	X	X		X	
Mill Creek	At Clinch River (Mile 98.0); Mile 0.0 to Origin			X	X	X	X			
Byram's Creek	At Mill Creek (Mile 0.5); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Byram's Creek (Mile 2.3); Mile 0.0 to Origin			X	X	X	X			
Ball Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Poorland Creek	At Clinch River (Mile 104.2); Mile 0.0 to Origin			X	X	X	X			
Dry Tributary	At Poorland Creek (Mile 2.5); Mile 0.0 to Waste Outfall			X	X		X			
Hunting Creek	At Clinch River (Mile 118.3); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Hunting Creek (Mile 2.0); Mile 0.0 to Origin			X	X	X	X			
Big War Creek	At Clinch River (Mile 164.4); Mile 0.0 to 8.0			X	X	X	X			
Flat Gap Creek	At Big War Branch (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			
Big War Creek	Mile 8.0 to Origin			X	X	X	X			
North Fork Clinch River	At Clinch River (Mile 192.0); Mile 0.0 to 2.2			X	X	X	X		X	
All other surface waters named and unnamed in the Clinch River Basin, with the exception of wet weather conveyances, which have not been specifically treated shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.10 French Broad River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
French Broad River	Mile 0.0 to 102.2 (N. Carolina-Tenn Line)	X	X	X	X	X	X			
Hines Creek	Mile 0.0 to Origin		X	X	X	X	X			
Unnamed Tributary	At Hines Creek (Mile 1.7)			X	X		X			
Unnamed Tributary	At Hines Creek (Mile 3.7)			X	X		X			
Cement Mill Creek	Mile 0.0 to Origin		X	X	X	X	X			
Boyds Creek	Mile 0.0 to Origin		X	X	X	X	X			
Unnamed Tributary	At Boyds Creek (Mile 9.7)			X	X		X			
Unnamed Tributary	At Boyds Creek (Mile 11.5)			X	X		X			
Little Pigeon River	Mile 0.0 to 2.9	X	X	X	X	X	X			
Gist (Guess) Creek	Mile 0.0 to Origin			X	X	X	X			
Little Pigeon River	Mile 2.9 to 4.8		X	X	X	X	X			
W. Prong Little Pigeon R.	Mile 0.0 to 4.5	X	X	X	X	X	X			
W. Prong Little Pigeon R.	Mile 4.5 to 7.9	X	X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 7.9 to 8.8		X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 8.8 to 13.0	X	X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 13.0 to 14.0		X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 14.0 to 19.0		X	X	X	X	X		X	
Dudley Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Dudley Creek	Mile 0.0 to Origin			X	X	X	X		X	
Roaring Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Baskins Creek	Mile 0.0 to Origin			X	X	X	X		X	
Norton Creek	Mile 0.0 to Origin			X	X	X	X			X
Leconte Creek	Mile 0.0 to Origin			X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 19.0 to Origin	X		X	X	X	X			X
Twomile Creek	Mile 0.0 to Origin			X	X	X	X			X
Fighting Creek	Mile 0.0 to Origin			X	X	X	X			X
Sugarland Branch	Mile 0.0 to Origin			X	X	X	X			X
Big Branch	Mile 0.0 to Origin			X	X	X	X			X
Road Prong	Mile 0.0 to Origin			X	X	X	X			X
Cole Branch	Mile 0.0 to Origin			X	X	X	X			X
Alum Cave Creek	Mile 0.0 to Origin			X	X	X	X			X
Walker Camp Pr	Mile 0.0 to Origin			X	X	X	X			X
Little Pigeon River	Mile 4.8 to 20.3	X	X	X	X	X	X			
Little Pigeon River	Mile 20.3 to Origin	X		X	X	X	X		X	
E.F. Little Pigeon R.	Mile 0.0 to Origin	X	X	X	X	X	X			
Dunn Creek	Mile 0.0 to 15.8	X	X	X	X	X	X		X	
Dunn Creek	Mile 15.8 to Origin	X	X	X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Ogle Springs Br	Mile 0.0 to Origin			X	X	X	X			
Bird Creek	Mile 0.0 to Origin			X	X	X	X			
Webb Creek	Mile 0.0 to Great Smoky Mtns Pk Boundary (Mile 5.8)			X	X	X	X		X	
Soak Ash Creek	Mile 0.0 to Origin			X	X	X	X			X
Timothy Creek	Mile 0.0 to Origin			X	X	X	X			X
Redwine Creek	Mile 0.0 to Origin			X	X	X	X			X
Noisy Creek	Mile 0.0 to Origin			X	X	X	X			X
Texas Creek	Mile 0.0 to Origin			X	X	X	X			X
Webb Creek	Great Smoky Mts boundary to origin			X	X	X	X			X
Copeland Creek	Mile 0.0 to Origin			X	X	X	X		X	
Injun Creek	Mile 0.0 to Origin			X	X	X	X		X	
Rhododendron Creek	Mile 0.0 to Origin			X	X	X	X		X	
Porters Creek	Mile 0.0 to Origin			X	X	X	X		X	
False Gap Prong	Mile 0.0 to Origin			X	X	X	X		X	
Kalanu Prong	Mile 0.0 to Origin			X	X	X	X		X	
Long Branch	Mile 0.0 to Origin			X	X	X	X		X	
Cannon Creek	Mile 0.0 to Origin			X	X	X	X		X	
Lowes Creek	Mile 0.0 to Origin			X	X	X	X		X	
Boulevard Prong	Mile 0.0 to Origin			X	X	X	X		X	
Shutts Prong	Mile 0.0 to Origin			X	X	X	X		X	
Middle Prong Little Pigeon	Mile 0.0 to Origin			X	X	X	X		X	
Ramsey Prong	Mile 0.0 to Origin			X	X	X	X		X	
Chapman Prong	Mile 0.0 to Origin			X	X	X	X		X	
Eagle Rocks Branch	Mile 0.0 to Origin			X	X	X	X		X	
Lost Prong	Mile 0.0 to Origin			X	X	X	X		X	
Buck Fork	Mile 0.0 to Origin			X	X	X	X		X	
Muddy Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin	X		X	X	X	X			
City Spring Tributary	Mile 0.0 to Origin			X	X	X	X			
Indian Creek	Mile 0.0 to Origin			X	X	X	X			
Ball Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Ball Creek (Mile 2.9); Mile 0.0 to Origin			X	X		X			
Leadvale Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin			X	X	X	X			
Nolichucky River	Mile 0.0 to 5.3	X	X	X	X	X	X			
Long Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Nolichucky River	Mile 5.3 to 7.7		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Nolichucky River	Mile 7.7 to 100.8 (N. Carolina-Tenn Line)	X	X	X	X	X	X			
Slate Creek	Mile 0.0 to Origin			X	X	X	X			
Bent Creek	Mile 0.0 to Origin			X	X	X	X			
Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Williams Branch	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to 49.0		X	X	X	X	X			
Lick Creek	Mile 49.0 to Origin	X	X	X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
War Branch	Mile 0.0 to 0.5			X	X	X	X			
Unnamed Tributary	At Lick Creek (Mile 36.1); Mile 0.0 to Origin			X	X		X			
Little Chucky Creek	Mile 0.0 to Origin			X	X	X	X			
Mosheim Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Mosheim Branch (Mile 2.0); Mile 0.0 to Origin			X	X		X			
Unnamed Tributary	At Little Chucky Creek (Mile 17.2); Mile 0.0 to Origin			X	X	X	X			
Gap Creek	Mile 0.0 to Origin			X	X	X	X			
Furness Branch	Mile 0.0 to Origin			X	X	X	X			
Cove Creek	Mile 0.0 to Origin			X	X	X	X			
Flag Branch	Mile 0.0 to Origin			X	X	X	X			
Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Crazy Creek	Sinkhole to Origin			X	X	X	X			
Unnamed Tributary	At Crazy Creek (Mile 1.3); Mile 0.0 to 0.5			X	X	X	X			
Unnamed Tributary	Mile 0.5 to Origin			X	X		X			
Camp Creek	Mile 0.0 to Origin		X	X	X	X	X			X
Jennings Creek	Mile 0.0 to Origin			X	X	X	X			X
Dry Creek	Mile 0.0 to 1.3			X	X	X	X			
Dry Creek	Mile 1.3 to Origin			X	X	X	X			X
Davis Creek	Mile 0.0 to Origin			X	X	X	X			X
College Creek	Mile 0.0 to Origin			X	X	X	X			
Moon Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Little Limestone Creek	Mile 0.0 to Origin			X	X	X	X			
Horse Creek	Mile 0.0 to Origin			X	X	X	X			X
Squibb Branch	Mile 0.0 to Origin			X	X	X	X			X
Cassi Creek, East and West Fork	Mile 0.0 to Origin			X	X	X	X			X
Painter Creek	Mile 0.0 to Origin			X	X	X	X			X
Clarks Creek	Mile 0.0 to Origin			X	X	X	X			X
Devil Fork Branch	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Long Arm Branch	Mile 0.0 to Origin			X	X	X	X			X
Chigger Branch	Mile 0.0 to Origin			X	X	X	X			X
Dry Creek	Mile 0.0 to Origin			X	X	X	X			X
Ramsey Creek	Mile 0.0 to Origin			X	X	X	X			X
Briar Creek	Mile 0.0 to Origin			X	X	X	X			X
Straight Creek	Mile 0.0 to Origin			X	X	X	X			X
Bumpus Cove Creek	Mile 0.0 to Origin			X	X	X	X			X
Broad Shoal Creek	Mile 0.0 to Origin			X	X	X	X			X
California Creek	Mile 0.0 to Origin			X	X	X	X			X
North Indian Creek	Upstream of Erwin	X	X	X	X	X	X			X
Rock Creek	Mile 0.0 to Origin			X	X	X	X			X
Duck Creek	Mile 0.0 to Origin			X	X	X	X			X
Red Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Clear Fork Branch	Mile 0.0 to Origin			X	X	X	X			X
South Indian Creek	Mile 0.0 to Origin			X	X	X	X			X
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Granny Lewis Creek	Mile 0.0 to Origin			X	X	X	X			X
Lower Higgins Creek	Mile 0.0 to Origin			X	X	X	X			X
Birchfield Camp Br	Mile 0.0 to Origin			X	X	X	X			X
Big Branch	Mile 0.0 to Origin			X	X	X	X			X
Spivey Creek	Mile 0.0 to Origin			X	X	X	X			X
Coffee Ridge Cr	Mile 0.0 to Origin			X	X	X	X			X
Watts Branch	Mile 0.0 to Origin			X	X	X	X			X
Tumbling Creek	Mile 0.0 to Origin			X	X	X	X			X
Rocky Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Flint Creek	Mile 0.0 to Origin			X	X	X	X			X
Devil Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Sams Creek	Mile 0.0 to Origin			X	X	X	X			X
Upper Higgins Creek	Mile 0.0 to Origin			X	X	X	X			X
E. Fk Higgins Cr	Mile 0.0 to Origin			X	X	X	X			X
Rice Creek	Mile 0.0 to Origin			X	X	X	X			X
Jones Creek	Mile 0.0 to Origin			X	X	X	X			X
Long Branch	Mile 0.0 to Origin			X	X	X	X			X
Pigeon River	Mile 0.0 to 25.9 (Tenn-N. Car. Line)		X	X	X	X	X			
Matthew Creek	Mile 0.0 to Origin			X	X	X	X		X	
Sinking Creek	Mile 0.0 to 5.2		X	X	X	X	X			X
Sinking Creek	Mile 5.2 to Origin	X		X	X	X	X		X	
Cosby Creek	Mile 0.0 to 4.3			X	X	X	X		X	
Cosby Creek	Mile 4.3 to Origin			X	X	X	X			X
N. Fork Bogard Cr	Mile 0.0 to Origin			X	X	X	X		X	
Indian Camp Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Gulf Fork Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Trail Fork Big Creek	Mile 0.0 to Origin			X	X	X	X		X	
Dry Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Bailey Branch	Mile 0.0 to Origin			X	X	X	X		X	
Bear Branch	Mile 0.0 to Origin			X	X	X	X		X	
Laurel Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Moss Camp Creek	Mile 0.0 to Origin			X	X	X	X			X
Deep Gap Creek	Mile 0.0 to Origin			X	X	X	X			X
M. Prong Gulf Fork	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Mile 0.0 to Origin			X	X	X	X			X
Brown Gap Creek	Mile 0.0 to Origin			X	X	X	X			X
Tom Creek	Mile 0.0 to Origin			X	X	X	X		X	
Wolf Creek	Mile 0.0 to 2.0			X	X	X	X		X	
Wolf Creek	Mile 2.0 to Origin			X	X	X	X			X
Brush Creek	Mile 0.0 to 1.0			X	X	X	X		X	
Paint Creek	Mile 0.0 to Origin			X	X	X	X			X
All other surface waters named and unnamed in the French Broad River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.11 Holston River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Holston River	Mile 0.0 to 131.5 (Church Hill Bridge)	X	X	X	X	X	X			
Unnamed Branch	At Holston River (Mile 1.0); Mile 0.0 to Origin			X	X	X	X			
Sand Branch	Mile 0.0 to Origin			X	X	X	X			
Swan Pond Creek	Mile 0.0 to 5.0			X	X	X	X			
Pratt Branch	Mile 0.0 to Origin			X	X	X	X			
Woods Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Holston River (Mile 6.7); Mile 0.0 to Origin			X	X	X	X			
Maccash Branch	At Holston River (Mile 10.8); Mile 0.0 to Origin			X	X	X	X			
Roseberry Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Roseberry Creek (Mile 1.7); Mile 0.0 to 0.5			X	X	X	X			
Unnamed Branch	Mile 0.5 to 0.7			X	X	X	X			
Big Flat Creek	Mile 0.0 to 8.0		X	X	X	X	X			
Little Flat Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At L. Flat Creek (Mile 1.3); Mile 0.0 to Origin			X	X	X	X			
Big Flat Creek	Mile 8.0 to Origin			X	X	X	X			
Lyon Creek	Mile 0.0 to 0.3		X	X	X	X	X			
Lyon Creek	Mile 0.3 to 1.9		X	X	X	X	X			
Unnamed Branch	At Lyon Creek (Mile 1.9); Mile 0.0 to Origin			X	X	X	X			
Lyon Creek	Mile 1.9 to Origin			X	X	X	X			
Unnamed Branch	At Lyon Creek (Mile 2.7); Mile 0.0 to Origin			X	X	X	X			
Richland Creek	At Holston River (Mile 27.1); Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	At Holston River (Mile 30.4); Mile 0.0 to Origin			X	X	X	X			
Lost Creek at New Market	Sink at Mile 1.9 to Origin			X	X	X	X			
Buffalo Creek	Below Buffalo Springs			X	X	X	X		X	
Mossy Creek	At Holston River (Mile 52.4); Mile 0.0 to 3.9	X	X	X	X	X	X			
Mossy Creek	Mile 3.9 to Origin		X	X	X	X	X		X	
Unnamed Branch	At Holston River (Mile 55.0); Mile 0.0 to Origin			X	X	X	X			
German Creek	At Holston River (Mile 70.2); Mile 0.0 to 8.1	X	X	X	X	X	X			
German Creek	Mile 8.1 to Origin			X	X	X	X			
Turkey Creek	At Holston River (Mile 75.2); Mile 0.0 to 1.2	X	X	X	X	X	X			
Turkey Creek	Mile 1.2 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Spring Creek	At Holston River (Mile 76.0); Mile 0.0 to 1.2	X	X	X	X	X	X			
Spring Creek	Mile 1.2 to Origin			X	X	X	X			
Thompson Creek	Mile 0.0 to Origin			X	X	X	X			
Fall Creek	At Holston River (Mile 80.7); Mile 0.0 to 1.0	X	X	X	X	X	X			
Fall Creek	Mile 1.0 to Origin			X	X	X	X			
Poor Valley Creek	At Holston River (Mile 89.2); Mile 0.0 to 6.8	X	X	X	X	X	X			
Mooresburg Branch	Mile 0.0 to 1.6	X	X	X	X	X	X			
Mooresburg Branch	Mile 1.6 to Origin			X	X	X	X			
Poor Valley Creek	Mile 6.8 to Origin			X	X	X	X			
Beech Creek	At Holston River (Mile 108.8); Mile 0.0 to Origin			X	X	X	X			
Big Creek (Stanley Prong)	Holston River (Mile 109.1); Mile 0.0 to Origin	X	X	X	X	X	X		X	
Forgey Creek	At Holston River (Mile 116.9); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Forgey Creek (Mile 1.1); Mile 0.0 to 1.0			X	X		X			
Stoney Point Creek	At Holston River (Mile 123.0); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Stoney Point Creek (Mile 0.2); Mile 0.0 to Origin			X	X	X	X			
Bradley Creek	At Holston River (Mile 128.8); Mile 0.0 to Origin	X		X	X	X	X			
Holston River	Mile 131.5 to Origin (Mile 142.2)			X	X	X	X			
Alexander Creek	At Holston River (Mile 131.9); Mile 0.0 to 3.4	X	X	X	X	X	X		X	
Unnamed Branch	At Alexander Creek (Mile 3.4); Mile 0.0 to 0.3			X	X	X	X			
Alexander Creek	Mile 3.4 to Origin			X	X	X	X		X	
Smith Creek	At Holston River (Mile 135.5); Mile 0.0 to Origin			X	X	X	X			
Arnott Branch	At Holston River (Mile 137.9); Mile 0.0 to Origin			X	X	X	X			
North Fork Holston River	Mile 0.0 to 5.2 (Tenn-Virginia Line)			X	X		X			
South Fork Holston River	Mile 0.0 to 2.3		X	X	X					
Reedy Creek	Mile 0.0 to 7.1		X	X	X	X	X			
Reedy Creek	Mile 7.1 to Tenn-Virginia Line	X	X	X	X	X	X			
South Fork Holston River	Mile 2.3 to 5.7		X	X	X					
Horse Creek	Mile 0.0 to 1.3		X	X	X	X	X			
Horse Creek	Mile 1.3 to Origin			X	X	X	X			
Little Horse Creek	At Horse Creek (Mile 3.6); Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Dolan Branch	At Little Horse Creek (Mile 2.8); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At S.F. Holston River (Mile 4.0); Mile 0.0 to Origin		X	X	X	X	X			
South Fork Holston River	Mile 5.7 to 19.6	X	X	X	X	X	X		X	
Kendrick Creek	Mile 0.0 to 1.0			X	X	X	X		X	
Kendrick Creek	Mile 1.0 to Origin			X	X	X	X			
Fall Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At S. F. Holston River (Mile 13.6); Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	At S. F. Holston River (Mile 14.1); Mile 0.0 to Origin			X	X	X	X			
Ford Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Ford Creek (Mile 1.3); Mile 0.0 to Origin		X	X	X	X	X			
Cedar Creek	At S. F. Holston (Mile 18.0); Mile 0.0 to 2.3			X	X	X	X			
Unnamed Branch	At Cedar Creek (Mile 2.3); Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	Mile 2.3 to Origin			X	X	X	X			
Watauga River	At S. F. Holston (Mile 19.6); Mile 0.0 to 15.0	X	X	X	X	X	X			
Boone's Creek	Mile 0.0 to Origin			X	X	X	X			
Knob Creek	Mile 0.0 to Origin			X	X	X	X			
Watauga River	Mile 15.0 to 16.4		X	X	X	X	X			
Brush Creek	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to Origin			X	X	X	X			
Watauga River	Mile 16.4 to 18.0	X	X	X	X	X	X		X	
Watauga River	Mile 18.0 to 25.8		X	X	X	X	X		X	
Buffalo Creek	At Watauga River (Mile 22.1); Mile 0.0 to Origin			X	X	X	X			
Toll Branch	Mile 0.0 to 0.1			X	X	X	X			
Toll Branch	Mile 0.1 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.2 to Origin			X	X	X	X			
Dry Creek	At Buffalo Creek (Mile 3.3); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Buffalo Creek (Mile 3.0); Mile 0.0 to 0.2			X	X	X	X			
Campbell Creek	At Watauga River (Mile 25.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Campbell Creek (Mile 1.6): Mile 0.0 to Origin			X	X	X	X			
Campbell Branch	Mile 1.6 to Origin			X	X	X	X			
Watauga River	Mile 25.8 to 55.1 (N.C.-Tenn. Line)	X	X	X	X	X	X			X
Stony Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Little Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Pierce Branch	Mile 0.0 to Origin			X	X	X	X		X	
Bartree Branch	Mile 0.0 to Origin			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
North Fork Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Upper Hinkle Branch	Mile 0.0 to Origin			X	X	X	X			
Doe River	Mile 0.0 to 21.0	X	X	X	X	X	X		X	
Laurel Fork Creek	At Doe River (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Fork	Mile 0.0 to Origin			X	X	X	X			X
Wagner Branch	Mile 0.0 to Origin			X	X	X	X			X
Simerly Creek	Mile 0.0 to Origin			X	X	X	X			X
Clarke Creek	Mile 0.0 to Origin			X	X	X	X			X
Tiger Creek	Mile 0.0 to Origin			X	X	X	X			X
Roaring Creek	Mile 0.0 to Origin			X	X	X	X			X
Georges Creek	Mile 0.0 to Origin			X	X	X	X			X
Buck Creek	At Doe River (Mile 20.9); Mile 0.0 to Origin			X	X	X	X			X
Shell Creek	Mile 0.0 to Origin			X	X	X	X			X
Hampton Creek	Mile 0.0 to Origin			X	X	X	X		X	
L. Prong Hampton Creek	Mile 0.0 to Origin			X	X	X	X			X
Sugar Hollow Creek	Mile 0.0 to Origin			X	X	X	X		X	
Hampton Creek	Mile 0.0 to Origin			X	X	X	X		X	
L. Prong Hampton Creek	Mile 0.0 to Origin			X	X	X	X			X
Shell Creek	Mile 0.0 to Origin			X	X	X	X			X
Cove Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Fork Creek	At Doe River (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Fork	Mile 0.0 to Origin			X	X	X	X			X
Wagner Branch	Mile 0.0 to Origin			X	X	X	X			X
Buck Creek	At Doe River (Mile 20.9); Mile 0.0 to Origin			X	X	X	X			X
Doe River	Mile 21.0 to Origin	X	X	X	X	X	X			X
Little Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Elk River	At Watauga (Mile 46.8); Mile 0.0 to 14.5 (Stateline)			X	X	X	X		X	
Black Branch	Mile 0.0 to Origin			X	X	X	X			X
Row Branch	Mile 0.0 to Origin			X	X	X	X			X
Heaton Branch	Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Cobb Branch	Mile 0.0 to Origin			X	X	X	X		X	
Cress Branch	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Roan Creek	At Watauga River (Mile 45.5); Mile 0.0 to 16.7	X	X	X	X	X	X			X
Doe Creek	At Roan Creek (Mile 10.9); Mile 0.0 to Origin			X	X	X	X			X
Spruce Branch	At Doe Creek (Mile 10.9); Mile 0.0 to Origin			X	X	X	X			
Timothy Branch	Mile 0.0 to Origin			X	X	X	X		X	
Campbell's Creek	Mile 0.0 to Origin			X	X	X	X			X
Roan Creek	Mile 16.7 to 17.7			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Stout Branch	Mile 0.0 to Origin			X	X	X	X			X
Vaught Creek	Mile 0.0 to Origin	X		X	X	X	X			X
Town Creek	At Roan Creek (Mile 17.7); Mile 0.0 to 0.2			X	X	X	X			
Town Creek	Mile 0.2 to Origin			X	X	X	X			
Furnace Creek	At Town Creek (Mile 3.0); Mile 0.0 to Origin			X	X	X	X			X
Goose Creek	At Town Creek (Mile 3.0); Mile 1.5 to Origin			X	X	X	X			X
Patrick Creek	At Goose Creek (Mile 2.6); Mile 0.0 to Origin			X	X	X	X			
Roan Creek	Mile 17.7 to Origin	X		X	X	X	X			X
Corn Creek	Mile 0.0 to Origin			X	X	X	X			X
Forge Creek	Mile 0.0 to Origin			X	X	X	X			X
Brush Fork Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Dry Run Creek	Mile 0.0 to Origin			X	X	X	X			X
Buffalo Creek	Mile 0.0 to Origin			X	X	X	X		X	
Gap Creek	Mile 0.0 to Origin			X	X	X	X		X	
South Fork Holston River	Mile 19.6 to 35.5 (above Bluff City)	X	X	X	X	X	X			
Muddy Creek	At S. F. Holston (Mile 25.5); Mile 0.0 to 2.6			X	X	X	X			
Booher Creek	At Muddy Creek (Mile 2.6); Mile 0.0 to Origin			X	X	X	X			
Muddy Creek	Mile 2.6 to Origin			X	X	X	X			
Unnamed Branch	At Muddy Creek (Mile 4.9); Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	At S. F. Holston (Mile 29.6); Mile 0.0 to 9.1		X	X	X	X	X			
Back (Beck) Creek	At Beaver Creek (Mile 6.1); Mile 0.0 to Origin			X	X	X	X			
Univac Branch	At Back Creek (Mile 0.5); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Beaver Creek (Mile 7.3); Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	At Beaver Creek (Mile 7.9); Mile 0.0 to Origin			X	X	X	X			
Beeler Road Branch	At Cedar Creek (Mile 3.2); Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Raytheon Branch	At Beeler Road Branch (Mile 1.2); Mile 0.0 to 0.2			X	X		X			
Beaver Creek	Mile 9.1 to 15.3 (Tenn-Virginia Line)		X	X	X	X	X			
Steele Creek	At Beaver Creek (Mile 11.0); Mile 0.0 to Origin			X	X	X	X			
Indian Creek	At S. F. Holston (Mile 35.0); Mile 0.0 to Origin			X	X	X	X			
Booher Creek	At Indian Creek (Mile 3.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Booher Creek (Mile 0.6); Mile 0.0 to Origin			X	X	X	X			
South Fork Holston River	Mile 35.5 to South Holston Dam	X	X	X	X	X	X		X	
Unnamed Branch	At S. F. Holston (Mile 39.1); Mile 0.0 to Origin			X	X	X	X			
South Fork Holston River	South Holston Dam to mile 62.8 (Virginia Line)	X	X	X	X	X	X			
Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Kendrick Creek	Mile 0.0 to Origin			X	X	X	X		X	
Fishdam Creek	Mile 0.0 to Origin			X	X	X	X			X
Sulphur Springs Branch	Mile 0.0 to Origin			X	X	X	X			X
Sharps Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Jacobs Creek	Mile 0.0 to Origin	X		X	X	X	X			X
Jacobs Creek	At S. F. Holston (Mile 59.8); Mile 0.0 to 3.4	X	X	X	X	X	X			X
Jacobs Creek	Mile 3.4 to 3.6		X	X	X	X	X			X
Jacobs Creek	Mile 3.6 to Origin			X	X	X	X			X
Harpers Creek	Mile 0.0 to Origin			X	X	X	X			X
Rockhouse Run Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Stateline to Origin			X	X	X	X			X
Beaverdam Creek	Stateline to Origin			X	X	X	X			X
London Bridge Br	Stateline to Origin			X	X	X	X		X	
Reservoir Branch	Mile 0.0 to Origin			X	X	X	X		X	
Stillhouse Branch	Mile 0.0 to Origin			X	X	X	X			X
Chalk Branch	Mile 0.0 to Origin			X	X	X	X			X
Chestnut Branch	Mile 0.0 to Origin			X	X	X	X			X
Haunted Hollow Br.	Mile 0.0 to Origin			X	X	X	X			X
Fagall Branch	Mile 0.0 to Origin			X	X	X	X			X
Birch Branch	Mile 0.0 to Origin			X	X	X	X			X
Parks Branch	Mile 0.0 to Origin			X	X	X	X			X
David Blevin Branch	Mile 0.0 to Origin			X	X	X	X		X	
STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS

Johnson Branch	Mile 0.0 to Origin	X	X	X	X		X
Jim Wright Branch	Mile 0.0 to Origin	X	X	X	X		X
Ledford Branch	Mile 0.0 to Origin	X	X	X	X	X	
W. Fk Beaverdam	Mile 0.0 to Origin	X	X	X	X		X
M. Fk Beaverdam	Mile 0.0 to Origin	X	X	X	X		X
E. Fk Beaverdam	Mile 0.0 to Origin	X	X	X	X		X
Lyons Branch	Mile 0.0 to Origin	X	X	X	X		X
Gentry Creek	Mile 0.0 to Origin	X	X	X	X		X
Dry Branch	Mile 0.0 to Origin	X	X	X	X		X
Grindstone Branch	Mile 0.0 to Origin	X	X	X	X		X
Flatwood Branch	Mile 0.0 to Origin	X	X	X	X		X
Corum Branch	Mile 0.0 to Origin	X	X	X	X		X
West Fork Laurel Creek	Mile 0.0 to Origin	X	X	X	X		X
All other surface tributaries named and unnamed in the Holston River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified		X	X	X	X		

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.12 Lower Cumberland River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRT
Cumberland River	Mile 74.6 (Ky-Tenn Line) to 118.3 (Cummings Cr.)	X	X	X	X	X	X	X		
Saline Creek	Mile 0.0 to Hwy 120		X	X	X	X	X			
Saline Creek	Hwy 120 to Fort Campbell boundary		X	X	X	X	X		X	
Saline Creek	Fort Campbell Boundary to Origin		X	X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Long Creek	Highway 49 to Origin			X	X	X	X		X	
Elk Creek	Mile 0.0 to Origin			X	X	X	X			
Wells Creek	Mile 0.0 to Origin			X	X	X	X			
Yellow Creek	Mile 3.4 to Ruskin Cave			X	X	X	X		X	
Cumberland River	Mile 118.3 to 125.3 (Red River)	X	X	X	X	X	X	X		
Cumberland River	Mile 125.3 to 175.7 (Richland Creek)	X	X	X	X	X	X	X		
Red River	Mile 0.0 to 2.0		X	X	X	X	X	X		
Red River	Mile 2.0 to 15.0	X	X	X	X	X	X	X		
Red River	Mile 15.0 to 51.2 (Ky-Tenn Line)	X	X	X	X	X	X			
South Fork Red River	Mile 20.4 (Ky-Tenn Line) to Origin			X	X	X	X			
Big West Fork	Mile 0.0 to 14.6 (Ky-Tenn Line)		X	X	X		X	X		
Little West Fork	Mile 0.0 to 10.4		X	X	X	X	X			
Sulphur Fork	Mile 0.0 to 26.6	X	X	X	X	X	X			
Sulphur Fork	Mile 26.6 to 28.6		X	X	X	X	X			
Sulphur Fork	Mile 28.6 to Origin	X	X	X	X	X	X			
Carr Creek	Mile 0.0 to Origin			X	X	X	X			
Red River	Mile 81.0 (Ky-Tenn Line) to Origin	X	X	X	X	X	X			
Summers Branch	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Sulphur Springs Cr	Mile 0.0 to Origin			X	X	X	X			
Harpeth River	Mile 0.0 to 10.3	X	X	X	X	X	X			
Jones Creek	Mile 0.0 to Origin		X	X	X	X	X			
Town Branch	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 10.3 to 52.8	X	X	X	X	X	X			
Trace Creek	Mile 0.0 to Origin		X	X	X	X	X			
Turnbull Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Sullivans Branch	Mile 0.0 to Origin		X	X	X	X	X			
Beaver Dam Creek	Mile to 0.0 to Origin		X	X	X	X	X			
Gin Branch	Mile 0.0 to Origin		X	X	X	X	X			
Brush Creek	Mile 0.0 to Origin		X	X	X	X	X			
Caney Fork Creek	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 52.8 to 55.8		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NR
Harpeth River	Mile 55.8 to 57.8		X	X	X	X	X			
Harpeth River	Mile 57.8 to 61.9 (Little Harpeth)	X	X	X	X	X	X			
Little Harpeth River	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 61.9 to 68.3 (Cartwright Creek)		X	X	X	X	X			
Cartwright Creek	Mile 0.0 to Origin			X	X	X	X			
Harpeth River	Mile 68.3 to 79.0	X	X	X	X	X	X			
West Harpeth River	Mile 0.0 to Origin	X	X	X	X	X	X			
Harpeth River	Mile 79.0 to 85.2		X	X	X	X	X			
Spencer Creek	Mile 0.0 to Origin			X	X	X	X			
Harpeth River	Mile 85.2 to Origin	X	X	X	X	X	X			
Sycamore Creek	Mile 0.0 to 10.0	X	X	X	X	X	X			
Sycamore Creek	Mile 10.0 to Origin	X		X	X	X	X			
Marrowbone Creek	Mile 0.0 to 3.0	X	X	X	X	X	X			
Marrowbone Creek	Mile 3.0 to Origin	X		X	X	X	X			
Cumberland River	Mile 175.7 to 189.5	X	X	X	X	X	X	X		
Richland Creek	Mile 0.0 to Origin			X	X	X	X			
Whites Creek	Mile 0.0 to Origin		X	X	X	X	X			
Ewing Creek	Mile 0.0 to Origin		X	X	X	X	X			
Cumberland River	Mile 189.5 to 216.2 (Old Hickory Dam)	X	X	X	X	X	X	X		
Mill Creek	Mile 0.0 to 11.5		X	X	X	X	X			
Mill Creek	Mile 11.5 to 23.0			X	X	X	X			
Mill Creek	Mile 23.0 to Origin			X	X	X	X			
Stones River	Mile 0.0 to 6.8	X	X	X	X	X	X			
Stoners Creek	Mile 0.0 to Origin			X	X	X	X			
McCrory Creek	Mile 0.0 to Origin			X	X	X	X			
Stones River (Percy Priest Res.)	Mile 6.8 to 38.7 (Confluence-East & West Fork)	X	X	X	X	X	X			
Suggs Creek	Mile 0.0 to Origin			X	X	X	X			
Smith Springs Creek	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Stewart Creek	Mile 0.0 to Origin			X	X	X	X			
Harts Branch	Mile 0.0 to Origin			X	X	X	X			
Fall Creek & Tributaries	Mile 0.0 to Origin			X	X	X	X			
East Fork Stones River	Mile 0.0 to 44.5 (Near Woodbury)	X	X	X	X	X	X			
Bradley Creek	Mile 0.0 to Origin			X	X	X	X			
Cripple Creek	Mile 0.0 to Origin			X	X	X	X			
East Fork Stones River	Mile 44.5 to 45.2		X	X	X	X	X			
East Fork Stones River	Mile 45.2 to Origin	X	X	X	X	X	X			
West Fork Stones River	Mile 0.0 to 10.0	X	X	X	X	X	X			
Overall Creek	Mile 0.0 to Origin			X	X	X	X			
West Fork Stones River	Mile 10.0 to 15.2		X	X	X	X	X			
West Fork Stones River	Mile 15.2 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRT
Lytle Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Fork Stones	Mile 0.0 to Origin	X	X	X	X	X	X			
Christmas Creek	Mile 0.0 to Origin			X	X	X	X			
Cumberland River	Mile 216.2 to 309.2 (Caney Fork River)	X	X	X	X	X	X	X		
Drakes Creek	Mile 0.0 to 4.9	X	X	X	X	X	X	X		
Drakes Creek	Mile 4.9 to Origin			X	X	X	X			
Smiths Creek	Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	Mile 0.0 to 2.0	X	X	X	X	X	X	X		
Cedar Creek	Mile 2.0 to Origin			X	X	X	X			
Spencer Creek	Mile 0.0 to 2.8	X	X	X	X	X	X	X		
Spencer Creek	Mile 2.8 to Origin			X	X	X	X			
Bartons Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Big Goose Creek	Mile 0.0 to Origin			X	X	X	X			
Little Goose Creek	Mile 0.0 to Origin			X	X	X	X			
Round Lick Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Lower Cumberland River Basin (and Green River Basin), with the exception of wet weather conveyances, which have not been specifically noted shall be classified.				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.13 Upper Cumberland River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Cumberland River	Mile 309.2 to 385.5 (Ky-Tenn Line)	X	X	X	X	X	X	X		
Caney Fork River	Mile 0.0 to 25.4	X	X	X	X	X	X	X	X	
Mulherrin Creek	Mile 0.0 to Origin			X	X	X	X			
Hickman Creek	Mile 0.0 to Origin			X	X	X	X			
Smith Fork Creek	Mile 0.0 to Mile 3.0			X	X	X	X		X	
Smith Fork Creek	Mile 3.0 to Origin			X	X	X	X			
Dry Creek	Mile 0.0 to Origin			X	X	X	X		X	
Jones Fork	Mile 0.0 to Origin			X	X	X	X		X	
Caney Fork River	Mile 25.4 to Origin	X	X	X	X	X	X			
Mine Lick Creek	Mile 0.0 to 5.0	X		X	X	X	X			
Mine Lick Creek	Mile 5.0 to Origin			X	X	X	X			
Falling Water River	Mile 0.0 to 39.0	X		X	X	X	X			
Falling Water River	Mile 39.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Pigeon Roost Creek	Mile 0.0 to Origin			X	X	X	X			
Fall Creek	Mile 0.0 to Origin			X	X	X	X			
Pine Creek	Mile 2.4 to Origin			X	X	X	X		X	
Turner Branch	Mile 0.0 to 0.5			X	X	X	X		X	
Sink Creek	Mile 4.6 to Origin			X	X	X	X		X	
Collins River	Mile 0.0 to 43.0	X	X	X	X	X	X			
Mountain Creek	Mile 0.0 to 6.0			X	X	X	X		X	
Charles Creek	Mile 0.0 to 9.0			X	X	X	X		X	
Barren Fork River	Mile 0.0 to 4.5			X	X	X	X			
Barren Fork River	Mile 4.5 to Origin	X	X	X	X	X	X		X	
Hickory Creek	Mile 19.0 to 24.0			X	X	X	X		X	
W.F. Hickory C	Mile 0.0 to Origin			X	X	X	X			
Keel Branch	Mile 0.0 to Origin			X	X	X	X			
Hills Creek	Mile 0.0 to Origin			X	X	X	X		X	
Collins River	Mile 43.0 to 49.0	X		X	X	X	X		X	
Big Creek	Mile 0.0 to 6.0	X		X	X	X	X			
Big Creek	Mile 6.0 to Origin			X	X	X	X			
Collins River	Mile 49.0 to Origin			X	X	X	X			
Caney Fork River	Mile 92.2 to Origin	X	X	X	X	X	X			
Rocky River	Mile 0.0 to 9.0	X	X	X	X	X	X			
Rocky River	Mile 9.0 to 13.0	X	X	X	X	X	X		X	
Rocky River	Mile 13.0 to Origin	X	X	X	X	X	X			
Calfkiller River	Mile 0.0 to 14.1	X	X	X	X	X	X			
Calfkiller River	Mile 14.1 to 30.8	X	X	X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Calfkiller River	Mile 30.8 to Origin	X	X	X	X	X	X		X	
Cane Creek	Mile 1.0 to 8.0	X	X	X	X	X	X		X	
Falls Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 8.0 to Origin	X	X	X	X	X	X			
Bee Creek	Mile 0.0 to 7.3			X	X	X	X			
Bee Creek	Mile 7.3 to Origin	X		X	X	X	X			
Wilkerson Creek	Mile 0.0 to Origin			X	X	X	X			
Frey Branch	Mile 0.0 to Origin			X	X	X	X			
Roaring River	Mile 0.0 to 29.9			X	X	X	X			
Roaring River	Mile 29.9 to Origin	X		X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Carr Creek	Mile 0.0 to 4.2			X	X	X	X			
Carr Creek	Mile 4.2 to Origin	X		X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Goose Creek	Mile 0.0 to 12.0			X	X	X	X		X	
Flynns Creek	Mile 0.0 to 5.0			X	X	X	X		X	
Obey River	Mile 0.0 to 7.3	X	X	X	X	X	X		X	
Neely Creek	Mile 0.0 to Origin (3.3 miles)			X	X	X	X		X	
Wolf River	Mile 0.0 to Ky State Line		X	X	X	X	X			
Wolf River	Ky State Line to Origin			X	X	X	X		X	
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Obey River	Mile 7.3 to confluence of East and West Forks	X	X	X	X	X	X			
West Fork Obey River	Mile 0.0 to Origin			X	X	X	X			
East Fork Obey River	Mile 0.0 to Origin	X		X	X	X	X			
Buffalo Cove Creek	Mile 0.0 to Origin			X	X	X	X			
Rock Castle Creek	Mile 0.0 to Origin			X	X	X	X			
Big South Fork Cumberland River	Mile 55.5 (Ky-Tenn Line) to Origin (Mile 77.0)	X	X	X	X	X	X			
No Business Creek	Upper 4.0 miles			X	X	X	X		X	
Parch Corn Creek	Upper 1.5 miles			X	X	X	X		X	
Station Camp Creek	Upper 4.8 miles			X	X	X	X		X	
Laurel Fork Creek	Upper 4.9 miles			X	X	X	X		X	
North White Oak Creek	Upper 3.9 miles			X	X	X	X		X	
Williams Creek	Upper 7.6 miles			X	X	X	X		X	
Pine Creek	Mile 0.0 to 10.5			X	X	X	X			
Pine Creek	Mile 10.5 to Origin	X		X	X	X	X			
New River	Mile 0.0 to 15.0			X	X	X	X			
New River	Mile 15.0 to Origin	X		X	X	X	X			
Clear Fork River	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Elk Fork Creek	Mile 1.8 (KY Line) to Origin	X		X	X	X	X			
All other surface waters named and unnamed, within the Upper Cumberland River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.14 Barren River Basin

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
West Fork Drakes Creek	Mile 33.0 (stateline) to Origin			X	X	X	X			
Caney Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Dry Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Fork Drakes Creek	Mile 22.2 (stateline) to Origin	X		X	X	X	X			
Sulphur Fork Creek	Mile 9.0 (stateline) to Origin			X	X	X	X			
Dutch Creek	Mile 0.0 to Origin			X	X	X	X			
Trammel Creek	Mile 30.7 (stateline) to Origin			X	X	X	X			
Little Trammel Creek	Mile 4.7 (stateline) to Origin			X	X	X	X			
Long Creek	Mile 14.6 (stateline) to Origin			X	X	X	X			
West Fork Long Creek	Mile 0.0 to Origin			X	X	X	X			
Puncheon Creek	Mile 4.3 (stateline) to Origin			X	X	X	X			
Unnamed Tributary (Adams Spring)	Mile 0.0 to Origin	X		X	X	X	X			
Little Puncheon Creek	Mile 0.0 to Origin			X	X	X	X			
Spring Creek	Mile 0.0 to Origin	X		X	X	X	X			
Salt Lick Creek	Mile 4.7 (stateline) to mile 6.8			X	X	X	X			
Salt Lick Creek	Mile 6.8 to mile 9.9			X	X	X	X		X	
Salt Lick Creek	Mile 9.9 to Origin			X	X	X	X			
Long Fork	Mile 4.5 (stateline) Origin			X	X	X	X			
White Oak Creek	Mile 4.1 (stateline) to Origin			X	X	X	X			
Long Hungry Creek	Mile 0.0 to Origin			X	X	X	X			
Line Creek	Mile 14.2 (stateline) to Origin			X	X	X	X			
Trace Creek	Mile 0.0 to Origin			X	X	X	X			
Little Trace Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed, within the Barren River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

* If a roll-call vote was necessary, the vote by the Agency on these rulemaking hearing rules was as follows:

Board Member	Aye	No	Abstain	Absent	Signature (if required)
James W. Cameron III	X				
Jill E. Davis	X				
Mayor Kevin Davis				X	
Derek Gernt	X				
John Guoynes	X				
C. Monty Halcomb				X	
Chuck Head	X				
Charlie R. Johnson	X				
Judy Manners				X	
John McClurkan	X				
Frank McGinley	X				
D. Anthony Robinson	X				

I certify that this is an accurate and complete copy of rulemaking hearing rules, lawfully promulgated and adopted by the Tennessee Board of Water Quality, Oil and Gas on 01/15/2013, and is in compliance with the provisions of T.C.A. § 4-5-222.

I further certify the following:

Notice of Rulemaking Hearing filed with the Department of State on: 10/21/09 and 12/16/11

Rulemaking Hearing(s) Conducted on: (add more dates). 12/15/09, 01/05/10, 01/06/10, 01/07/10, 01/13/10, 01/14/10 and 02/23/12

CAROL L. GRICE
STATE OF TENNESSEE NOTARY PUBLIC
DAVIDSON COUNTY, TENN.

Date: January 15, 2013

Signature: James W. Cameron III

Name of Officer: James W. Cameron III

Title of Officer: Chairman

Subscribed and sworn to before me on: January 15, 2013

Notary Public Signature: Carol L. Grice

My commission expires on: June 21, 2016

All rulemaking hearing rules provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.

R E Cooper Jr

Robert E. Cooper, Jr.
Attorney General and Reporter

4-1-13
Date

Department of State Use Only

Filed with the Department of State on: 4/3/13

Effective on: 7/2/13

Tre Hargett
Secretary of State

RECEIVED
2013 APR -3 AM 9:50
SECRETARY OF STATE
TRE HARGETT

Public Hearing Comments

One copy of a document containing responses to comments made at the public hearing must accompany the filing pursuant to T.C.A. § 4-5-222. Agencies shall include only their responses to public hearing comments, which can be summarized. No letters of inquiry from parties questioning the rule will be accepted. When no comments are received at the public hearing, the agency need only draft a memorandum stating such and include it with the Rulemaking Hearing Rule filing. Minutes of the meeting will not be accepted. Transcripts are not acceptable.

2010 Triennial Review of Water Quality Standards

Summary of Public Comments and Tennessee Water Quality Control Board (WQCB) Responses

(Note: in some instances, public comments have been summarized in order to group similar observations by multiple reviewers.)

A. GENERAL COMMENTS: Public Participation Process

Comment A-1. TDEC's notice procedures are inadequate. The public notice for the public meetings was not included in the division's regular notices for permit actions.

Response: The formal rulemaking hearing notice was published on the Secretary of State's website and the department's website. Additionally, emails were sent to previous participants in the process and persons who requested to be notified of rulemaking for water quality standards.

Comment A-2. TDEC's public hearings should be held in the evening or on Saturday.

Response: We have held meetings in the evening at many times in the past and will again in the future. However, in the past, many public meetings have been poorly attended, particularly in the evening. In 2010, we held evening public meetings in Memphis and Knoxville on the subject of the draft 303(d) List. No one attended at either location.

Staff resources are not unlimited and we must consider participation levels when allotting our time. Even if people cannot attend one of our hearings, comments can be submitted by regular mail, fax, or electronic submission.

Comment A-3. I would like a direct response from TDEC regarding my comments.

Response: The department compiles comments and responds to each in this document. This is part of the formal public participation process and is available to be reviewed by others.

B. GENERAL COMMENTS: Legal Considerations and Federal Requirements

Comment B-1. One need only look at the division's water quality assessment reports and the underreporting of water quality impacts to see that water quality standards and the division's assessment processes are inadequate.

Response: The commenter provided as support for this comment the loss of aquatic species, including endangered mussels, due to the widespread impoundment of streams in Tennessee. We agree that the historical impacts of dams have been significant, but many of these projects were completed before the Clean Water Act was enacted. For example, Watts Bar and Douglas reservoirs were impounded in 1942.

We would be happy to consider specific suggestions to either water quality standards or the state's water quality assessment process.

Comment B-2. The goal of the water pollution program is to reduce pollutant levels. With this in mind, it is hard to understand why the criteria levels tend to stay the same rather than be reduced over time.

Response: We understand this comment, particularly in relation to language in the federal Clean Water Act, but would state the goals of the water quality standards process a bit differently: the purpose of clean water goals is to help insure that streams meet their designated uses. Where they do, our goal is to maintain their level of quality. Where they don't, our job is to implement controls over pollutant sources. The criteria provide a guide for both jobs.

It is not part of that strategy to ratchet down criteria levels arbitrarily or automatically.

Comment B-3. The proposed changes do not help the department accomplish its legal mandate to identify and restore impaired waters.

Response: The commenter has not specified a revision in voicing this concern. We consider the changes we have proposed to reflect not only the most current science, but also our years of experience running the regulatory program. Proper setting of standards is a critical tool in our efforts to identify and restore impaired waters as well as to fulfill our other statutory duties.

Comment B-4. NPDES permits should state that exceedence of any water quality standard is a violation.

Response: This prohibition is in the act and is included in standard permit language.

Comment B-5. The changes to the antidegradation statement place an unfair burden on the business community in Tennessee.

Response: The state may not authorize degradation without justifying that the change in water quality is in the public interest. If the commenter has a suggestion on how the administrative burden might be reduced, while maintaining the state's ability to make a proper judgment concerning degradation, we would be happy to consider it. However, most of the changes to the antidegradation statement are to provide clarity to the process and the procedure which should benefit all parties and in one instance the process has been streamlined by the deletion of one public meeting.

Comment B-6. The antidegradation statement should be used to protect Tennessee's aquatic diversity, plus species with special status.

Response: We agree. The characteristics for Exceptional Tennessee Waters include measures of biodiversity and the presence of threatened and endangered species.

C. GENERAL COMMENTS: Miscellaneous

Comment C-1. 1200-04-03 does very little to make a connection between water quantity and quality issues.

Response: We do not agree that we have disregarded the linkage between water quantity and quality in Tennessee. We would point to our promulgation of flow criteria in the last triennial review, the adoption of habitat criteria two triennial reviews ago, and our antidegradation statement which incorporates implementation procedures for not only dischargers, but water withdrawals and habitat alteration projects, as evidence of this success.

Comment C-2. Water quality criteria do not go far enough to regulate water withdrawals.

Response: We do regulate water withdrawals under certain circumstances (see the previous response for more details about the role of water quality standards in water quantity issues). The department gets its regulatory authority from the Water Quality Control Act, which might have to be altered to provide the change envisioned by the commenter.

Other provisions of the rules directly address the requirement to obtain a permit for certain water withdrawals. See Chapter 1200-04-07. In response to this and other comments, we have made changes to the antidegradation statement (in Rule 1200-04-03-.06) to explicitly address how the rule applies to water withdrawals.

Comment C-3. Tennessee's criteria should recognize regional differences in water quality.

Response: We agree and identified a series of reference streams statewide which are monitored to establish the least impacted condition of wadeable streams. The following criteria specifically incorporate the concept of regional variability in water quality: nutrients, color, suspended solids, habitat, pH, dissolved oxygen, and biological integrity.

Comment C-4. The department should set criteria at more stringent levels than those suggested by EPA.

Response: We agree that we have the option to be more stringent than the national criteria suggestions. We would establish criteria more stringent than recommended by EPA if it is determined that specific national criteria are not adequately protective of Tennessee's water resources. The commenter has not suggested any specific changes or a science-based rational for doing so.

Comment C-5. Criteria should be based on whatever is best for Tennessee, not just what EPA suggests.

Response: We agree. Where we have had better ideas regarding criteria levels, we have had no problem proposing them. However; EPA has performed primary research into the effects of pollutants and for most substances, we have not.

Comment C-6. Due to flaws in the water quality assessment process, the department should revise the 2008 305(b) Report before the changes to the water quality standards are finalized.

Response: The most recent 305(b) report was completed in 2010. The new version replaces the 2008 version as our current assessment.

Comment C-7. Under Rule 1200-04-03-.03, the various sections only give the name of the use. The section is composed of the criteria for that use.

Response: We agree and have made this revision. For example, the heading of Rule 1200-04-03-.03(1) will now say: "the criteria for the use of Domestic Water Supply are the following."

D. SPECIFIC COMMENTS: 1200-04-03-.02, General Considerations

Comment D-1. The description of wet weather conveyances should be revised to include the new language adopted by the legislature and incorporated in the Water Quality Control Act.

Response: We agree that since those rules have already gone through the process and become effective, these rules now incorporate that language so that all of the changes regarding wet weather conveyance determinations and associated definitions are not unintentionally deleted.

Comment D-2. The passage of the "wet weather conveyances bill" in 2009 will make it difficult for the department to protect headwater and ephemeral streams, plus biological integrity in Tennessee streams.

Response: We agree that it is imperative to protect headwater streams. But by definition in the law, headwaters that support aquatic life are not wet weather conveyances.

Comment D-3. The section about the public's reasonable uses of waters suggests that industrial use and power generation are just as important as aquatic life protection and recreation. They are not.

Response: The section in question is a listing of reasonable uses, not a ranking. The criteria for recreation and aquatic life protection are generally more stringent, reflecting the greater sensitivities of these uses to pollutants.

Comment D-4. The phrase "economically achievable" in Rule 1200-04-03-.02(4) creates an inappropriate exemption for dischargers in which they can avoid having to install pollution prevention equipment.

Response: A full reading of the passage suggests otherwise.

...existing pollution should be corrected as rapidly as practicable, and future pollution prevented through the best available technology economically achievable or that greater level of technology necessary to meet water quality standards; (emphasis added)

Economics is always a factor and the technology that might be needed to fully treat an effluent may not be available. However, the cited passage is clear that the goal at all times is to meet water quality standards.

E. SPECIFIC COMMENTS: 1200-04-03-.03(2), Criteria for Water Uses, Domestic Water Supply

Comment E-1. Tennessee should adopt the 10 mg/L nitrate drinking water criterion based on the protection of infants (blue baby syndrome).

Response: We agree and have made this revision.

F. SPECIFIC COMMENTS: 1200-04-03-.03(3), Criteria for Water Uses, Fish and Aquatic Life

Comment F-1. Different aquatic species have different sensitivities to pollutants, a fact not considered in the criteria.

Response: EPA develops national criteria for pollutants by conducting toxicity tests (or by incorporating the results of tests conducted by others) for a set number of different types of aquatic life. Criteria are intended to protect the most sensitive species. Additionally, an uncertainty factor is added to provide another level of conservatism to the criteria. Should a more sensitive species be discovered, the criteria can be reevaluated and adjusted.

Comment F-2. Tennessee's dissolved oxygen criterion should be raised to a minimum of 6.0 mg/L in areas not already set at that level or higher.

Response: The present dissolved oxygen criterion of 5.0 mg/L is appropriately protective according to the literature.

Comment F-3. Areas known to contain naturally reproducing mussel populations should have a higher dissolved oxygen criterion. EPA suggests a minimum of 6.5 mg/L in areas not already set at that level or higher.

Response: The national criteria table on EPA's website refers the reader to the 1986 Gold Book regarding dissolved oxygen. In that section, the national criterion is found in Table 1. The one day minimum dissolved oxygen standard for early life stages is 5 mg/L, Tennessee's current criterion.

The number cited by the commenter comes from Table 2 and is a level suggested to prevent any "production impairment" of fish. However, this number is not the national criterion.

Comment F-4. Tennessee's pH criterion should be revised to be more stringent.

Response: The commenter has not suggested a set of alternate values or the reason the alternative would be better for aquatic life. Our view is that our pH criteria are protective and EPA has approved them.

Comment F-5. Tennessee should adopt EPA's new turbidity criterion.

Response: The turbidity number the commenter is referring to is not an instream criterion, but is rather a performance standard for runoff from construction sites. In aquatic systems, many things can cause elevated turbidity levels, many of which are natural. By themselves, turbidity levels are not a good indication of pollution.

Additionally, EPA has withdrawn the proposed turbidity performance standard.

Comment F-6. Tennessee should have a turbidity criterion, since silt is one of the most frequently-cited pollutants.

Response: We agree with the commenter that silt is a frequently-cited pollutant in Tennessee waters. But as stated previously, turbidity measurements are an inaccurate method for assessing silt impairment.

Comment F-7. The state has not proposed criteria for silt, which is currently one of the most frequently-cited pollutants impacting Tennessee waters.

Response: The commenter is correct that we have not proposed a numeric criterion for silt under the fish and aquatic life protection provisions. We have found our narrative criterion for habitat to be the best tool for diagnosing stream impairment due to excessive silt. In fact, it is the basis for the statements we have made about waters that are impaired by silt.

Comment F-8. Tennessee should adopt Illinois' sulfate criterion.

Response: Currently, sulfate would be regulated in Tennessee under our "Toxic Substances" provision [Rule 1200-04-03-.03(3)(g)]. EPA has not recommended a sulfate criterion and we have performed no research to determine the levels needed to protect Tennessee streams, which are considerably different than those found in Illinois. It would be better to keep this criterion narrative at present, which gives us the flexibility to select a level best for our streams, rather than adopt a rigid numeric criterion which may be overly stringent or not protective enough.

Comment F-9. Tennessee should adopt EPA's aluminum national criteria.

Response: Aluminum is not a priority pollutant. Tennessee currently regulates it by way of the narrative "Toxic Substances" criterion. EPA has acknowledged problems with the current numeric national criteria for aluminum. For example, the chronic value is appropriate for situations where both the stream pH and hardness are below 6.6 and 10, respectively. However, relatively few streams have these specific conditions. As pH and hardness increase, aluminum is less toxic. Additionally, EPA also correctly states that many high quality streams have aluminum levels that exceed 87 ug/L.

For these reasons, we will not recommend adopting the national criterion at this time in hopes that it can be refined in the future.

Comment F-10. For numerous toxicants, including selenium, the chronic criteria is much lower than the acute value. Why even bother to have acute criteria?

Response: We need both chronic and acute criteria to protect aquatic life. Chronic criteria are best thought of as average concentrations that should be maintained over time. An acute criterion is a maximum level to not be exceeded at any point.

Without acute criteria, we could not regulate spikes in contaminant levels that might be toxic, but would not significantly raise average levels over time.

Comment F-11. The existing EPA national chronic selenium criterion (5 ug/L) is not protective. A chronic selenium criterion of 2 ug/L should be adopted by Tennessee

Response: The best information available to the department supports continuance of the present criteria for selenium. If better science becomes available we will certainly consider it.

Comment F-12. The 2004 EPA draft selenium national criterion represents more defensible science and should be promulgated instead of the existing national criterion proposed by the department. A criterion based on the 2004 draft guidance would be approved by EPA.

Response: Every indication we have received from EPA in the last year suggests that the 2004 draft no longer represents their current thinking on selenium. Thus, we are less certain than the commenter that EPA would approve an approach based on the 2004 draft, especially when we have little idea how we would implement it.

As noted by the commenter, in our Notice of Rulemaking Hearing draft set of revisions presented to the Water Quality Control Board in 2009, we suggested going to EPA's current national criterion for selenium, which would have been a chronic value of 5 ug/L and a formula for calculating the acute criterion based on the ratio of selenite and selenate in the water. However, we received comments objecting to that formula so we have decided that it would be better to stick with our previous EPA's approved criterion (5 ug/L chronic, 20 ug/L acute) and let the national discussion about selenium continue to a more final resolution. Staying at 5/20 would leave us at the same criteria level as many of our neighboring states. We note that none of the other Region 4 states have adopted the 2004 selenium draft criterion.

Comment F-13: The acute criteria formula originally proposed by the department for selenium is dated and flawed when compared to the acute formula in the 2004 EPA draft, which allows for consideration of the effects of sulfate in reducing the toxicity of selenate. By using these 2004 calculations, selenate is less toxic than selenite.

Response: We agree with the commenter that our original recommendation for the acute selenium formula should be dropped; however, we have changed the acute criterion back to the existing 20 ug/L rather than the approach of the 2004 EPA draft.

The commenter is correct that the 2004 draft EPA selenium formula incorporates sulfate into the calculations and at elevated sulfate levels, selenate can appear to be less toxic than selenite. However, several things should be noted:

1. Sulfate is toxic. As noted by a previous commenter, Illinois has adopted a numeric criterion for sulfate.

2. In their sample calculations, EPA used a 100 mg/L sulfate level (page 24 of the 2004 draft). We have reviewed the ambient water quality data in Tennessee and consider background sulfate levels to generally be much lower. However, streams historically impacted by coal mining activities tend to have much higher levels. Since mining discharges also may discharge selenium, using the sulfate altered formula would potentially allow the discharge of higher amounts of one pollutant, due to the discharge of another pollutant. When these pollutants enter the environment, the oxidation states of each may change which alters their toxicity.

3. As stated in previous comments, the 2004 draft reflects unsettled science. EPA may go in another direction in their next effort.

Comment F-14. Tennessee should not propose adopting the 2004 EPA draft selenium national criterion. EPA intends to publish a new draft by February, 2010.

Response: We will withdraw our recommendation to the board that we adopt the existing national water criterion for selenium. We note that at the time of this writing (November, 2011), there is no new selenium draft guidance, which suggests to us that the science associated with this criterion continues to be in flux.

Comment F-15. Tennessee needs a fish tissue-based criterion, such as suggested in the 2004 EPA draft selenium national criterion.

Response: As stated in the previous response, the latest indications from EPA suggest that they may be moving from a tissue-based criterion to one based on specific organs, such as reproductive parts, as a better indicator of toxicity problems induced by selenium. Particularly because EPA is evaluating recent studies and other data and their position may change based on those, we prefer to wait until EPA publishes its recommended criterion on selenium.

Comment F-16. If Tennessee adopts a fish tissue based criterion for selenium, it should be 4 mg/kg dry weight rather than the value suggested in the 2004 EPA draft selenium national criterion.

Response: We are not recommending a fish tissue-based criterion.

Comment F-17. The board need not promulgate an implementation procedure for a fish tissue-based selenium criterion. Such an implementation procedure, which could include a translator for converting the fish tissue-based criterion into a water concentration, could be developed later as part of the permitting strategy. Thus the board would be free to move forward with promulgation.

Response: The department agrees in principle that the board need not promulgate an implementation procedure if it were to go forward with a chronic selenium criterion based on fish tissue. But as a practical matter, we do not think a decoupling of the criterion/implementation procedure could be successfully accomplished, given that we expect that EPA would insist on knowing exactly how Tennessee intended to translate such a criterion prior to approving it for clean water act purposes. As EPA has yet to provide guidance on such an implementation procedure and we have done no primary research of our own, we would be at a loss to come up with a process EPA would approve.

Comment F-18. The department's recommendation for a new selenium criterion is not scientifically defensible. It was withdrawn by EPA as being too burdensome to industry in the Great Lakes.

Response: The department has withdrawn this recommendation, not because it is not scientifically defensible, but for all the reasons stated above.

Comment F-19. The department should have proposed promulgating the recently published new draft ammonia criterion.

Response: Much like the ongoing discussion regarding selenium, it is problematic to consider draft criteria, although we do not suggest that it is impossible to promulgate a draft national criterion or that EPA would automatically disapprove it. However, as a general statement based on our observations of this process over the years, it is better to let the public review of new national criteria proceed as these draft positions are often modified by this process.

Comment F-20. The department should propose a criterion for nonylphenol, but should select a more protective one than the EPA national criterion of 28 ug/L acute and 6.6 ug/L chronic. Environment Canada has adopted a more stringent criterion based on synergistic effects with other compounds.

Response: We have added the EPA national criterion for this substance (28 ug/L acute, 6.6 ug/L chronic). Regarding criteria developed in other countries: we have not researched this, but understand that Environment Canada made assumptions about the relative toxicities of the synergistic compounds. We think that it would be difficult to defend a criterion developed in Canada, since EPA would not help us explain a criterion they did not derive.

Comment F-21. The department should consider adopting EPA's national chronic criterion for demeton (0.1 ug/L), guthion (0.01 ug/L), malathion (0.1 ug/L), methoxychlor (0.03 ug/L), and Mirex (0.001 ug/L).

Response: We agree and have made this change.

Comment F-22. The department should consider adopting EPA's national criterion for diazinon (0.1 ug/L, chronic & acute) and parathion (0.013 ug/L chronic, 0.065 ug/L acute).

Response: We agree and have made this change.

Comment F-23. The department has said that although there is a criterion for "nutrients" [1200-4-3-.03(3)(k)], nutrients is not a parameter in the application of the antidegradation statement. The criterion should clarify this.

Response: We agree with the commenter and have added a number of provisions to the criteria, the definitions, and the antidegradation statement clarifying the relationship between criteria and parameters, especially in regard to nutrients, biological integrity, and habitat.

Comment F-24. Tennessee should continue to make progress in developing numeric lake criteria.

Response: We agree. Specifically regarding nutrients, the department has developed a written plan for development of nutrient criteria. This document can be accessed from our webpage at http://www.state.tn.us/environment/wpc/publications/pdf/NutrientCriteriaWorkplanRev.pdf.

Comment F-25. Tennessee must promulgate numeric criteria for nutrients rather than the current narrative one.

Response: Nutrients simply don't act in streams strictly in relation to concentration. Other factors influence the effects nutrients have in streams. Our criterion relies on numeric translators for wadeable streams. We believe this represents best use of available science and it has been approved in the past by EPA.

Comment F-26. Strict numeric nutrient criteria in Tennessee will help protect the Gulf of Mexico.

Response: We are standing by to do our part to help prevent hypoxia in the Gulf. However, as we have long maintained, EPA must take the lead in determining acceptable nutrient loadings and parsing out where allocations must be reduced. Additionally, EPA should provide guidance concerning what nutrient criterion is appropriate for the Mississippi River. This job is larger than any individual state and will require cooperation from all.

Comment F-27. Tennessee should have adopted EPA's national numeric nutrient criteria instead of criteria based on reference stream data. (The commenter provided a detailed critique of departmental documents published in 2001 and 2004.)

Response: The commenter is revisiting a decision made by Tennessee ten years ago and approved by EPA as scientifically defensible. Our approach- envisioned, developed, and undertaken well before the federal emphasis on nutrients began, is working well for the following reasons:

1. Tennessee's existing nutrient criteria are based on reference streams in Level 4 subecoregions, a more detailed approach. EPA's approach lumped Level 3 ecoregions together, some of which are not even found in Tennessee.

2. The database used in EPA's stream criteria calculations contained data from sites known to be large rivers and lake embayments. Tennessee limited its data to wadeable streams.

3. Tennessee's criteria were extensively field tested before and after publication, EPA's were not.

4. Tennessee's criteria approach incorporates biological response, EPA's does not.

5. Tennessee has continued to collect reference stream data at existing sites, has added new reference sites as discovered, and has continued to refine these criteria values.

6. EPA said at the time of publishing its nutrient criteria that it would be better for states to develop their own approaches, which is exactly what Tennessee had done. EPA has often referred to Tennessee's approach as a model for other states.

Comment F-28. The department has said that although there is a criterion for "biological integrity" [Rule 1200-04-03-.03(3)(m)], it is not a parameter in the application of the antidegradation statement. The regulation should clarify this.

Response: The commenter is correct that biological integrity is a condition index rather than a parameter. Beyond that, the parameters associated with biological integrity (e.g., number of EPT taxa) are response variables rather than cause variables. That means they are a measurement of the effects of a pollutant or the absence of pollutants, rather than a pollutant themselves. We have added some clarifying language.

Comment F-29. The existing biological integrity criterion contains the phase "except as authorized under Rule 1200-04-03-.06." Why is this criterion singled out for this phrase?

Response: The commenter is correct that antidegradation statement applies equally to all of the general water quality criteria. We have removed this phrase to avoid confusion.

Comment F-30. The biological integrity criterion should be numeric rather than narrative.

Response: Two triennial reviews ago, the department proposed, then withdrew a set of numerical criteria in favor of a position based on narrative criteria with regional numeric translators. We feel this approach has worked well.

Comment F-31. Tennessee's biological integrity criterion does not protect early life stages. Additionally, non-native species should not count towards diversity scores.

Response: Our Tennessee Macroinvertebrate Index, the foundation of our biocriteria, is based on the aquatic larval stages of insects. It is true that we count larvae rather than eggs, so we count early stages rather than the earliest stages.

We tried to think of non-native stream aquatic macroinvertebrates and other than *Corbicula*, we drew a blank. We do count *Corbicula* towards total taxa, but as an organism considered tolerant of pollution, they count against a stream's score in most other ways. We do not think of our assessments as being corrupted due of non-native species.

Comment F-32. Tennessee's habitat and biological integrity criteria do not provide for protection from cumulative impacts.

Response: We do not agree. Our habitat criteria and biocriteria are based on a wide-range of potential impacts that are sensitive to cumulative impacts to habitat and biology.

Comment F-33. Tennessee's biological integrity criteria should require that permittees perform biological monitoring in receiving waters.

Response: We agree that if permittees are potentially altering biological integrity, they should have some responsibility to monitor these changes and many permits now contain these requirements. This is a case-by-case determination that is more appropriately made in the permitting process than in the setting of clean water goals.

Comment F-34. Tennessee's criteria should speak to the problem of entrainment of aquatic life in power plant intakes.

Response: We have a set of biological integrity standards that apply to aquatic life, but think of entrainment as a permitting issue. EPA has proposed new regulations for entrainment and impingement and has identified intake technologies to reduce the magnitude of this problem.

Comment F-35. The department has said that although there is a criterion for "habitat" [1200-4-3-.03(3)(n)], habitat is not a parameter in the application of the antidegradation statement. The criterion should clarify this.

Response: We agree with the commenter. Like biological integrity, habitat is a condition index rather than a parameter. We have added a sentence identifying the parameters associated with this criterion.

Comment F-36. The habitat criterion [Rule 1200-04-03-.03(3)(n)], identifies "types" of habitat loss, but then goes on to list activities that cause these losses. It is the activities that are regulated.

Response: We agree with the commenter and have added a clarifying statement.

G. SPECIFIC COMMENTS: 1200-04-03-.03(4), Criteria for Water Uses, Recreation

Comment G-1. Tennessee needs a numeric turbidity criterion.

Response: Our recreational turbidity criterion in Rule 1200-04-03-.03(4)(d) can be applied numerically in certain circumstances if the test stream can be compared to the reference stream database. These numeric interpretations of the turbidity criterion could be used as the basis for TMDLs, for example.

Comment G-2. The proposed recreational criterion for selenium is less stringent that the criterion for fish and aquatic life protection. People are no less sensitive to selenium than aquatic life.

Response: Different organisms are never equally sensitive to any toxicant. The results of toxicity tests and observations of humans under various selenium exposure scenarios indicate that people are less sensitive than fish and birds. EPA's national criteria incorporate the results of this research and observations. The Food and Drug Administration (FDA) has stated that most people do not need the selenium supplements commonly found in men's vitamins but that they are not harmful. (FDA did speak out on some of the "mega packs" of vitamins that contained too much selenium. These products have been pulled from shelves.)

Comment G-3. Tennessee should consider adopting EPA's national numeric criterion for zinc.

Response: We have made this revision, but note that zinc is not very toxic to people.

Comment G-4. EPA has published a new national criterion for mercury based on fish tissue concentrations. Tennessee should adopt this criterion.

Response: EPA has recommended this change and says that there are three ways a state can translate a tissue-based criterion for permit limit development:

Implement the fish tissue criterion without water column translation, or

Translate the fish tissue criterion to a water column value using bioaccumulation factors (BAFs). Three approaches include:

1. Site-specific BAFs
2. Modeled BAFs
3. BAFs derived using the results of field studies that are not site-specific (in limited circumstances); or

Combination (fish tissue criterion for some or all waters, combined with water column criteria for some or all waters).

We will follow the third approach, retaining the current water column number, while using the fish tissue criterion for decisions regarding the issuance of fish tissue advisories.

Comment G-5. Tennessee should consider adopting EPA's national numeric criterion for dinitrophenols.

Response: We already adopted EPA's criterion for 2,4-Dinitrophenol. Since the criterion is exactly the same, we have simply changed the name to Dinitrophenols.

Comment G-6. Tennessee should consider adopting EPA's national numeric criterion for Ether, Bis(Chloromethyl); Hexachlorocyclohexane-Technical; Nitrosodibutylamine; Nitrosodiethylamine; and Nitrosopyrrolidine.

Response: We have made these revisions, adjusting the criterion for Tennessee's different risk basis for carcinogens.

Comment G-7. Tennessee should consider adopting EPA's national numeric criterion for Nitrosamines; Pentachlorobenzene; 1,2,4,5-Tetrachlorobenzene; and 2,4,5-Trichlorophenol.

Response: We have made this revision.

Comment G-8. Tennessee should have additional numeric criteria for radionuclides, especially tritium.

Response: At this time EPA does not have a recommended criterion for tritium, and we do not have a basis to set a numeric criterion.

Comment G-9. The department should do more to regulate the discharge of radionuclides.

Response: This is a permitting rather than a clean water goal-setting issue, but the commenter should be aware that the regulation of radioactive materials is primarily done under standards set by the U.S. Nuclear Regulatory Commission, because the Atomic Energy Act preempts EPA and the states from regulating most radioactive materials.

H. SPECIFIC COMMENTS: 1200-04-03-.03(5), Criteria for Water Uses, Irrigation

Comment H-1. Tennessee's toxic criteria for the irrigation designated use are vague and may not adequately protect the health of people eating fruits or vegetables irrigated with polluted waters.

Response: There have been several high profile events in recent years in which irrigation water has been thought or shown to be the source of bacterial contamination of certain vegetables, so we understand the commenter's concern.

The U.S. Food and Drug Administration has the authority and responsibility to regulate the quality of food products in the marketplace. Should EPA suggest national numeric water quality criteria to protect this use, we will adopt them.

I. SPECIFIC COMMENTS: 1200-04-03-.03(5), Criteria for Water Uses, Livestock Watering and Wildlife

Comment I-1. Tennessee's toxic criteria for the livestock watering and wildlife designated use are vague and may not adequately protect the use.

Response: Our criteria for toxic substances for this use are narrative but we do not agree that status automatically equates to less protection. As EPA in conjunction with the U.S. Fish and Wildlife Service develop numeric wildlife criteria for selenium, for example, we will be standing by to adopt them. However, in the interim, we have not done primary research to determine more definitive protection levels and the commenter has not suggested any.

J. SPECIFIC COMMENTS: 1200-04-03-.04, Definitions

Comment J-1. This section should also define available conditions and unavailable conditions.

Response: Please note that we are changing these terms to available and unavailable parameters rather than conditions. We have added a definition of "parameter."

Rule 1200-04-03-.06(2)(a) says that "unavailable parameters exist where water quality is at, or fails to meet, the water quality criteria in Rule 1200-04-03-.03."

Rule 1200-04-03-.06(3)(a) says that "available parameters exist where water quality is better than the water quality criteria in Rule 1200-04-03-.03."

Comment J-2. Tennessee currently puts the concept of "temporary" alterations within the definition of *de minimis*. But since temporary impacts are not degradation, couldn't it make more sense to revise the current definition of degradation to include this concept?

Response: We agree with the commenter, especially now that we have proposed revising the definition of *de minimis*. We have added the words "non-temporary" to the definition of degradation and removed the concept of short duration from the definition of *de minimis*.

Comment J-3. Since Tennessee now has flow criteria, shouldn't the definition of degradation include water withdrawals as a potential type of degradation?

Response: We agree with the commenter and have made this revision in the definition of degradation.

Comment J-4. A *de minimis* level of degradation should not be allowed in high quality waters. It allows water quality to be lowered incrementally, the "death from a thousand cuts."

Response: We understand this comment, but draw the commenter's attention to the 10 percent cumulative cap on applications of the *de minimis* provision. EPA has approved this concept as being consistent with federal regulations.

Comment J-5. The existing definition states that a *de minimis* level of alteration is not degradation, yet the new definition of "measurable degradation" says that that usually lesser amount of alteration is degradation. How can both be true?

Response: We agree with the commenter that a *de minimis* level of alteration, while small, is still degradation. We have deleted the statement in the regulation that *de minimis* does not represent degradation.

Comment J-6. The existing definition of *de minimis* could be clarified if it separated the discussions of how this level of alteration would be identified for the three different activities. Could subparagraphs be added?

Response: We have restructured this definition to add clarity. The definition now contains parts (a)1, (a)2, (a)3 for discharges, water withdrawals, and cumulative effects of discharges or withdrawals, respectively. Subparagraph (b) is specific to habitat alteration activities.

Comment J-7. The definition of *de minimis* does not explain how the concept of small magnitude or short duration will be applied.

Response: We believe the definition does explain how small magnitude will be determined by basing it on a percentage of the available assimilative capacity.

We have proposed changes to the definition of *de minimis*, specifically, acknowledging that *de minimis* is degradation. Since temporary impacts are not degradation, the concept of temporary impacts has been moved to the definition of degradation.

Short duration or temporary conditions are going to differ from site to site. One day's duration of an impact might not affect a larger stream, but devastate a smaller one. Additionally, since various pollutants have differing toxicities or potencies for human health impacts, the amount of exposure that might cause problems would differ for each. Five minutes of one pollutant might cause lasting harm, but five hours of another might have no effect.

Thus, in order to protect headwater streams and to account for the differing potential of each pollutant to cause harm, we have resisted any impulse to define what is "short duration."

Comment J-8. The definition of *de minimis* includes the word "insignificant" for the amount of additional degradation can occur beyond the 10 percent cap on cumulative effects. "Insignificant" should be defined. Could a bioaccumulative substance be considered insignificant?

Response: Like the concept of temporary, the significance of the effects of a substance on a waterbody is based on the nature of the stream and the toxicity or potency of the pollutant. For that reason, this concept would not lend itself to a rigid definition. There might be a specific instance (large receiving stream, very small discharge) in which the discharge of a bioaccumulative substance would be insignificant, but in general, we think of these substances as having a significant impact on a waterbody.

Comment J-9. The definition of *de minimis* allows for degradation above the 10 percent cap on cumulative effects. This is contrary to the recent Sixth Circuit Court ruling regarding Kentucky's antidegradation statement.

Response: The concept of allowing an insignificant amount of degradation above the ten percent cumulative cap is an existing provision of our *de minimis* definition, one that we are not proposing to revise. EPA already approved this approach during the previous triennial review.

Comment J-10. Activities that cause or contribute to a condition of pollution cannot be deemed *de minimis*.

Response: We understand this comment, but do not fully agree for several reasons. First, although we understand where this phrase comes from, we are getting away from "cause and contribute" in antidegradation

language. Obviously, something that "causes" the condition of pollution can never be *de minimis*. Causing the loss of use is always a prohibited amount of degradation.

Can an activity that "contributes" to the loss of use be *de minimis*? We think it could, if it was a very small contribution. Having the word "contributes" in the definition of *de minimis* might fuel arguments that even a molecule of a substance could contribute to loss of use.

Comment J-11. The testimony of permit writers in the Plateau Sand case demonstrated that the *de minimis* concept is poorly developed and is haphazardly applied to individual permits.

Response: We think the commenter has overstated the magnitude of this issue, but agree with the need for clear antidegradation guidance to staff. The initial proposal for amending these rules made changes to clarify the application of the concept of *de minimis* in the antidegradation analysis and we have now made additional changes to make it even clearer. We have clarified the applicant's burden to provide information on this point and explicitly stated that the determination of whether an impact is *de minimis* is the first step of the antidegradation analysis and can conclude it. However, to a certain degree this comment may be raising a permit issue rather than a water quality standards issue.

Comment J-12. A detailed explanation of the calculations used to determine that degradation is *de minimis* should be maintained in the permit files.

Response: We agree, but this is a permit processing issue rather than a water quality standards issue.

Comment J-13. *De minimis* levels of degradation should not be allowed for toxic or bioaccumulative substances.

Response: We agree that care needs to be exercised in the authorization of the discharge of bioaccumulative or toxic substances. However, it should be remembered that *de minimis* is based on the assimilative capacity of a substance, which in turn is based on that substances' criterion. The criteria already take into consideration the bioaccumulative or toxic effects of that substance.

Comment J-14. No activity should be considered *de minimis* simply based on the type of the activity.

Response: We understand this comment, but believe that selected general permits that were public noticed as representing *de minimis* levels of degradation are appropriately considered to represent an insignificant level of degradation. EPA has agreed with this approach.

Should the provisions of the permit not be followed and more than an insignificant amount of degradation occurs, that becomes an enforcement issue rather than a failure of goal-setting.

Comment J-15. The second paragraph of the existing *de minimis* definition should be discarded.

Response: The second paragraph in the existing regulation explains how the cumulative cap on *de minimis* will be implemented, which we consider critical. We will retain this paragraph, although as stated in a previous comment, we have restructured this definition to add clarity.

Comment J-16. The proposed approach to *de minimis* does not consider secondary impacts. For example, a power plant might withdraw a *de minimis* amount of water from a reservoir, but entrain a significant number of juvenile fish.

Response: In the commenter's hypothetical example, the withdrawal of the specific volume of water would be considered a *de minimis* effect if it complied with the definition found in Rule 1200-04-03-.04(4)(b). However, the related but different issue of fish entrainment would not be considered a *de minimis* effect.

Comment J-17. The proposed definition of measurable degradation is based on the results of chemical tests at very low detection levels. Substances may be unreliably quantified at those levels.

Response: The concept of measurable degradation is considered at the time of permitting. In practice, degradation will be considered measurable if the difference in instream concentration resulting from an addition of pollutants could be detected using laboratory methods specified by the division.

Comment J-18. The proposed definition of measurable degradation mentions dischargers but not water withdrawals. In a stream that is already at or violating a water quality standard, a water withdrawal might increase concentrations of the pollutant. That scenario should be addressed also.

Response: We agree and have added water withdrawals to the definition of measurable degradation.

Comment J-19. The definition of "mixing zone" is vague. More explanation of mixing zones should be given.

Response: In the next section "Interpretation of Criterion" [Rule 1200-04-03-.05(2)], more information about mixing zones is provided.

Comment J-20. The proposed definition of "normal weather conditions" has a typo. In the fourth line, "precipitation date" should be "precipitation data."

Response: We have made this correction.

Comment J-21. Under the antidegradation provisions for available and unavailable conditions, the word "parameter" is used. This should be defined lest the public be confused. Some criteria are for substances directly measured in analytical tests, such as iron or manganese. These are properly considered parameters. Other criteria are for overall conditions which are calculated composite scores, such as biological integrity and habitat, which are not directly measured. These are not parameters.

Response: We agree and have added the following definition: Parameter - A directly measurable biological, chemical, radiological, bacteriological, or physical property of water. Additionally, we added a second sentence to the definition to clarify the difference between a criterion and a parameter. We also have used the terms available and unavailable parameters to avoid the ambiguity of "conditions."

Comment J-22. Since the criteria for biological integrity references "response variables," a definition would be helpful.

Response: We agree and have made this addition.

Comment J-23. Why not just say that any stream that is a meter or less in depth is wadeable, instead of referring to the size of a biological sampling net?

Response: Streams typically deeper than one meter might also be sampled by wadeable methods, something our current definition makes allowances for.

Comment J-24. The definition of wet weather conveyance should explain what is meant by "direct response of precipitation."

Response: The department has developed a wet weather conveyance determination procedure (as a separate process) which has been added to water quality standards.

K. SPECIFIC COMMENTS: 1200-04-03-.05, Interpretation of Criteria

Comment K-1. Temperature criteria violations should not allowed in mixing zones.

Response: Such discharges would be required to have Section 316(a) conditions in their NPDES permit. Section 316(a) provisions are a federal water quality standard that supersedes state temperature criteria. In place of the numeric criterion, permits subject to Section 316(a) have a requirement to maintain balanced indigenous biological conditions.

An NPDES permit with 316(a) requirements would still be subject to the conditions imposed on mixing zones in Rule 1200-04-03-.05(2). For example, the heat could not cause lethality, or prevent the free passage of fish upstream and downstream.

Comment K-2. The mixing zone provision should be amended to add that the drift of ichthyoplankton cannot be prevented.

Response: We agree, but feel that the prohibitions in Rule 1200-04-03-.05(2) already contain this concept in the part requiring the free passage of fish. We do not read that to limit these protections to only fish that swim as opposed to larval fish that drift.

Comment K-3. The flow basis paragraph (4) contains the following phrase:

...criteria that are wholly or partially based on direct measurements...

Some criteria are not directly measured, but are instead composed of individual parameters that are compiled to create a condition index.

Response: The commenter is correct and we have deleted the word "direct."

Comment K-4. Paragraph (5) mentions the magnitude and duration of water quality deviations, but not the frequency. Isn't this an important consideration that should be added?

Response: We agree and have made this revision.

Comment K-5. Pathogen data collected following rain events should not be treated as outliers.

Response: Part of the logic for the rain event pathogen provision is that people are unlikely to be recreating in streams during storms, thus risk is less. However, elevated rain event pathogen results are still violations of the water quality criterion.

This provision allows us not to automatically assess streams as impaired if the only elevated sample was collected during a high flow event. For example, we performed a great deal of pathogen monitoring in the Nashville area during the historic flood of May, 2010. However, since this was a 1000-year flood event, we would not consider those results to reflect normal water quality conditions.

Comment K-6. Paragraph (7) has the added phrase "or in water quality assessments." This needs clarification.

Response: We agree and have added the clarification that water quality criteria violations caused by natural conditions should not be assessed as the condition of pollution.

Comment K-7. Tennessee should have a laboratory certification process in wastewater like it does in drinking water.

Response: This idea has been explored in the past and while it has merit, it's not a subject for water quality standards

Comment K-8. Some of the general water quality criteria are set lower than the detection levels in Rule 1200-04-03-.05(8). Permittees should not be required to meet permit limits set below detection levels.

Response: Most permit limits are not set at the criteria level, since limits are based on additional factors such as ambient stream flow. However, where permit limits are below current detection levels, compliance with permit conditions is acknowledged with a result of "not-detected" at the appropriate detection level.

Comment K-9. Some of the RDLs (required detection levels) in permits are unreasonably low. (List provided by the commenter.)

Response: RDLs are an important tool in protecting water quality by assuring that permittees utilize appropriate analytical techniques.

It is important to note that according to Rule 1200-04-03-.05(8), not all substances limited in a permit are subject to RDLs. The regulation currently states: "In instances where permit limits established through implementation of these criteria are below analytical capabilities, compliance will be demonstrated..." (emphasis added). So the requirement for RDLs is triggered by the permit limit, not the criterion, since most dischargers get some dilution credit for the receiving stream. It would not make sense to require a very low detection level when the permit limit is much higher.

One of the RDLs brought to our attention by the commenter was anthracene. The commenter is correct that the RDL is challenging at 0.73 ug/L. However, the lowest numeric criterion for anthracene is 8300 ug/L, so a permittee would never be required to meet the RDL, according to the regulation.

A metal mentioned by the commenter was zinc, with an RDL of 1.0 ug/L. The fish and aquatic life criterion for zinc is hardness dependant, but at a hardness of 100 mg/L, the criterion would be 120 ug/L, so again, even in a zero flow stream, no permittee would be required to reach the RDL.

See the response to comment K-6 for additional information concerning the process for meeting alternate RDLs due to sample interferences.

Comment K-10. If RDLs are going to remain at current levels, then a process needs to be identified to allow the acceptance of scientifically valid data that has been generated with every effort to achieve the state's RDL limits.

Response: We believe that such a process currently exists. Rule 1200-04-03-.05(8) states: ...compliance with those limits will be demonstrated using the following detection limits, unless in specific cases other detection limits are demonstrated to be the best achievable because of the particular nature of the wastewater being analyzed (emphasis added).

In order to add clarification concerning how this provision will be implemented, we have added the following paragraph:

Such a demonstration shall be made at the time results are submitted and shall affirm that using methods, personnel, training, and equipment appropriate to reach applicable RDLs, the laboratory was unable to do so due to the nature of the sample. The methods, equipment, and general nature of the interference shall be provided. Inability to accurately quantify the level of a contaminant shall not be acceptable grounds for a higher detection level if the permit requirement was based on detection/non-detection.

Comment K-11. To streamline the regulation, the specific numeric RDLs should be deleted and the following bolded phrase should be added to the narrative:

"...compliance with those limits will be determined using the method detection levels associated with an applicable approved EPA analytical method as specified in 40 CFR Part 136."

Response: We don't disagree with this suggestion, but it presents a practical problem. Referencing a federal regulation in water quality standards usually requires that we add the phrase "or other defensible methods" in order to avoid certain legal problems. In this case, we feel that it would create fewer issues to simply specify the RDLs as we are doing currently. We understand we would be sacrificing flexibility for certainty.

M. SPECIFIC COMMENTS:
1200-04-03-.06, Tennessee Antidegradation Statement

Comment M-1. No stream should be presumed to be outside of the protection of the antidegradation statement.

Response: All streams in Tennessee fall under one or more of the four antidegradation categories. (It is actually possible for streams to be in more than one category, as two of the categories are based on characteristics of the stream, while the other two are approached on a "parameter by parameter basis.") If the commenter meant that no stream should be presumed not to be "high quality," we agree. Our implementation procedure requires that the antidegradation status of a stream be determined prior to a regulatory action, except when the analysis concludes with the steps described in Rule 1200-04-03-.06(1).

Comment M-2. Basing Tennessee's water quality goals on conditions on November 28, 1975 sets the bar too low.

Response: The mention of November, 1975 refers to uses in place when the Clean Water Act was signed, not the existing water quality at that time. We do not believe that this provision places a limitation on clean water goal setting.

Comment M-3. The language in (1)(a) would more closely match the historical interpretation of this passage if it said that waters are high quality if the quality exceeds recreation <u>or</u> fish and aquatic life criteria, rather than using the conjunction <u>and,</u> as is presently done. Otherwise, someone might argue that water quality had to exceed both sets of criteria in order to be considered high quality.

Response: The commenter is correct and we have made this revision.

Comment M-4. Section 316(a) permits should not be referenced in the antidegradation statement as these permits have allowed historical impacts to aquatic life in Tennessee.

Response: Section 316(a) thermal discharge permits are allowed under federal law. The Section 316(a) requirement to maintain "balanced and indigenous populations" (BIP) of aquatic life is a federal water quality standard that supersedes any state temperature criterion.

Comment M-5. Rule 1200-04-03-.06(1)(b) needs additional detail regarding what constitutes a "complete application" for the various types of activities for which an applicant might request authorization.

Response: We agree and have rewritten the section to provide additional detail. We have added paragraphs and subparagraphs for the various activities.

Comment M-6. The proposed revisions add a requirement that any authorized degradation be necessary to accommodate important economic or social development.

Response: We do not agree that this represents a new requirement. This exact language appears in Rule 1200-04-03-.06(1) in the existing regulation and applies to all "waters where the quality is better than the level necessary to support" uses. This language is directly from 40 C.F.R. §131.12.

Comment M-7. The criteria need detailed procedures on how alternative analysis submissions will be evaluated by the department.

Response: We agree that evaluation procedures are important, but think they would be better placed in policy or SOP documents.

Comment M-8. The existing 2006 regulation has different application information requirements for authorizing degradation, depending on the antidegradation category of the water. The new proposal requires the same components of an application, no matter the category.

Response: New domestic wastewater discharges or alterations above a de minimis level must perform alternatives analysis. We agree with the commenter that the information submission requirements in the existing regulation are different between "available conditions" and exceptional Tennessee waters. As stated in the previous response, we do not concede that the nature of the state's determination is different.

Our reason for standardizing alternative analysis requirements is that due to the new requirements of the "permittee bill of rights" law recently enacted, the department must ensure that applications are complete prior to starting the clock on permitting time frames. Otherwise, the antidegradation analysis is likely to take longer than the new law allows. Applications are more likely to be complete if we standardize application requirements, given that the antidegradation category usually has not been determined prior to receipt of a completed application. In our view, applicants benefit from this clarity and simplification of requirements.

Comment M-9. The regulation refers to "important economic or social development" as the proper basis for allowing degradation in high quality streams (those better than existing uses). Important to the applicant, or the public? Who decides?

Response: The department makes this determination and can only authorize the degradation if it is in the public interest.

Comment M-10. Rule 1200-04-03-.06(1)(b) has been rewritten to suggest that the state must authorize any degradation of available conditions on the basis of the social/economic interest of the public. Only a discussion of these aspects was required in the previous version of the regulation, and the state has no regulatory authority for disapproval of the alternatives analysis. The proposed language is a new requirement that should be removed.

Response: We agree with the commenter that the existing rules require the submission of a "discussion" of the social, environmental, and economic consequences of each alternative. However, we disagree that the state's role was to merely confirm that the applicant had "discussed" alternatives and that we have no regulatory authority to reject the conclusions of the applicant.

The current Rule 1200-04-03-.06(1) says that degradation will not be allowed unless the state finds "...that the lowering of water quality is necessary to accommodate important economic or social development..." In order to make this finding, the department must have a factual basis. If the applicant does not provide adequate information needed by the state to make its determination or if the submittal does not make a case that the degradation is necessary, the department can withhold approval of the degradation. We do not think the approach described by the commenter would be approved by EPA.

The changes we have proposed will clarify responsibilities for both the applicant and the department. We have not changed the nature of the responsibilities.

Comment M-11. Rule 1200-04-03-.06(1)(b) has been rewritten to suggest that all permit applications for discharges causing more than *de minimis* degradation must perform an alternatives analysis. In the past, alternatives analysis has not been required for permit reissuances where limits are not being changed. This should be rewritten.

Response: The commenter is correct that where an applicant requests a status quo reissuance to available conditions (same limits, no increase in pollutant loading or concentration), an alternatives analysis has not been required.

At the time of permit renewal of previously authorized discharges that degrade Exceptional Tennessee Waters or Outstanding National Resource Waters both the existing and proposed rules require that the permittee must perform an alternatives analysis

Comment M-12. In the case of a reissuance of a permit that only adds a *de minimis* amount of degradation, the applicant should not be required to perform an alternatives analysis.

Response: We do not agree. Any increase in loadings or concentrations does not represent a status quo reissuance, if that facility was previously authorized to cause more than *de minimis* degradation.

Comment M-13. Under the current process, applicants and division can modify applications multiple times, often outside of the public's notice. This is done to try to "game" the system.

Response: All of the division's discussions with an applicant are public record. If the concern is that the public may be unaware that discussions are taking place, we would remind the commenter that our notification procedures are for specific regulatory actions, not discussions. It is the applicant's prerogative to modify an application for many reasons, including to render the effect of the alteration *de minimis*. When the draft permit is issued, the public has the right to review the basis of any determination. If any changes are made by the division after the comment period, a third party may appeal the permit on that point without having made a comment on the issue.

Comment M-14. Initial NPDES permit applications should be put on notice and a public hearing arranged, complete or not.

Response: Many initial and incomplete NPDES permit applications are withdrawn or significantly modified. We do not think it serves a public purpose to notice these submissions, since we cannot act on them until complete.

Comment M-15. The first step of the antidegradation process should be the determination of the antidegradation category of the stream.

Response: We agree that determination of the antidegradation category of the stream is important, but we do not agree that it has to happen first. Until an applicant submits a completed application, we have no idea if the proposed activity will represent degradation in available conditions or Exceptional Tennessee Waters, or "measurable" degradation in unavailable conditions or Outstanding National Resource Waters (ONRWs).

However, in some cases, the antidegradation category will already be known, especially in Exceptional Tennessee Waters. Of course, only the seven streams specifically currently designated by the board are ONRWs.

Comment M-16. Under the proposed revisions to Rule 1200-04-03-.06(2)(a) and the proposed definition of "measurable," additions of pollutants that can be detected in chemical tests at very low concentrations cannot be allowed. Just because something is measurable doesn't mean that it represents degradation. A *de minimis* amount of degradation should be allowed.

Response: The existing regulation says that any amount that would "cause or contribute to impairment" cannot be allowed. The definition of *de minimis* allows the loss of up to 5% of the assimilative capacity. That's not allowable in unavailable waters.

Comment M-17. General permits should not be allowed in unavailable conditions [Rule 1200-04-03-.06(2)] if the permit would result in the discharge of pollutants.

Response: No general permit authorizes discharges that would cause further impairment in unavailable conditions. Discharges that would further impairment are not eligible for general permit coverage.

Comment M-18. Under the proposed revisions to unavailable parameters, Rule 1200-04-03-.06(2)(a)(1), the phrase "cause or contribute" is used. Couldn't someone argue that even one molecule could contribute to measurable degradation?

Response: Although this language came from the federal regulation, we see the commenter's point. We have deleted "or contribute" in this phrase. Only those alterations that do not cause measurable degradation in unavailable parameters will be authorized.

Comment M-19. The department's permitting of dischargers into Tier I waters ignores significant water quality impacts by theorizing that dilution is "instantaneous."

Response: We no longer have an antidegradation category called Tier I, but we assume the commenter is referring to available conditions [Rule 1200-04-03-.06(3)(a)1]. Although this comment is really about permitting procedures rather than water quality standards, discharges are carefully modeled so as to not cause impacts to designated uses. In available conditions, degradation can be allowed if it is in the public interest.

Comment M-20. Rule 1200-04-03-.06(1)(c) should indicate the levels of degradation that for each of the three main categories of activities (discharges, water withdrawals, and habitat alterations) would off-ramp the permit from any further antidegradation review.

Response: We agree and have added sub-categories that establish that if a discharge or water withdrawal would not make a measurable difference in water quality parameters; or if the effect of a habitat alteration is rendered *de minimis* due to impact minimization and/or in-system mitigation; no further antidegradation review is necessary.

Comment M-21. Rule 1200-04-03-.06(1)(c) makes no mention of measureable degradation, even though only that amount of degradation can be allowed in unavailable conditions or Outstanding National Resource Waters.

Response: The commenter is correct and we have revised this subparagraph to correct this omission.

Comment M-22. A revision to Rule 1200-04-03-.06(1)(d) proposes to delete the requirement that the applicant be informed in writing that the stream they intend to alter is an Exception Tennessee Water. Why?

Response: A new subparagraph (e) reestablishes the department's responsibility for public notice once an application has been deemed to be complete. Thus, more than just the applicant will be notified. Additionally, Rule 1200-04-03-.06(4)(d)1 provides specific notice requirements for Exceptional Tennessee Waters.

Comment M-23. The antidegradation statement should do more to require water withdrawers to engage in regional planning.

Response: The department believes in and participates in regional water use planning and has done much to encourage it. When a new water withdrawal would cause measurable degradation, the applicant must provide an alternative analysis indicating that "reasonable alternatives are not feasible." The conclusions of an alternatives analysis backed by regional water use planning would carry much more weight than one without.

Comment M-24. The antidegradation statement protects high quality waters. It is not satisfied by simply setting permit limits.

Response: We understand this comment and generally agree. We must and do, withhold permission to degrade streams if better alternatives exist or if the degradation is not in the public interest. However, the commenter must remember that the antidegradation statement only works in terms of things the department authorizes. For example, we cannot regulate agricultural water withdrawals. Thus, the statement cannot prevent all impacts to high quality waters, but must be used in conjunction with other programs and policies.

Comment M-25. Mitigation should not be mentioned in the antidegradation statement. It results in widespread impacts to fully supporting streams.

Response: The purpose of mitigation is to fully replace water resource values that are lost due to the permitted activity. That is why in-system mitigation is considered *de minimis* in this rule.

Comment M-26. In Rule 1200-04-03-.06(1)(d), the first sentence refers to Outstanding Natural Resource Waters. Isn't this "National" waters instead?

Response: The commenter is correct and we have made this revision.

Comment M-27. In Rule 1200-04-03-.06(2) and (3), the regulation refers to unavailable and available "conditions," yet goes on to describe parameters. This is confusing and might be misinterpreted.

Response: The commenter is correct. We have substituted the word "parameters" for conditions.

Comment M-28. In Rule 1200-04-03-.06(2) and (3), could the requirements be more specific based on the type of activity is being proposed?

Response: We agree that this would help clarify these requirements. We will add these additional specifics as subparagraphs.

Comment M-29. In Rule 1200-04-03-.06(2), the regulation refers to unavailable parameters, which occur when criteria are not met. But some criteria are not specific to parameters. This is confusing and might be misinterpreted.

Response: The commenter is correct. We have added clarifying language to this paragraph indicating that where criteria are for condition indices, it is the individual parameters that make up the index that are unavailable. The revisions will also explain how response variables, such as the number of taxa in a stream, will be handled in regard to unavailable parameters.

Comment M-30. In Rule 1200-04-03-.06(3)(b), the regulation states that records of antidegradation determinations must be maintained. Isn't this requirement already in the permitting regulations and doesn't it apply to more than just determinations regarding available conditions?

Response: The commenter is correct and we have deleted this passage since it might be misunderstood to suggest that this overarching requirement only applies to this one provision.

Comment M-31. In Rule 1200-04-03-.06(4)(a)6, the regulation refers to the 2006 methodology for calculating the Tennessee Macroinvertebrate Index. Hasn't this SOP been updated since then?

Response: The commenter is correct and we have substituted 2011 for 2006.

Comment M-32. In Rule 1200-04-03-.06(4)(c), could the permitting requirements be more specific based on the type of activity is being proposed?

Response: We agree that this would help clarify these requirements. We have added these additional specifics as subparagraphs.

Comment M-33. The 2003 agreement between environmental groups and business interests established provisions requested by each: a contested case procedure and a requirement that cases be heard within 120 days, respectively. The proposed revisions to the antidegradation statement maintain the third party appeal process important to environmental groups, but eliminate the 120 day provision important to business interests.

Response: Both the contested case hearing process and the requirement for the Board to initiate within 120 days the hearing for declaratory contested cases in Exceptional Tennessee Waters have been restored to the regulation.

Comment M-34. The proposed changes to the regulation regarding Exceptional Tennessee Waters violates the spirit of the consensus changes developed during the 2003 triennial review by a coalition of agencies, the regulated community, and environmental groups. Especially important were how the provision would deal with social and economic necessity determinations and how contested cases would be handled.

Response: We have withdrawn the majority of these proposed revisions. The declaratory order contested case procedure has been restored to the regulation. We have deleted the extra meeting requirement regarding an application that would involve degrading ETWs. Our experience with those meetings was that they added time to the permitting process without a benefit. They did not provide us with useful information and they were frustrating for members of the public who did not understand the purpose of the additional meetings and wanted to discuss other issues besides antidegradation.

Comment M-35. The department has proposed deleting the requirement for the posting of signs at sites where authority to degrade Exceptional Tennessee Waters has been requested. This requirement should be restored. Additionally, the regulation should include required sign specifications (content, size, and location). To do otherwise would violate the agreed order in the Plateau Sand case.

Response: The requirement for signs already appears in the ARAP and NPDES regulations and removing it from the antidegradation statement will not change that. These specific requirements are more appropriately placed in the permitting regulation.

The existing requirement for sign postings has been criticized by both the regulated community and citizens as being an ineffective way of providing public notice. Many of these permit applications are for alterations in remote areas where signs are unlikely to be seen by anyone. We are committed to public notice and participation, but there may be better ways to do it.

Comment M-36: In the federal provision on antidegradation, the provision about protecting existing uses is separate from the one about finding that degradation is necessary for important economic and social development in the area. Tennessee's process for review of that decision should be limited to the social or economic justification. Any issues regarding the protection of existing uses may be raised in a permit appeal later, but should not be subject to being litigated in both.

Response: We agree and have revised the language regarding the declaratory order review accordingly.

Comment M-37. The revisions to public notice requirements seem to go more in the direction of emailing and internet postings rather than the traditional written letters or legal newspaper notices.

Response: We agree and consider these modifications to simply reflect the way people communicate now.

Comment M-38. The board should reconvene the coalition of groups involved in the 2003 agreement to discuss the new proposed antidegradation statement revisions.

Response: If the board asks us to reconvene the 2003 parties, we would be pleased to comply. However, the aspects of the proposed regulation that appeared to be most troublesome to both groups have been withdrawn.

Comment M-39. In the so called Third Party Appeal statute (TCA 69-3-105i); the General Assembly in effect codified the existing antidegradation provisions. Thus, they cannot be amended.

Response: We do not agree that the General Assembly, in effect, set the 2006 version of the antidegradation statement in concrete, never to be revised. Even if they did, it would ensure EPA disapproval, as they would consider such a policy inconsistent with federal law which requires an opportunity for reconsideration no less often than every three years.

We believe the Water Quality Control Board is free to modify the regulation as led by science and their good judgment. The specific reference in §69-3-105 is to the declaratory order provision and that is now maintained in the rule.

Comment M-40. The proposed changes to the public participation provisions fail to incorporate the results of an agreed order approved by the board in the Plateau Sand permit appeal case.

Response: The Plateau Sand agreement required the department to provide guidance for the sizing and lettering of signs. This has been done in accordance with the agreement. The agreement does not require the public participation provisions of the antidegradation statement to have any specific elements.

Comment M-41. The regulation should require the department to post notices on its website for requests to degrade Exceptional Tennessee Waters. (The commenter notes that this is typically already being done.)

Response: Detailed public notice procedures should be in the permitting regulations or in policy rather than in water quality standards.

Comment M-42. Any third-party appeal of a permit allowing degradation in an Exceptional Tennessee Water should be heard within 120 days.

Response: This would go beyond what was agreed in 2003 and, in certain cases, possibly would infringe on the authority of the administrative judges to assure that due process is provided in contested cases.

Comment M-43. Any third-party appeal of a permit allowing degradation in an Exceptional Tennessee Water should not result in a stay of the permit.

Response: We have deleted the stay provision and restored the provision regarding third party declaratory order contested case hearings.

Comment M-44. The public should exercise restraint in filing third-party appeals.

Response: The department has no mechanism for enforcing a provision requiring restraint. Members of the public properly filing a valid third party appeal are entitled to have the matter heard.

Comment M-45. The board should be able to review a permit at any step of the process, not just when it is final.

Response: We do not agree. The statute gives the commissioner the authority to issue permits. The board's role begins when an appeal of a final determination is filed. Otherwise, board time may be wasted on issues that may resolve themselves differently anyway. Furthermore, if the board was involved in making the permit decision, it could not review it on appeal.

Comment M-46. The department should nominate Rock Creek in Hamilton County as an Outstanding National Resource Water (ONRW). The required economic/social impact study could be patterned after those previously completed for the Tellico River and Citico Creek.

Response: Under the antidegradation statement, the designation of Outstanding National Resource Water is reserved for those streams that have been documented as important regional or national water resources due to their ecological, scenic, or recreational qualities. The department is familiar with Rock Creek and while we have identified it as an Exceptional Tennessee Water due to its prior designation as Lands Unsuitable for Mining, the presence of the state endangered laurel dace, and proximity to the Cumberland Trail State Park, we do not consider its water resource values to rise to the level envisioned for the ONRW designation.

The commenter is still free to present this proposal directly to the Water Quality Control Board when they traditionally hear public remarks at the rulemaking discussion to be scheduled later.

Comment M-47. In Rule 1200-04-03-.06(5)(b), could the permitting requirements in Outstanding National Resource Waters be more specific based on the type of activity is being proposed?

Response: We agree that this would help clarify these requirements. We have added these additional specifics as subparagraphs.

Comment M-48. In Rule 1200-04-03-.06(5)(b), water withdrawals are not mentioned.

Response: This is an oversight that we will correct.

N. SPECIFIC COMMENTS: 1200-04-04, Use Classifications for Surface Waters

Comment N-1. The department should create a use classification called limited use waters that should be applied to headwater streams.

Response: Our interpretation is that the commenter envisions that this action would create a new type of waters, with less stringent criteria, that would fall between wet weather conveyances and streams. The commenter did not suggest any criteria for this new classification. A state cannot have one without the other.

We believe it's appropriate to leave stream-use classifications as they are currently structured and note that the abandonment of this concept was a key part of the changes made between the introduction of the bill and the passage of Public Chapter 464 concerning wet weather conveyances in 2009.

Additionally, we believe that EPA would disapprove such a blanket reclassification of streams to remove existing uses without individual Use Attainability Analyses on each. Many of these streams are likely "waters of the nation."

Comment N-2. Some headwater streams cannot meet criteria due to natural conditions. A use classification called limited use waters would acknowledge this important distinction.

Response: Natural conditions are not considered pollution so there is no conflict with existing criterion on that basis.

Comment N-3: The first page of Chapter 1200-04-04 provides "Abbreviations for Designated Uses." Are trout streams and naturally reproducing trout streams designated uses?

Response: The only designated uses are Domestic Water Supply, Industrial Water Supply, Fish and Aquatic Life, Recreation, Livestock Watering and Wildlife, Irrigation, and Navigation. The status of waters identified as

trout streams is included in this table as a convenience, not because they are classified uses. We will change the heading to "Abbreviations for Designated Uses and Trout Waters."

Comment N-4: The "Abbreviations for Designated Uses" in Chapter 1200-04-04 uses DWS as the abbreviation for Domestic Water Supply. However, the table uses DOM for this use.

Response: We will use DOM in both places.

Comment N-5. The trout stream status of the Elk River below Tims Ford dam should be modified due to the new dam operating agreement between TVA and U.S. Fish and Wildlife. The new agreement is designed to protect downstream endangered species. Only the section between mile 119 and mile 133.3 will be cold enough to maintain trout under the new agreement.

Response: We have made this revision. Since trout streams are not a use classification, this change can be made without a Use Attainability Analysis (UAA).

Comment N-6. The Tennessee Wildlife Resources Agency recommends that the entry for Goose Creek (pg 27) be revised to be a naturally reproducing trout stream from river mile 1.5 to origin. Additionally, one stream, Upper Hinkle Branch, a tributary of Stony Creek in the Watauga River watershed should not be a trout stream.

Response: We have made these revisions.

Comment N-7. The Tennessee Wildlife Resources Agency recommends adding the following trout streams and naturally reproducing trout streams to Chapter 1200-04-04:

Proposed stream to add	Tributary to: (listed trout stream)	Page of CH 1200-04-04
E. Fork Wolf Creek	Wolf Creek	12
Rymer Camp Branch	Big Lost Creek	12
Big Bald Creek	Coffee Ridge Creek	22
Slip Creek	Coffee Ridge Creek	22
Little Bald Creek	Spivey Creek	22
Sarvis Cove Creek	Horse Creek	22
W. Fork Dry Creek	Dry Creek	22
Sill Branch, E. and W. Forks	Clarks Creek	22
Round Knob Branch	Jennings Creek	22
Big Branch	South Indian Creek	22
Blockstand Creek	Rocky Fork	22
Broad Branch	Rocky Fork	22
Fort Davie Creek	Rocky Fork	22
Rt. Prong Rock Creek	Rock Creek	22
Greenbrier Creek	Cosby Creek	23
Grassy Fork	Gulf Fork Big Creek	23
Sawmill Branch	Paint Creek	23
Little Paint Creek	Paint Creek	23
Tobes Creek	Pigeon River	23
Sinking Creek	Watauga River	25
Buffalo Creek	Watauga River	25
Dry Creek	Buffalo Creek	25
Furnace Branch	Stony Creek	26
Hodge Branch	Stony Creek	26
Lindy Camp Branch	Stony Creek	26
Pole Branch	N. Fork Stony Cr	26
Little Doe River	Doe River	26
McKinney Branch	Simerly Creek	26
Unnamed trib. at Tiger Cr	Tiger Creek	26

Bill Creek	Tiger Creek	26
Fall Branch	Tiger Creek	26
Unnamed tribs. of Tiger Cr	Tiger Creek	26
Unnamed tribs. of Roaring Creek	Roaring Creek	26
Lacy Trap Branch	Laurel Fork	26
Leonard Branch	Laurel Fork	26

Proposed stream to add	Tributary to: (listed trout stream)	Page of CH 1200-04-04
Moreland Branch	Laurel Fork	26
Bunton Branch	Laurel Fork	26
Cook Branch	Laurel Fork	26
Camp Ten Branch	Laurel Fork	26
Hays Branch	Laurel Fork	26
All unnamed tribs. upstream of Moreland Br.	Laurel Fork	26
Heaton Creek	Doe River	26
Toms Branch	Doe River	26
Five Poplar Branch	Doe River	26
Middle Branch	Doe River	26
R. Prong Middle Br.	Middle Branch	26
Panther Branch	Doe River	26
Little Cove Creek	Cove Creek	26
Duck Branch	Doe River	26
Doll Branch	Shell Creek	26
Morgan Branch	Buck Creek	26
Bear Branch	Buck Creek	26
State Line Branch	Buck Creek	26
Morgan Branch	Little Laurel Branch	26
Trivett Branch	Elk River	26
Slabtown Branch	Doe Creek	26
Bulldog Creek	Roan Creek	27
Drake Branch	Roan Creek	27
Steve Phillippi Branch	Corn Creek	27
Cress Branch	Corn Creek	27
Roaring Creek	Forge Creek	27
Fall Branch	Roaring Creek	27
Unnamed trib. at Forge Cr.	Forge Creek	27
Valley Creek	Laurel Creek	27
Tank Hollow	Beaverdam Creek	28
Flat Springs Branch	Beaverdam Creek	28
Marshall Branch	Beaverdam Creek	28
Heaberlin Branch	Beaverdam Creek	28
Green Mountain Branch	Beaverdam Creek	28
Buck Ridge Branch	Beaverdam Creek	28
Owens Branch	Laurel Creek	28
Kate Branch	Gentry Creek	28
Gilbert Branch	Gentry Creek	28
Atchison Branch	Gentry Creek	28
Hoot Owl Hollow	Gentry Creek	28
Cut Laurel Branch	Gentry Creek	28

Response: These streams are tributaries to streams that are already listed in Chapter 1200-04-04 as either trout streams or naturally reproducing trout streams. Rule 1200-04-03-.03(3)(a)2 states: "Tributaries to trout streams or naturally reproducing trout streams should be considered to be trout streams or naturally reproducing trout streams, unless demonstrated otherwise." In order to keep this regulation at a manageable length, we would prefer to not name all these streams by name, since they will automatically receive protection as a tributary.

Comment N-8. The Tennessee Wildlife Resources Agency recommends adding the following trout streams and naturally reproducing trout streams to Chapter 1200-04-04:

Response: These streams are tributaries to streams that are already listed in Chapter 1200-04-04 as either trout streams or naturally reproducing trout streams. Rule 1200-04-03-.03(3)(a)2 states: "Tributaries to trout streams or naturally reproducing trout streams should be considered to be trout streams or naturally reproducing trout streams, unless demonstrated otherwise." In order to keep this regulation at a manageable length, we would prefer to not name all these streams by name, since they will automatically receive protection as a tributary.

Comment N-9. The Tennessee Wildlife Resources Agency recommends adding the following trout streams and naturally reproducing trout streams to Chapter 1200-04-04:

Proposed stream to add	Tributary to:	Placement in CH 1200-04-04	Page of CH 1200-04-04
Dry Creek	Nolichucky River	Before Broadshoal Ck	22
Ramsey Creek	Dry Creek	Under Dry Creek	22
Briar Creek	Dry Creek	After Ramsey Creek	22
Straight Creek	Dry Creek	After Briar Creek	22
Bumpus Cove Creek	Nolichucky River	After Dry Creek	22
Painter Creek	Nolichucky River	After Cassi Creek	22

Response: These streams are not tributaries to streams that are already listed in Chapter 1200-04-04 as either trout streams or naturally reproducing trout streams. We have made these additions.

Comment N-10. The Tennessee Wildlife Resources Agency recommends reordering the following trout streams and naturally reproducing trout streams in 1200-4-4 so that they are in the proper hydrologic sequence:

Proposed stream to change	Tributary to:	Placement in CH 1200-04-04	Page of CH 1200-04-04
Laurel Fork (and tribs.)	Doe River	Under Doe River (first)	26
Hampton Creek	Doe River	Before Sugar Hollow Creek	26
L. Prong Hampton Ck.	Hampton Creek	Under Hampton Creek	26
Buck Creek	Doe River	After Georges Creek	26
Shell Creek	Buck Creek	Under Buck Creek	26

Response: We have made these revisions.

2012 Triennial Review of Water Quality Standards

Summary of Supplemental Public Comments and Responses

(Note: In November, 2011, at the request of the Water Quality Control Board, the previously revised water quality standards were again put on public notice and an additional review period was undertaken in the winter of 2011 and early spring of 2012. The following are responses to new public comments made during this review period. Some reviewers repeated comments previously made and should refer to the fall 2011 response document.

Additionally, our response to the comments made in regard to 1200-04-03-.05(9), the section specific to wet weather conveyance determinations, is that because that portion of the regulation was previously approved by the board in 2010 and no changes to it were proposed, any changes would be outside the scope of this rulemaking.

In some instances, public comments have been summarized in order to group similar observations by multiple reviewers.)

A. TABLE OF CONTENTS

Comment A-1. *The Table of Contents does not match the section headings.*

Response: We will make the following revisions to the table of contents. We will add the word "Control" in 1200-04-03-.01. We will delete the word "Tennessee" in 1200-04-03-.06. In 1200-04-03-.08, we will add "Ground Water." We will delete the word "Petition" in 1200-04-03-.09 and replace it with the word "Application". We will change 1200-04-03-.10 to "Point of Classification Change." We will change 1200-04-03-.11 to "Appeals." We will delete 1200-04-03-.12 in its entirety.

Comment A-2. *The Tennessee Water Quality Control Board is now the Tennessee Board of Water Quality, Oil and Gas.*

Response: We will make this revision throughout the document.

B. 1200-04-03-.02, General Considerations

Comment B-1. *Language in 1200-04-03-.02 states that "all Waters of the State are classified for more than one use" and provides a listing of those uses in Paragraph (2). Since wet weather conveyances have uses and criteria that apply to them, Paragraph (2) should be modified to reflect this.*

Response: The language regarding uses in the regulation in Rule 1200-04-03-.02 creates some confusion between the idea of classified uses and uses in general. Wet weather conveyances have few uses because by definition they are unsuitable for most of them. Wet weather conveyances do not support significant amounts of aquatic life and are unsuitable as drinking or industrial water supply, or irrigation. In fact, Chapter 1200-04-04, which establishes the designated uses of surface waters, doesn't mention wet weather conveyances, except to make it clear that they are not included in the "catch-all" category. We believe that it would be difficult to construct a legal argument that the water in a wet weather conveyance is formally classified in any way.

However, wet weather conveyances do have criteria that apply to them, but only those consistent with the goal that they be "protective of humans and wildlife that come in contact..."

Since we believe that wet weather conveyances are waterways to which some criteria apply, but no designated uses, we do not agree with the suggestion that some mention of wet weather conveyances should be added to Paragraph (2). Paragraph (6) already discusses wet weather conveyances in more detail.

Comment B-2. *The Biotic Ligand Model (BLM) should be cited as an alternative to the Water Effects Ratio (WER) for copper in Rule 1200-04-03-.02(9)(a).*

Response: Tennessee's regulation contains two sub-paragraphs [Rule 1200-04-03-.02(9)(a) and (b)] dealing with site specific criteria studies. Subparagraph (9)(a) provides information regarding water effect ratio (WER) studies. Successfully completed WER studies can result in the modification of the statewide numeric criteria based on the characteristics of ambient water and as a result, do not have to be promulgated as a criteria revision.

Subparagraph (9)(b) states that other types of site-specific studies may be used to alter criteria, but the results of these studies must be promulgated in order to be effective. It additionally states that other appropriate methods beyond the ones cited may be employed to develop site-specific criteria.

Colorado looked into the use of BLM studies and it is our understanding that they declined to allow this approach based on a concern that the BLM studies yield highly variable results that instantaneous ambient conditions can generate.

Until the technical issues with BLM are resolved, it is premature to consider it as an alternative to the WER. See also the Response to Comment D-7 regarding the use of the BLM in the copper criterion for fish and aquatic life.

C. 1200-04-03-.03(1), Criteria for Water Uses, Domestic Water Supply

***Comment C-1.** *Since the other numeric criteria tables indicate which substances are bioaccumulative, the domestic water supply protection criteria table should also.*

Response: These criteria have a different basis than the ones in the other tables referenced. These criteria are not designed to protect human health, *per se*, but rather, to prevent substances from being at concentrations that would place a burden for additional treatment on a domestic water supplier. This is because we do not anticipate or encourage consumption of water directly from streams without treatment.

***Comment C-2.** *Criteria table (j) cites 2,4 Dichlorophenoxyacetic. This should be 2,4 Dichlorophenoxyacetic Acid.*

Response: We agree and will make this revision.

D. 1200-04-03-.03(3), Criteria for Water Uses, Fish and Aquatic Life

Comment D-1. *The fish and aquatic life numeric criteria should include frequency and duration info specific to the application of CMC and CCC levels.*

Response: In this rulemaking we are proposing to add the word frequency to rule 1200-04-03-.05(5). This provision instructs us to consider the frequency, magnitude and duration of deviations from the criteria in determining whether or not they have been violated.

Comment D-2. *TDEC is to be commended for adopting new numeric criteria and should continue to work on numeric goals for parameters like suspended solids.*

Response: As stated consistently in the past, we are dependent on EPA for assistance in the development of most numeric criteria and there is no national recommendation for suspended solids. EPA proposed a numeric performance standard for suspended solids in stormwater, which they later withdrew. Even in the absence of a numeric criterion, our ecoregion reference data can be used to establish regional biological integrity and habitat goals which can be used to identify silt impaired streams.

Comment D-3. *Tennessee should adopt EPA's aluminum national criteria.*

Response: Aluminum is not a priority pollutant. Tennessee currently regulates it by way of the narrative "Toxic Substances" criterion. EPA has acknowledged problems with the current recommended numeric national criteria for aluminum. For example, the chronic value is appropriate for situations where both the stream pH and hardness are below 6.6 and 10, respectively. However, relatively few streams have these specific conditions. As pH and hardness increase, aluminum is less toxic. Additionally, EPA also correctly states that many high quality streams have aluminum levels that exceed 87 ug/L.

For these reasons, we will not recommend adopting the national criterion at this time. If EPA refines their criterion to address the foregoing concerns, we will likely adopt it in a future triennial review.

***Comment D-4.** *The columns in the numeric criteria tables should be called "Average" and "Maximum" instead of CCC and CMC as it currently does. This would be simpler and the public would understand what it means.*

Response: We agree that this approach would be simpler, but we're not sure it would be as accurate. The CCC column, also commonly called the chronic criteria, is based on the concentration of a pollutant causing toxicity in 4 day exposure tests. So technically, these criteria are not based on average levels over time. It is the nature of water quality standards that at times in order to be accurate, criteria must be expressed in ways that are less simple.

***Comment D-5.** *Certain FAL metals criteria are based on formulas which consider hardness and suspended solids levels. This is too complicated for most people. The criteria should be presented as numbers rather than by formula.*

Response: See the previous response. It is important to remember that the formula is the criterion for these substances, rather than numbers derived from the formula. Division staff will assist anyone having trouble with the formula.

***Comment D-6.** *Tennessee's current copper criterion only takes hardness into account.*

Response: This is incorrect. We use both hardness and total suspended solids to implement the criterion for assessment and permitting purposes. Rule 1200-04-03-.02(8) describes the translation process. We have revised the footnote in the fish and aquatic life table to include paragraph (8) as well as (9) in the citation of Rule 1200-04-03-.02.

***Comment D-7.** *Tennessee should adopt the Biotic Ligand Model (BLM) to replace the current copper criterion. This is the approach recommended by EPA.*

Response: The commenter is correct that EPA has recommended adoption of the BLM in place of the historic hardness-based criterion. The BLM greatly expands the number of parameters potentially altering the toxicity of copper that factor into the determination of the criterion.

According to EPA's 2007 copper criteria document:

> The BLM requires ten input parameters to calculate a freshwater copper criterion (a saltwater BLM is not yet available): temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. The BLM is used to derive the criteria rather than as a post-derivation adjustment as was the case with the hardness-based criteria. This allows the BLM-based criteria to be customized to the particular water under consideration.

The department has the following concerns regarding the potential adoption of the BLM:

- Resources. In order to run the model, additional ambient data are needed. Many of these parameters, such as calcium and magnesium, are not commonly monitored. Additionally, samples would have to be filtered, probably in the field, in order to determine dissolved organic carbon levels. Filtering of samples, particularly where particulate material or algae levels are high, is a very time-consuming activity.

- Impact on water quality assessment. Obviously, criteria are not just used to set permit limits. They are also used to assess ambient water quality in Tennessee streams. Currently, we only need hardness and suspended solids levels to determine whether or not copper concentrations violate criteria. If we adopted the BLM, we would need a suite of additional parameters to apply the criterion to ambient data. This would have both a resource (lab costs) and efficiency (assessment staff time) impacts at a time when budgets and staff resources are already stressed.

- Impact on regulated community. Adoption of the BLM would likely necessitate requiring copper dischargers to collect additional effluent and ambient data. We have not gauged their reaction to this

change.

- Very few other states have adopted the BLM in any form. According to information provided by the International Copper Association, only one state (South Carolina) has adopted the BLM as a criterion, although they also retained the hardness-based criterion. Eight additional states – Maryland, Missouri, New Hampshire, New Jersey, New Mexico, North Carolina, Pennsylvania, and Texas – cite the BLM, not as a copper criterion, but as an alternative site-specific criterion method. All other states, like Tennessee, retain the hardness-based criterion.

- Timing. This comment was not formally made during the first round of comments in late 2009 – early 2010. (The initial contact regarding this issue was made in late 2010.) If we adopted the BLM, we would be doing so without allowing the public an opportunity to offer comments.

For all these reasons, we prefer to wait until the next triennial review to consider this change.

***Comment D-8.** *The Biotic Ligand Model (BLM) could be used to develop TMDLs for copper.*

Response: We will keep this in mind. However, with the exception of impacted streams within and downstream of the Copper Basin, we have no streams identified as impacted by copper that have not already had a TMDL developed. The TMDL approach is not considered appropriate streams in for the Copper Basin because of the legacy nature of the contaminants. Additionally, alternate control strategies have already been developed for this area.

***Comment D-9.** *The existing biological integrity criterion says that comparison to reference streams in the same ecoregion is appropriate. This passage should be modified to indicate that comparisons to upstream or pre-construction conditions are also appropriate.*

Response: Comparison to reference streams is our preferred approach. Pre-construction or upstream conditions are unlikely to reflect reference conditions and may even be impaired. However, the rules specifically state that other scientifically-defensible methods may be used in evaluating streams biologically.

***Comment D-10.** *Biological integrity in post-construction streams might be improved over previous conditions, but still not comparable to reference conditions. Similarly, upstream/downstream comparison should be allowed. Physical alterations may improve streams.*

Response: Rule 1200-04-03-.03(3)(m) and (n) establishes the clean water goals for biological integrity and habitat in streams. It is important that this goal be based on unimpaired conditions. Pre-construction or upstream conditions may be impaired. Physical alterations that truly improve streams would not run afoul of any of Tennessee's clean water regulations, since such projects would avoid causing degradation.

E. 1200-04-03-.03(4), Criteria for Water Uses, Recreation

Comment E-1. *The numeric recreational criteria should include frequency and duration info specific to the application of Water and Organisms and Organisms Only levels.*

Response: See response D-1.

F. 1200-04-03-.04, Definitions

Comment F-1. *This section should define habitat alteration.*

Response: The criterion for habitat provides examples of activities that alter habitat, which we consider more useful than a definition.

Comment F-2. *This section should define "best available instrumentation or laboratory analyses."*

Response: This phrase refers to the most precise instrument or laboratory method for the analysis of each parameter. Because this will differ from test to test and instrument to instrument, there's no single definition.

Comment F-3. *This section should define "normal water conditions."*

Response: The phrase "normal water conditions" is only used once in these rules [1200-04-03-.05(5)] and is used just to give a background statement, not the language of a criterion or a definition critical to a criterion. As such, we see no practical value in a definition.

Comment F-4. *This section should define "measurable degradation."*

Response: Our definition was proposed in this rulemaking in 1200-04-03-.04(11).

Comment F-5. *This section should define "discharge."*

Response: Discharge is defined in the permitting regulation (1200-04-05) which is the appropriate place for it.

Comment F-6. *"HUC" should be defined.*

Response: We searched the document to find a place this term was used in the regulation, but didn't find one. HUC is hydrologic unit code.

Comment F-7. *In Rule 1200-04-03-.04(3) you put the concept of "non-temporary" alterations within the definition of degradation. This is awkward wording.*

Response: We will delete "non-temporary" and add the phrase "except those alterations of a short duration."

Comment F-8. *An impact of short duration might significantly impact a stream. How would this concept be applied?*

Response: Even if short in duration, degradation that causes criteria to be violated and uses impacted cannot be authorized.

A real-life example of the application of this concept in an ONRW occurred a few years ago. Significant flooding along the eastern side in the Great Smoky Mountains National Park seriously damaged the Little River Road, which had to be closed. Emergency repairs were needed, which required a permit. Since the Little River is an ONRW, a strict, no-degradation policy might have made restoring the road impossible, since some habitat degradation was necessary to stabilize the site. However, since the alterations were of short duration and would not harm uses, the work could be authorized.

This discretion is needed and has been accepted in concept by EPA. Generally, we are speaking of an alteration lasting hours or days, not months or years. Also, chronic or acute toxicity will not be authorized.

Comment F-9. *How is assimilative capacity calculated in Rule 1200-04-03-.04(4)(a)1? What data are used and whose responsibility is it to perform the calculations? Detailed procedures would be helpful.*

Response: The assimilative capacity of a stream for a given pollutant can be expressed as the amount of that pollutant that could be added at low flow without causing the criterion for that substance to be violated. So the low flow calculations for the stream, the in-stream (background) concentration of the substance, plus the

proposed discharge volume are critical factors. In the proposed rule language, the applicant or their consultant must determine the amount of degradation their activity would cause. These calculations are later confirmed by the department. Detailed permitting procedures are not appropriate for inclusion in water quality standards. Additionally, EPA guidance is available.

Comment F-10. *Rule 1200-04-03-.04(4)(a)3 uses the term "segment." This should be defined.*

Response: There is no single definition of this term. It is dependent on the circumstances in which it is applied. For example, the relevant segment depends on the nature of the activity and the extent of its impact on the stream. The rationale section of individual permits will explain the stream segment(s) being considered.

Comment F-11. *Rule 1200-04-03-.04(4)(a)3 refers to "scientific basis," "insignificant," and "insignificant effect." These terms should be explained and defined.*

Response: In this paragraph, these terms have their generally accepted meanings rather than specific or technical ones. The rationale section of individual permits will explain the basis for the conclusions regarding significance.

Comment F-12. *Rule 1200-04-03-.04(4)(b) refers to gauging the effects of impacts "individually and cumulatively." These terms should be explained and defined.*

Response: In approving a *de minimis* level of degradation, the department must ensure that the effect is not only *de minimis* individually, but also that multiple authorizations of small amounts of degradation has not caused the cumulative cap to be exceeded.

Comment F-13. *The regulation has not defined the "in-system" mitigation mentioned in Rule 1200-04-03-.04(4)(b). TDEC has previously stated that it is the 12 digit HUC, but it should be defined as being within the 6 or 8 digit HUC.*

Response: As the commenter noted, we've stated previously that under normal conditions, mitigation that takes place within the same 12 digit HUC area will be considered "in-system." One exception is in Outstanding National Resource Waters (ONRWs) where mitigation would be required to take place in the ONRW. We will revise the definition to reflect the ONRW provision.

It is important to remember that in streams with available parameters or ETWs, degradation can still be authorized if mitigation is not in-system. However, out of system mitigation will not be considered *de minimis* in effect, and therefore, economic and social necessity will have to be established.

Comment F-14. *Any type of compensatory mitigation should be considered to make degradation de minimis.*

Response: In order to make the resource loss very small (*de minimis*) in a specific stream, the mitigation must happen nearby (in-system), not many miles away. Out of system mitigation is entirely appropriate in many settings, but it is not *de minimis* in effect.

Comment F-15. *The department's definition of in-system mitigation is different than other agencies like the Corps of Engineers and the Tennessee Stream Mitigation Program.*

Response: We do not think there is any inconsistency here. "In-system" is employed for the sole purpose of establishing what level of mitigated degradation can be considered *de minimis* under the antidegradation policy. The Tennessee Stream Mitigation Program manages money placed in mitigation banks to replace lost resource values. These lost resource values are more than *de minimis*.

Comment F-16. *Why is there a different interpretation of "in-system" in Outstanding National Resource Waters (ONRWs)?*

Response: Because ONRWs are intended to receive the highest level of protection under the antidegradation policy, in order to be considered *de minimis* any mitigation must occur in the ORNW. Of course, avoidance and minimization of degradation in an ONRW would be the preferred approach rather than mitigation.

Comment F-17. *Rule 1200-04-03-.04(11) refers to "sufficient magnitude." This term should be explained and defined.*

Response: In this paragraph, this term is used in its generally accepted meaning rather than a specific or technical one. The rationale section of individual permits will explain the basis for the conclusions.

Comment F-18. *Rule 1200-04-03-.04(12) about mixing zones refers to effluent becoming "dispersed and mixed." These terms should be explained and defined.*

Response: In this paragraph, these terms are used in their generally accepted meanings rather than specific or technical ones. The rationale section of individual permits will explain the basis for the conclusions.

Comment F-19. *The department is not consistent with the use of the term "measurable" because it has not been applied to habitat alterations.*

Response: In previous promulgated versions of the antidegradation policy, the concept of using a measurable amount of habitat alteration to determine whether or not degradation was *de minimis* was in the rule. In practice, this was a very difficult to implement. Habitat in a single spot can be measured, however, "total" habitat in a waterbody segment is difficult to quantify. For that reason, we went away from the idea of measuring habitat and moved toward the better idea that habitat alterations can only be *de minimis* if appropriate avoidance, minimization, and in-system mitigation is employed.

Comment F-20. *Please specify how you will determine whether degradation is measurable or not. Will Required Reporting Limits (RRLs) be used for this purpose?*

Response: We intend for this determination to be based on the method detection level, which may be different that the RRL. Additionally, for field instruments (DO, temperature, etc.) we will use the published accuracy information for that equipment.

Comment F-21. *In Rule 1200-04-03-.04(16), the term "parameter" has been defined so that some criteria will not be considered parameters for the purpose of applying the unavailable parameters provisions. Obvious examples are habitat and biological integrity.*

Response: The commenter is correct. Our long-standing position is that some criteria are for condition indices which are useful for assessing water quality, but are not parameters in the antidegradation sense. However, each of these indices is composed of parameters. For example, sediment deposition is one of the components of the condition index known as "habitat." Sediment deposition can be directly measured and is therefore a parameter.

Comment F-22. *In the definitions of "parameter" and "response variable," the word measurable is used. Might this cause confusion since that term is also defined?*

Response: We agree with this comment. We will revise these definitions so that they say "A parameter that can be measured..." and "not directly measured" instead of "A measurable parameter" and "not directly measurable."

Comment F-23. *Rule 1200-04-03-.04(16) about parameters refers to "criteria." These terms should be explained and defined.*

Response: The term "criteria" is introduced in Rule 1200-04-03-.02, General Considerations. The revised introductory wording in the paragraph for each of the uses of the waters in Rule 1200-04-03-.03, also now makes clear that each of the subparagraphs is a criterion.

Comment F-24. *Rule 1200-04-03-.04(16) about parameters refers to properties of "water." This should be "water and sediment."*

Response: The term "water" sets the context and is not intended to suggest that chemicals in sediment, fish flesh, or any other medium associated with waters aren't properly considered parameters also.

Comment F-25. *In Rule 1200-04-03-.04(21), the proposed definition for "response variable" says that it is a measurable parameter. If it's a parameter, why not call it "response parameter?"*

Response: Variable has a broader meaning than how we defined parameter. It simply means any characteristic in an experiment or analysis that can change. We defined parameter more narrowly, with the need to have a workable approach to applying the antidegradation policy in mind.

We don't think that response variables are always parameters. Within the context of the antidegradation policy - specifically, the provisions for protection of streams with unavailable parameters - it is important to make a distinction between pollutants and the effects they cause.

The classic example of the need to differentiate between pollutants and response variables is dissolved oxygen. Dissolved oxygen is a parameter, but it's not a pollutant. There's a criterion for DO, but it is the lack of oxygen that causes problems, not the presence of it. So if a stream was impaired due to low DO, we would not want to say that the stream was unavailable for oxygen.

What the regulation needs to say is that the stream is unavailable for the pollutant(s) causing the low oxygen levels, such as BOD or nutrients.

We agree with the commenter that the use of the word "parameter" in the definition for "response variable" confuses the issue. Since, as we've established, not all response variables are parameters, we will change the definition as follows. Additionally, we will reword to avoid confusion over the meaning of "measurable":

> 21. Response Variable – a **characteristic of water quality** that **can be measured and** changes as a result of an alteration of habitat, water withdrawal, or discharge of pollutants, as distinguished from **the agents** that cause changes in aquatic systems. (Emphasis added to illustrate wording changes.)

Comment F-26. *The department has proposed to differentiate between parameters that change as a result of the actions of a pollutant, and those parameters that are pollutants. How will this response variable provision be implemented in impaired waters where the causal variable is not known?*

Response: The scenario described is one that happens rarely, and when it does, the unknown causal variable is usually a toxicant. In these cases, discharge permits would be written to prohibit whole effluent toxicity at low flow conditions. The discharger might also be asked to isolate the most likely pollutant and once identified, it would be specifically limited in their permit.

Comment F-27. *A definition for "Required Reporting Level" should be provided.*

Response: The meaning and purpose of RRLs is already provided in Rule 1200-04-03-.05(8).

G. SPECIFIC COMMENTS: 1200-4-3-.05, Interpretation of Criteria

COMMENT G-1. *Changing the name of the table in Rule 1200-04-03-.05(8) from Method Detection Levels to Required Reporting Levels may change how the table is interpreted.*

RESPONSE: We believe the changed name is more consistent with how the table should be used.

COMMENT G-2. *EPA says ML (method reporting levels) are 3.18 times the method detection levels.*

RESPONSE: Our Required Reporting Levels are not the same as EPA's method reporting levels and there is no mathematical relationship between our RRLs and method detection levels.

COMMENT G-3. *Some of the RRLs (required reporting levels) in permits are unreasonably low. (List provided by the commenter.)*

RESPONSE: RRLs are an important tool in protecting water quality by assuring that permittees utilize appropriate analytical techniques.

It is important to note that according to Rule 1200-04-03-.05(8), not all substances limited in a permit are subject to RRLs. The regulation currently states: "In instances where permit limits established through implementation of these criteria *are below analytical capabilities*, compliance will be demonstrated..."(emphasis added). So the requirement for RRLs is triggered by the permit limit, not the criterion, since almost all dischargers get some dilution credit for the receiving stream. It would not make sense to require a very low detection level when the permit limit is much higher.

One of the RRLs brought to our attention by the commenter was anthracene. The commenter is correct that the RRL is challenging at 0.73 ug/L. However, the lowest numeric criterion for anthracene is 8300 ug/L, so a permittee would <u>never</u> be required to meet the RRL, according to the regulation.

A metal mentioned by the commenter was zinc, with an RRL of 1.0 ug/L. The fish and aquatic life criterion for zinc is hardness dependent, but at a hardness of 100 mg/L, the criterion would be 120 ug/L, so again, even in a zero flow stream, no permittee would be required to reach the RRL.

Acrolein and acrylonitrile were identified as substances with challenging RRLs (1 ug/L). As pointed out by a commenter, at low detection levels, these compounds are unstable and results can be uncertain. We looked at our permitting database and found no instance in which permit limits have been given in Tennessee for these compounds.

Additionally, the commenter should remember that acrolein and acrylonitrile are recreational criteria, the flow basis for permit limits would be a 30Q5. Thus, it is unlikely that a permittee would have permit limits at or below the RRL.

COMMENT G-4. *The commenter is concerned that RRLs will go down.*

RESPONSE: We've proposed no changes to the actual Required Reporting Levels.

COMMENT G-5. *The sentence "The methods, equipment, and general nature of the interference shall be provided" could be misinterpreted to mean that Method Detection Levels are required.*

RESPONSE: If method detection techniques must be used to meet RRLs, then it is the permittee's obligation to do so. But again, angst over RRLs such as zinc - which a permittee would never be asked to report at those levels - is unnecessary.

COMMENT G-6. *Some substances are ubiquitous, such as PCBs, mercury, and zinc. Interferences due to these substances are common. It is an unreasonable burden for permittees to be required to document this each time.*

RESPONSE: The department reviews a great deal of data collected at monitoring stations across the state. While we concede that zinc is often detected in the water column, PCBs and mercury are not. Of course, this is good, since at current method detection levels, if PCBs and mercury are detected, criteria are typically violated.

We have an important responsibility to ensure that permittees use proper techniques to give ourselves the best possible chance to determine whether or not permit limits and criteria have been met. Documenting the nature of interference when it occurs does not seem to be an unreasonable burden, since the alternative might result in less than serious efforts to achieve detection levels and in extreme cases, might provide a handy smokescreen for permit violations.

Additionally, in cases where there has been established a repetitive interference, it would seem to us that it is not difficult to report the exact same explanation multiple times.

COMMENT G-7. *The permittee should be allowed to keep the documentation of interferences on file rather that submitting it to the department.*

RESPONSE: This is information we need and the commenter's suggestion places an unreasonable burden on the department. If the rationale is submitted automatically, we won't have to go looking for it each time.

H. 1200-04-03-.06, Tennessee Antidegradation Statement

Comment H-1. *It's difficult to review the proposed WQS changes because the department didn't differentiate between language that was changed vs. language that was simply moved.*

Response: We don't disagree with the comment, but the public review period has ended. We will help any reviewer with their understanding of our proposal, but will give further consideration for implementation of this suggestion in the next triennial review.

Comment H-2. *The proposed changes in the terminology of the antidegradation policy, along with the definitions offered in support, are vague and confusing. They should be dropped in favor of going back to existing regulatory language.*

Response: The commenter has not offered any specific suggestions for rewording the definitions and terms to make them less confusing. At every step of the review process, the department has explained the rationale for the changes proposed. Going back to the old language will not resolve important implementation issues. However, we re-reviewed all of the provisions of the antidegradation rule and the definitions and made changes to make several provisions clearer or more precise.

Comment H-3. *The antidegradation policy is complicated and it is hard to understand what activities can be allowed and which cannot.*

Response: We agree the implementation of the antidegradation policy can be complex. We re-reviewed all of the provisions of the antidegradation rule and the definitions and made changes to make several provisions clearer or more precise. Division staff can always be contacted directly for additional information or clarification.

Comment H-4. *Since the antidegradation policy applies to permitting [Rule 1200-04-03-.06(1)(b)], the aspects of the policy about complete applications and the proposed revisions should be made part of the permit regulations (Rule 1200-04-05-.05).*

Response: We see the commenter's logic, but feel that the provisions of the antidegradation policy need to be kept together rather than parsed out to other regulations. The antidegradation policy and its implementation procedure are part of the water quality standards, according to the Clean Water Act. Additionally, Chapter 5 of the regulations is specific to NPDES permits. The antidegradation policy application requirements also apply to habitat and water withdrawal permits, which are not NPDES permits.

Comment H-5. *Can applicants assume that general permits do not require an antidegradation review [Rule 1200-04-03-.06(1)(b)]?*

Response: Only those general permits public noticed as representing *de minimis* for degradation can automatically be presumed to be free from antidegradation review.

Comment H-6. *The general permits for the aquatic resource alteration program will need to be revised to be consistent with the antidegradation policy?*

Response: When general permits are being renewed, they will need to be public noticed as representing a *de minimis* level of degradation, if that determination can be appropriately made.

Comment H-7. *The definition in Rule 1200-.04-.03-.04(4)(a)1 states that new domestic sources cannot be considered de minimis. Thus, new domestic sources would always be required to do alternatives analysis. However, the application process in the antidegradation rules does not seem to fully reflect this.*

Response: Rule 1200-04-03-.06(1)(b)2, 3 and 4 specifically mention the alternatives analysis requirements for new domestic discharges. However, we understand this comment and will additionally modify the following additional sections:

Rule 1200-04-03-.06(1)(b)1 - **For activities other than new domestic wastewater discharges,** a complete application will include...(emphasis added to illustrate new language)

Rule 1200-04-03-.06(1)(d)1(i) - "**unless the activity... is a new domestic discharge**"....(emphasis added to illustrate new language)

Comment H-8. *The process identified in Rule 1200-04-03-.06(1)(b) sets the applicant up for failure. The regulation does not provide enough information and guidance to ensure the applicant can provide the needed information.*

Response: We understand this concern but do not agree with the commenter that applicants will be unable to comply. The changes in the rule make it clearer what is expected without significant change to the requirements. In the past, the requirements were less clear and the department often had to request additional information after the application had already been submitted. The General Assembly has made it clear in legislation that increased speed in the permit process is a primary concern.

It will greatly speed the issuance of permit decisions, while not lessening the protection for the environment when applications are as complete as possible prior to submittal to the department. Guidance regarding the NPDES application is found in other available documents.

Comment H-9. *A flow chart of the application process identified in Rule 1200-04-03-.06(1)(b), (c), and (d) would be helpful.*

Response: We agree but think that the department's website or guidance documents would be a better place for this to appear than in the regulation.

Comment H-10. *An implementation schedule needs to be added to the process identified in Rule 1200-04-03-.06(1)(b), (c), and (d) so that applications already being processed would not unduly be held up.*

Response: When the board promulgates a new rule there is a required waiting period before it becomes effective, which would serve the purpose envisioned by the commenter. But to be clear, if an application was already submitted prior to the date the rule changes are effective, it will be reviewed under the old rule. After that, new applications would need to provide all the required information before they could be accepted as complete. (There is no penalty for submitting an incomplete application – the applicant simply has to provide the additional information.)

Comment H-11. *In Rule 1200-04-03-.06(1)(b)1, the applicant must state how much degradation will be caused by their activity. Other states have a single standard for degradation. Tennessee adds "de minimis" and "measurable." This imposes an unnecessary burden on applicants.*

Response: The commenter did not specify which other states Tennessee was being compared to, but perhaps these states do not allow degradation in any amounts. Other states do use the concepts of de minimis and measurable. Defining these smaller amounts of degradation makes them allowable under certain limited scenarios. A single definition of degradation could only result in the antidegradation policy being more restrictive and the denial of more applications. We do not consider this appropriate where the amount of degradation is extremely small.

Comment H-12. *To satisfy Rule 1200-04-03-.06(1)(b)1, the applicant must state how much degradation will be caused by its activity. The methods for determining "de minimis" and "measurable" are very different. This imposes an unnecessary burden on applicants. What if the degradation is both measurable and de minimis?*

Response: It might help to think in terms of incremental amounts of degradation. Any lowering of water quality (adding pollutants or removing habitat) without actually violating water quality standards is degradation.

De minimis is an amount of water quality lowering that is small, but can be measured. In some situations, a de minimis amount of degradation can be allowed, but not in all scenarios.

Degradation that is unmeasurable is so small that we can't, through modeling or direct chemical analysis, tell whether or not it is there. Without the ability to make this distinction, theoretically, even adding a molecule of a pollutant to the large river could be prohibited.

The analysis required by these steps is not new. Under the prior rules, the department would do it. These changes allow the applicant to state its position on these issues. The alternative to these concepts would likely be a blanket prohibition of new or expanded discharges into impaired or pristine streams, even if the actual impact from them would be minimal.

Comment H-13. *How does the department envision that applicants will communicate the level of degradation associated with their proposed activity as required in Rule 1200-04-03-.06(1)(b)1?*

Response: The applicant must project the level of degradation associated with their proposed activity and state whether the degradation will be either unmeasurable, *de minimis*, or more than *de minimis*. A rationale must be provided to explain how the applicant arrived at this conclusion.

In the specific case of habitat alterations, the applicant's determination will most likely be that the degradation would be either more than de minimis, or can be rendered de minimis by either avoidance, minimization, or in-system mitigation (within the same 12 digit HUC, or in the case of ONRWs, generally within the ONRW). This is because we are not aware of a method of measuring changes in assimilative capacity due to habitat alterations.

Comment H-14. *Rule 1200-04-03-.06(1)(b)1 refers to application forms. What are these forms and where does the applicant get them? Are they available for review?*

Response: These are the standard federal application forms for NPDES permits. A link to these forms is provided on the department's website under Summary of Permits (http://www.tn.gov/environment/water.shtml). Any comments regarding these federal forms should be directed to EPA.

Comment H-15. *Rule 1200-04-03-.06(1)(b)1 and 3 explains how the alternatives analysis required in part 2 will be done. For this reason, it should be subordinate to part 2 instead of separate.*

Response: We agree that the paragraphs could have been ordered that way, but believe that since part 3 has subparts, there are advantages to formatting the way it currently is. Nor would it be parallel with the other subparts of part 2, if part 3 were put under part 2.

Comment H-16. *Rule 1200-04-03-.06(1)(b)2 requires the evaluation of all alternatives in order to determine which ones are "feasible". This evaluation should be limited to reasonable alternatives.*

Response: We agree and added the word "reasonable."

Comment H-17. *Rule 1200-04-03-.06(1)(b)3 needs detailed procedures on how alternative analysis submissions will be evaluated by the department.*

Response: We agree that evaluation procedures are important, but think they would be better placed in policy or SOP documents.

Comment H-18. *Rule 1200-04-03-.06(1)(b)3(iii) suggests that avoidance of stream relocations is an alternative that avoids degradation. This should be deleted as stream relocations do not degrade habitat.*

Response: We cannot agree that all stream relocations do not degrade habitat. Remember. Degradation is any decrease in water quality, not the level of decrease that would violate water quality standards. The amount of degradation, if any, of a stream relocation depends on both the design and the implementation of the relocation. Avoiding or minimizing a stream relocation is an alternative that will lessen degradation, since even in the best relocations there are at least the temporary impacts until constructed areas stabilize and vegetation matures. The provision suggesting that the footprint of a project might be altered to avoid degradation is valid and the application should demonstrate that this alternative has been considered, even if ultimately ruled-out as infeasible.

Comment H-19. *Why must the department in Rule 1200-04-03-.06(1)(d) redo calculations regarding the level of degradation submitted by the applicant? Isn't this a duplication of efforts? Knowing the department will check the calculations will remove the applicant's incentive to do a good job.*

Response: Our goal is to provide for a thorough, but streamlined, application review process. In most cases, we will simply check the calculations and the rationale. Only where we find errors will the calculations be redone. We would not be doing our due diligence to simply assume that the permittee's calculations are correct.

We disagree that the fact of having applications reviewed lessens the incentive to submit quality work. We believe that applicants, their consultants, and the public all expect permit applications to be reviewed and understand that checking calculations is part of that process.

Comment H-20. *What basis in Rule 1200-04-03-.06(1)(d) would the department use to overrule the applicant's conclusions regarding the level of degradation to be caused by an activity?*

Response: The ultimate basis would be that the conclusions are incorrect. The reasons for that could be many, including, calculation errors, use of assumptions that do not fit the situation, lack of scientific or factual support for assertions, or incorrect input for a model.

Comment H-21. *In Rule 1200-04-03-.06(1)(d)1 the revisions state that the antidegradation review can be concluded if the degradation is found to be unmeasurable. However, a previous passage states that municipal*

discharges can never be de minimis. Is this consistent? Also, what about substances with criteria below method detection levels or that are bioaccumulative? What about Outstanding National Resource Waters?

Response: The commenter is correct. We will modify and clarify the first sentence to create sub-categories:

> In the case of discharges, if the department determines that no measurable degradation will occur as a result of the activity, no further review under this rule (1200-04-03-.06) is required regardless of the antidegradation classification of the receiving stream, **unless the activity:**
>
> **(1) is a new domestic wastewater discharge, or**
>
> **(2) introduces a parameter identified as bioaccumulative, or**
>
> **(3) introduces a parameter with a criterion below the current method detection level for that substance, or**
>
> **(4) is proposed to occur in an ONRW.**
>
> (emphasis added to illustrate new language)

Further, we will modify (d)(2) as follows:

> In the case of withdrawals **from waters other than ONRWs that require permits** ...(emphasis added to illustrate new language)

Comment H-22. *Rule 1200-04-03-.06(1)(e) requires the department to determine the antidegradation status of the receiving stream. The department should have a comprehensive monitoring program so that applicants are not required to wait while a determination of water quality is made. Other states have done this.*

Response: The department maintains a network of 5000 monitoring stations and in many streams, current water quality condition is known. However, with over 60,000 miles of indexed streams, it is not reasonable or realistic to think that we could maintain current assessments of that much water. We do not know of any other states that have done so.

The commenter is reminded that under the statute commonly referred to as the "Permittee's Bill of Rights," very challenging time-schedules have been placed on the department for permit issuance. Of course, applicants can assist in, and dramatically hasten, the permit review process by submitting complete and accurate application information, something the new antidegradation policy revisions attempt to ensure.

Comment H-23. *If the department does not know the antidegradation status of a stream where an activity is proposed, it should be presumed to have available conditions [Rule 1200-04-03-.06(1)(e)]. If the stream has not been previously identified as an ETW, it should be presumed to not be one.*

Response: Our implementation procedure requires a determination of the antidegradation status of the stream where an activity is proposed. To make this determination by presumption invites legal challenges. It is unlikely that EPA would approve such an approach.

Comment H-24. *The department maintains that it must make a determination regarding the conditions of a stream in order to apply the antidegradation policy and that these water quality conditions must not be presumed [Rule 1200-04-03-.06(1)(e)], yet the department frequently assumes impacts in unassessed streams.*

Response: We think the commenter is referring to situations in which an assessment of impairment is made on a stream, then tributaries that have not been monitored are included within the assessment unit as impaired. This works the other way as well – sometimes tributaries that have not been monitored are assessed as fully supporting if the mainstem stream is fine.

When a stream is assessed, we not only look at the data that have been collected, but also at notes and photographs that have been made by staff about the watershed as a whole. Additionally, we have immediate access to high quality aerial photographs. Where we find evidence that small tributary streams have similar characteristics to the mainstem that has been monitored, we are confident in including them in the assessment, either good or bad.

Comment H-25. *If a stream has not been listed on the most current 303(d) List, the department should presume that it has available parameters [Rule 1200-04-03-.06(1)(e)].*

Response: See the previous response. The 303(d) is simply an every two year compilation of assessment results that is helpful in prioritizing TMDL efforts. The 303(d) list carries no additional regulatory authority and more current water quality assessment information is often available. We must regulate streams based in the condition of the stream at the time of the application, rather than on its 303(d) listing status.

Comment H-26. *If a stream has not been assessed prior to the receipt of an application, it should be presumed to have available parameters in Rule 1200-04-03-.06(1)(e).*

Response: See the previous responses.

Comment H-27. *An applicant should be able to go to the department's website and determine if a stream has been identified as ETW, impaired, or habitat altered [Rule 1200-04-03-.06(1)(e)].*

Response: To a certain extent, they already can. http://www.tn.gov/environment/

- Compilation of known ETWs: http://environment-online.state.tn.us:8080/pls/enf_reports/f?p=9034:34304:1041537674797901
- Online GIS-based mapping of assessment information: http://tnmap.tn.gov/wpc/default.aspx?resetSession=true

While the above are good resources, it's important to remember that the absence of a stream from the web compilations may not mean that it isn't an ETW or impaired, just that it hasn't been assessed yet.

Comment H-28. *The basis for the identification of a stream or wetland as an ETW or the assessment of a stream or wetland as impaired or habitat altered [Rule 1200-04-03-.06(1)(e)] should be made available to applicants upon request. Where this basis cannot be provided, in-system mitigation should not be expected.*

Response: We agree.

Comment H-29. *If a stream has been found not to support a use such as fish and aquatic life protection, and has unavailable parameters [Rule 1200-04-03-.06(2)], increased degradation should not be allowed for <u>any</u> parameter that might have any detrimental effect on that use (in this case, aquatic life).*

Response: Except in a narrow range of circumstances, the antidegradation policy does not prohibit degradation. The policy says that where degradation is in the public interest, it can be allowed provided that the concentrations of that substance are not currently violating water quality standards. Significant degradation cannot be authorized in Outstanding National Resource Waters.

The commenter's suggestion that additions of any substance – even if that substance is not currently violating water quality standards – should be prohibited in impaired waters is unworkable and contrary to the spirit of water quality regulation. Under this approach, if a stream was impacted by copper, we could not authorize an increased loading of zinc.

EPA addressed this by identifying the parameter-by-parameter approach as an appropriate antidegradation implementation method. According to EPA's *Water Quality Standards Handbook*, the two steps of this approach are:

- Assess each waterbody parameter to identify any pollutant criteria for which water quality is better than required by the criterion's threshold level. (Not all parameters need to be better.)

- For each positive finding, calculate the increment between existing quality and what is established by the criterion as necessary to protect "fishable/swimmable" uses. This increment — termed the "assimilative capacity" of the waterbody — is considered the resource to be protected.

This is the approach we follow. Using the previous example: if the concentrations of zinc in a waterbody were "better than required by the criterion" then zinc has an assimilative capacity that could be assigned if all other requirements are met. Copper would not have an assimilative capacity since its criterion is not being met. The department would appropriately treat the two parameters differently.

The concern behind this comment, which was also made previously in this rulemaking process, is the reason why we have clarified what are criteria and added definitions for "parameter" and "response variable."

Comment H-30. *Why do the provisions for unavailable conditions [Rule 1200-04-03-.06(2)(a)] contain a prohibition against bioaccumulative substances or substances whose criteria are below current method detection levels? If the concentrations will be unmeasurable, can't they be allowed in all cases?*

Response: If a substance has been identified as already impacting a stream, usually the requirement that as long as a new loading is not "measurable" it is allowable, will be appropriately protective. However, in the case of bioaccumulative substances or substances with very low criteria, an additional level of protection is warranted.

We will modify the language in Rule 1200-04-03-.06(1)(d)1 to clarify that bioaccumulative or low criteria substances need additional scrutiny.

Comment H-31. *Rule 1200-04-03-.06(2)(a) references current "method detection levels." Is this the same as required reporting levels?*

Response: No, the method detection level is generally lower and is specific to the instrument and EPA methodology being used.

Comment H-32. *The application of antidegradation to water withdrawals in Rule 1200-04-03-.06(2)(b) should be limited to their potential impacts of habitat or biological integrity. Water withdrawals do not affect chemical concentrations in streams.*

Response: We think that they can in certain circumstances. For example, if we were asked to authorize a water withdrawal upstream of an industrial or municipal discharger, the diversion of water could, at low flow, increase in-stream concentrations of parameters discharged. However, if the concentrations remained the same, there is no degradation and no need to implement the antidegradation policy.

Comment H-33. *The proposed changes in the antidegradation policy in Rule 1200-04-03-.06(2) are matters that have been ruled upon by the Chancery Court of Davidson County in Pickard v. TN Water Quality Control Board.*

Response: The chancellor's ruling in this case was the Court's interpretation of the meaning of the existing regulation promulgated in 2007. This ruling does not bind us to previous regulation language. Also, some aspects of the chancellor's rulings have now been reversed by the Court of Appeals. The triennial review process is intended to allow water quality standards to be revised as we receive new guidance and learn from implementation efforts.

Comment H-34. *If the regulation is revised to clarify that impaired streams are only considered unavailable for the specific pollutant(s) causing the impairment [Rule 1200-04-03-.06(2)], that will appear to be intended to allow the maximum amount of pollution in waterbodies.*

Response: The Act prohibits the department from issuing permits that would allow the condition of pollution. We consider our interpretation of the policy to be based on common sense. Streams are only unavailable for the pollutants specifically causing water quality standards to be violated. We can issue a permit for an activity that would cause degradation, after alternative analysis and determination of public need, of only those parameters that are available.

Comment H-35. *If a stream has available conditions for habitat, the requirement regarding alterations should simply be that the degradation not cause water quality standards to be violated. There should be no requirement that social and economic necessity be determined, especially for transportation projects [Rule 1200-04-03-.06(3)(c)].*

Response: Such a policy would be in direct violation of the Clean Water Act and rules and would ensure federal disapproval of that provision because the federal regulations require analysis of alternatives and consideration of the economic or social justification prior to authorizing degradation, not just prior to criteria violation. Transportation projects already go through intensive financial and environmental review to ensure that they are in the public interest. It seems to us that in many situations, this information would not require much modification to satisfy the economic and social justification of the antidegradation policy.

Comment H-36. *Who is responsible for making the determination that degradation is "necessary" in Rule 1200-04-03-.06(3). What criteria will be used?*

Response: When the water board asked multiple agencies and groups to meet to work out an agreement on antidegradation provisions about ten years ago, it was decided by the group that the department would have this responsibility as part of the permit issuance process. This was then approved by the Board in the current language of the rule. The basis for the determination would be review of the alternatives analysis and economic information provided by the applicant. Decisions made by the department would be subject to requests from the applicant or third-parties for review by the board and, thereafter, by the courts.

Comment H-37. *If an applicant has proposed mitigation, they should not be required to demonstrate social and economic necessity as required in Rule 1200-04-03-.06(3)(c). The forms used for this are not appropriate for linear projects.*

Response: The state must make a determination that the degradation is in the public interest, even if mitigation has been proposed, unless in-system mitigation has been used to render the degradation *de minimis*. As the regulation already states, alternate information formats may be used by applicants if the EPA forms are inappropriate.

Comment H-38. *In Rule 1200-04-03-.06(4)(a)1, the regulation refers to "Waters within state or national parks, wildlife refuges, forests, wilderness areas, or natural areas." A colon should be added after the word "national" so that it is clear that both state and federal areas are included for the entire list.*

Response: We think this is already clear.

Comment H-39. *A revisions to Rule 1200-04-03-.06(4)(c) proposes to delete the requirement that the applicant be informed in writing that the stream they intend to alter is an Exception Tennessee Water. Why?*

Response: Rule 1200-04-03-.06(1)(e) establishes the department's responsibility for public notice once an application has been deemed to be complete. Thus, more than just the applicant will be notified. Additionally, Rule 1200-04-03-.06(4)(d)1 provides specific notice requirements for Exceptional Tennessee Waters.

Comment H-40. *The language in Rule 1200-04-03-.06(4)(c)3 that states that "new or increased habitat alterations that would cause degradation..." is awkward.*

Response: The commenter is correct and we will revise the phrase to read "an activity that would cause degradation of habitat..."

Comment H-41: *The requirements for approving degradation in Exceptional Tennessee Waters [Rule 1200-04-03-.06(4)(c)] appear to have been diluted to the point that there is no difference between these requirements and those for waters with available parameters*

Response: We do not agree this is the case. The justification for degrading higher resource value stream must be stronger than with streams with available conditions, but no exceptional values. Additionally, the declaratory order contested case procedures in Rule 1200-04-03-.06(4)(d) are specific to ETWs.

The process for issuing or declining to issue permits must not be prolonged unnecessarily and must comply with existing state laws regarding the rights of permittees.

Comment H-42: *Clarify what the department means by "no discernible effect" under the ONRW protections.*

Response: We will replace this phrase and return to the idea of no "significant" effect.

Comment H-43: *Habitat alterations that represent a de minimis amount of degradation can be allowed in ONRWs, as long as any mitigation occurs within the ONRW. Is it possible that a de minimis amount of physical alteration might cause chemical degradation, which would be prohibited?*

Response: It is possible. We will revise the second part of 1200-04-03-.06(5)(b)2 so that it now reads "no new or increased habitat alteration that would cause degradation of habitat above the level of de minimis or degrade water chemistry for more than a short duration will be authorized."

Regulatory Flexibility Addendum
Pursuant to T.C.A. §§ 4-5-401 through 4-5-404, prior to initiating the rule making process as described in T.C.A. § 4-5-202(a)(3) and T.C.A. § 4-5-202(a), all agencies shall conduct a review of whether a proposed rule or rule affects small businesses.

These rules are federally mandated. Section 303(c) of the federal Clean Water Act, 33 U.S.C. §1313(c) requires states to review and modify their water quality standards at least once every three years.

Impact on Local Governments

Pursuant to T.C.A. §§ 4-5-220 and 4-5-228 "any rule proposed to be promulgated shall state in a simple declarative sentence, without additional comments on the merits of the policy of the rules or regulation, whether the rule or regulation may have a projected impact on local governments." (See Public Chapter Number 1070 (http://state.tn.us/sos/acts/106/pub/pc1070.pdf) of the 2010 Session of the General Assembly)

Most local governments will not be impacted by these rule amendments. However, it is possible that there will be a minor impact on some local governments because of specific situations.

Additional Information Required by Joint Government Operations Committee

All agencies, upon filing a rule, must also submit the following pursuant to T.C.A. § 4-5-226(i)(1).

(A) A brief summary of the rule and a description of all relevant changes in previous regulations effectuated by such rule;

The rules that are being amended set the standards for determining how clean the water in Tennessee must be. The federal Clean Water Act requires that these rules be reviewed and modified at least every three years and that the standards in them meet federal requirements. The major changes being made are:

- Certain numeric standards are changed to reflect changes in federal standards;
- Changes are being made in wording to make it more precise;
- Clarifications are being made in the process of review of applications;
- The permitting process for certain waters is being revised for clarity and to reduce processing time;

The waters identified as trout streams are being updated based on information from TWRA.

(B) A citation to and brief description of any federal law or regulation or any state law or regulation mandating promulgation of such rule or establishing guidelines relevant thereto;

Section 303(c) of the Clean Water Act, 33 U.S.C. §1313(c) mandates the triennial review of these rules and Tenn. Code Ann. Section 69-3-106 directs the board to adopt such rules and has guidelines relevant to them.

(C) Identification of persons, organizations, corporations or governmental entities most directly affected by this rule, and whether those persons, organizations, corporations or governmental entities urge adoption or rejection of this rule;

Clean water goals form the foundation of Tennessee's water quality protection program and are used to assess ambient water quality, calculate discharge permit limits, and establish clean-up goals for impaired waters. All Tennesseans are positively impacted, either directly or indirectly, by the periodic review of these goals. While particular entities may disagree on the specific protection levels, all agree in the need to have goals in regulation.

(D) Identification of any opinions of the attorney general and reporter or any judicial ruling that directly relates to the rule;

Although the Attorney General has issued opinions that relate to the Water Quality Standards, including Opinion No. 09-93, we are not aware of any that relate directly to these amendments.

(E) An estimate of the probable increase or decrease in state and local government revenues and expenditures, if any, resulting from the promulgation of this rule, and assumptions and reasoning upon which the estimate is based. An agency shall not state that the fiscal impact is minimal if the fiscal impact is more than two percent (2%) of the agency's annual budget or five hundred thousand dollars ($500,000), whichever is less;

There should be no increase of decrease in state or local government revenues or expenditures resulting from the promulgation of these amendments.

(F) Identification of the appropriate agency representative or representatives, possessing substantial knowledge and understanding of the rule;

Gregory Denton
Manager Planning and Standards Section
Division of Water Pollution Control

(G) Identification of the appropriate agency representative or representatives who will explain the rule at a scheduled meeting of the committees;

Alan M. Leiserson
Legal Services Director

Office of General Counsel

(H) Office address, telephone number, and email address of the agency representative or representatives who will explain the rule at a scheduled meeting of the committees; and

Office of General Counsel
Tennessee Department of Environment and Conservation
20th Floor L & C Tower
Nashville, Tennessee 37243-1548
(615) 532-0131
Alan.Leiserson@tn.gov

(I) Any additional information relevant to the rule proposed for continuation that the committee requests.

The Department is not aware of any.

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For Department of State Use Only

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Rule ID(s): 5469-5470
File Date: 4/3/13
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Rulemaking Hearing Rule(s) Filing Form

Rulemaking Hearing Rules are rules filed after and as a result of a rulemaking hearing. T.C.A. § 4-5-205

Agency/Board/Commission:	Environment and Conservation
Division:	Water Resources
Contact Person:	Gregory Denton
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Revision Type (check all that apply):

X Amendment
___ New
___ Repeal

Rule(s) Revised (**ALL** chapters and rules contained in filing must be listed here. If needed, copy and paste additional tables to accommodate multiple chapters. Please enter only **ONE** Rule Number/Rule Title per row)

Chapter Number	**Chapter Title**
1200-04-03	General Water Quality Criteria
Rule Number	**Rule Title**
1200-04-03-.01	Tennessee Water Quality Control Board
1200-04-03-.02	General Considerations
1200-04-03-.03	Criteria For Water Uses
1200-04-03-.04	Definitions
1200-04-03-.05	Interpretation of Criteria
1200-04-03-.06	Antidegradation Statement
1200-04-03-.07	Ground Water Classification
1200-04-03-.08	Criteria
1200-04-03-.09	Site Specific Impaired Classification Petition Process
1200-04-03-.10	Remediation of Ground Water or Perched Water
1200-04-03-.11	Classified Site Specific Impaired Ground Water and Respective Criteria
1200-04-03-.12	Reporting Requirement

Chapter Number	**Chapter Title**
1200-04-04	Use Classifications For Surface Waters
Rule Number	**Rule Title**
1200-04-04-.01	Memphis Area Basin
1200-04-04-.02	Hatchie River Basin
1200-04-04-.03	Obion-Forked Deer Basin
1200-04-04-.04	Tennessee River Basin – Western Valley
1200-04-04-.05	Duck River Basin
1200-04-04-.06	Elk River Basin (including Shoal Creek)

1200-04-04-.07	Lower Tennessee River Basin (including Conasauga Basin)
1200-04-04-.08	Upper Tennessee River Basin
1200-04-04-.09	Clinch River Basin
1200-04-04-.10	French Broad River Basin
1200-04-04-.11	Holston River Basin
1200-04-04-.12	Lower Cumberland River Basin
1200-04-04-.13	Upper Cumberland River Basin
1200-04-04-.14	Barren River Watershed

(Place substance of rules and other info here. Statutory authority must be given for each rule change. For information on formatting rules go to http://state.tn.us/sos/rules/1360/1360.htm)

Chapter 1200-04-03
General Water Quality Criteria

Amendments

Chapter 1200-04-03 General Water Quality Criteria is deleted in its entirety and replaced with the following so that, as amended, Chapter 1200-04-03 shall read as follows:

Chapter 1200-04-03
General Water Quality Criteria

Table of Contents

1200-04-03-.01	Tennessee Board of Water Quality, Oil and Gas	1200-04-03-.07	Ground Water Classification
1200-04-03-.02	General Considerations	1200-04-03-.08	Criteria
1200-04-03-.03	Criteria For Water Uses	1200-04-03-.09	Site Specific Impaired Classification Petition Process
1200-04-03-.04	Definitions	1200-04-03-.10	Remediation of Ground Water or Perched Water
1200-04-03-.05	Interpretation of Criteria	1200-04-03-.11	Classified Site Specific Impaired Ground Water and Respective Criteria
1200-04-03-.06	Antidegradation Statement	1200-04-03-.12	Reporting Requirement

1200-04-03-.01 Tennessee Board of Water Quality, Oil and Gas

The Water Quality Control Act, T.C.A., § 69-3-101, et seq., makes it the duty of the Board of Water Quality, Oil and Gas to study and investigate all problems concerned with the pollution of the Waters of the State and with its prevention, abatement, and control; and to establish such standards of quality for any Waters of the State in relation to their reasonable and necessary use as the Board shall deem to be in the public interest; and establish general policies relating to pollution as the Board shall deem necessary to accomplish the purposes of the Act. The following general considerations and criteria shall be used to determine the permissible conditions of waters with respect to pollution and preventative or corrective measures required to control pollution in various waters or in different sections of the same waters.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.02 General Considerations

(1) Tennessee water quality standards shall consist of the General Water Quality Criteria and the Antidegradation Statement found in Rule 1200-04-03, and the Use Classifications for Surface Waters found in Rule 1200-04-04.

(2) Waters have many uses which in the public interest are reasonable and necessary. Such uses include: sources of water supply for domestic and industrial purposes; propagation and maintenance of fish and other aquatic life; recreation in and on the waters including the safe consumption of fish and shellfish; livestock watering and irrigation; navigation; generation of power; propagation and maintenance of

wildlife; and the enjoyment of scenic and aesthetic qualities of waters.

(3) The rigid application of uniform water quality is not desirable or reasonable because of the varying uses of such waters. The assimilative capacity of a stream for sewage and waste varies depending upon various factors and including the following: volume of flow, depth of channel, the presence of falls or rapids, rate of flow, temperature, natural characteristics, and the nature of the stream.

(4) In order to permit the reasonable and necessary uses of the Waters of the State, existing pollution should be corrected as rapidly as practicable, and future pollution prevented through the best available technology economically achievable or that greater level of technology necessary to meet water quality standards; i.e., modeling and stream survey assessments, treatment plants or other control measures.

(5) Since all Waters of the State are classified for more than one use, the most stringent criteria will be applicable. In cases where criteria for protection of more than one use apply at different stream flows (e.g., aquatic life versus recreation), the most protective will also be applicable.

(6) Waters identified as wet weather conveyances according to the definition found in Rule 1200-04-03-.04, shall be protective of humans and wildlife that may come in contact with them and shall not adversely affect the quality of downstream waters. Applicable water quality standards will be maintained downstream of wet weather conveyances.

(7) Where general water quality criteria are applied on a regional, ecoregional, or subecoregional basis, these criteria will be considered to apply to a stream if eighty percent of its watershed or catchment is contained within the unit upon which the criterion is based.

(8) All fish and aquatic life metals criteria are expressed as total recoverable, except cadmium, copper, lead, nickel, silver, and zinc which are expressed as dissolved. Translators will be used to convert the dissolved fraction into a total recoverable permit limit. One of three approaches to metals translation will be used: (1) translator is the same as the conversion factor, (2) translator is based on relationships derived from STORET data, (3) a site-specific translator is developed. Where available, a site-specific translator is preferred. For assessing whether criteria for cadmium, copper, lead, nickel, silver, and zinc are exceeded by ambient water quality conditions, the dissolved criteria will also be translated in order to allow direct comparison to the ambient data, if total recoverable.

(9) Site-specific criteria studies may be conducted on any appropriate fish and aquatic life criteria.

(a) Site-specific criteria studies based on a Water Effects Ratio (WER) calculated from the documented toxicity of a parameter in the stream in which it will be introduced may supersede the adopted criteria at a site. The Division shall approve a site-specific criteria developed by others provided that the WER methodology [Interim Guidance on Determination and Use of Water-effect Ratios for Metals (EPA-823-B-94-001)] is used, both the study plan and results are approved by the department, and the U.S. Environmental Protection Agency has concurred with the final site specific criterion value(s).

(b) Any site specific criterion based on methodologies other than the WER methodology which recalculate specific criterion, such as the Resident Species Method or the Recalculation Method, must be adopted as a revision to Tennessee water quality standards into Chapter 1200-04-03, and following EPA approval, can be used for Clean Water Act purposes.

References on this subject include, but are not limited to: Technical Support Document for Water Quality-based Toxics Control (EPA - 505/2-90-001); Technical Guidance Manual for Performing Waste Load Allocations: Book VIII (EPA/600/6-85/002a/002b/002c); MinteqA2, An Equilibrium Metal Speciation Model (EPA/600/3-87/012); Water Quality Standards Handbook, Second Edition (EPA-823-B-93-002); The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criteria (EPA-823-B-96-007); Interim Guidance on Determination and Use of Water-effect Ratios for Metals (EPA-823-B-94-001).

(10) Interpretation and application of narrative criteria shall be based on available scientific literature and EPA guidance and regulations.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.03 Criteria For Water Uses

(1) The criteria for the use of Domestic Water Supply are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not appreciably impair the usefulness of the water as a source of domestic water supply.

(d) Total Dissolved Solids - The total dissolved solids shall at no time exceed 500 mg/l.

(e) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water as a source of domestic water supply.

(f) Turbidity or Color - There shall be no turbidity or color in amounts or characteristics that cannot be reduced to acceptable concentrations by conventional water treatment processes (See definition).

(g) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet or mid-depth, whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(h) Coliform - The concentration of the E. coli group shall not exceed 630 per 100 ml as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purpose of determining the geometric mean, individual samples having an E. coli group concentration of less than 1 per 100 ml shall be considered as having a concentration of 1 per 100 ml.

(i) Taste or Odor - The waters shall not contain substances which will result in taste or odor that prevent the production of potable water by conventional water treatment processes.

(j) Toxic Substances - The waters shall not contain toxic substances, whether alone or in combination with other substances, which will produce toxic conditions that materially affect the health and safety of man or animals, or impair the safety of conventionally treated water supplies. Available references include, but are not limited to: Quality Criteria for Water (Section 304(a) of Public Law 92-500 as amended); Federal Regulations under Section 307 of Public Law 92-500 as amended; and Federal Regulations under Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act, (Public Law 93-523). Limits set for some of the most commonly occurring toxic substances are as follows:

Compound	Criteria (µg/L)	Compound	Criteria (µg/L)
Antimony	6	Diquat	20
Arsenic	10	Endothall	100
Beryllium	4	Glyphosate	700
Barium	2000	Hexachlorobenzene	1
Cadmium	5	Hexachlorocyclopentadiene	50
Chromium, total	100	Oxamyl (Vydate)	200
Lead	5	Picloram	500
Cyanide (as free cyanide)	200	Simazine	4

Mercury	2	2,3,7,8 TCDD (Dioxin)	0.00003
Nickel	100	Benzene	5
Selenium	50	Carbon tetrachloride	5
Thallium	2	1,2-Dichloroethane	5
Alachlor	2	1,1-Dichloroethylene	7
Atrazine	3	1,1,1-Trichloroethane	200
Carbofuran	40	Trichloroethylene	5
Chlordane	2	Vinyl chloride	2
Dibromo chloropropane	0.2	para-Dichlorobenzene	75
2,4 Dichlorophenoxyacetic Acid	70	cis 1,2-Dichloroethylene	70
Ethylene dibromide	0.05	1,2-Dichloropropane	5
Heptachlor	0.4	Ethyl benzene	700
Heptachlor epoxide	0.2	Monochlorobenzene	100
Lindane	0.2	ortho-Dichlorobenzene	600
Methoxychlor	40	Styrene	100
Polychlorinated biphenyls	0.5	Tetrachloroethylene	5
2,4,5 Trichlorophenoxyprioponic acid	50	Toluene	1000
		trans 1,2-Dichloroethylene	100
Pentachlorophenol	1	Xylenes, total	10000
Benzo(a)pyrene	0.2	Dichloromethane	5
Dalapon	200	1,2,4-Trichlorobenzene	70
Di(2-ethylhexyl) adipate	400	1,1,2-Trichloroethane	5
Di(2-ethylhexyl) phthalate	6	Endrin	2.0
Dinoseb	7	Toxaphene	3
		Nitrate	10000

(k) Other Pollutants - The waters shall not contain other pollutants in quantities that may be detrimental to public health or impair the usefulness of the water as a source of domestic water supply.

(2) The criteria for the use of Industrial Water Supply are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not appreciably impair the usefulness of the water as a source of industrial water supply.

(d) Total Dissolved Solids - The total dissolved solids shall at no time exceed 500 mg/l.

(e) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water as a source of industrial water supply.

(f) Turbidity or Color - There shall be no turbidity or color in amounts or characteristics that cannot be reduced to acceptable concentrations by conventional water treatment processes.

(g) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet or mid- depth, whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(h) Taste or Odor - The waters shall not contain substances which will result in taste or odor that would prevent the use of the water for industrial processing.

(i) Toxic Substances - The waters shall not contain toxic substances whether alone or in combination with other substances, which will adversely affect industrial processing.

(j) Other Pollutants - The waters shall not contain other pollutants in quantities that may adversely affect the water for industrial processing.

(3) The criteria for the use of Fish and Aquatic Life are the following.

(a) Dissolved Oxygen - The dissolved oxygen shall not be less than 5.0 mg/l with the following exceptions.

1. In streams identified as trout streams, including tailwaters, dissolved oxygen shall not be less than 6.0 mg/L.

2. The dissolved oxygen concentration of trout waters designated as supporting a naturally reproducing population shall not be less than 8.0 mg/L. (Tributaries to trout streams or naturally reproducing trout streams should be considered to be trout streams or naturally reproducing trout streams, unless demonstrated otherwise. Additionally, all streams within the Great Smoky Mountains National Park should be considered naturally reproducing trout streams.)

3. In wadeable streams in subecoregion 73a, dissolved oxygen levels shall not be less than a daily average of 5.0 mg/L with a minimum dissolved oxygen level of 4.0 mg/L.

4. The dissolved oxygen level of streams in ecoregion 66 (Blue Ridge Mountains) not designated as naturally reproducing trout streams shall not be less than 7.0 mg/L.

Substantial and/or frequent variations in dissolved oxygen levels, including diurnal fluctuations, are undesirable if caused by man-induced conditions. Diurnal fluctuations shall not be substantially different than the fluctuations noted in reference streams in that region.

In lakes and reservoirs, the dissolved oxygen concentrations shall be measured at mid-depth in waters having a total depth of ten feet or less, and at a depth of five feet in waters having a total depth of greater than ten feet and shall not be less than 5.0 mg/L.

(b) pH - The pH value shall not fluctuate more than 1.0 unit over a period of 24 hours and shall not be outside the following ranges: 6.0 – 9.0 in wadeable streams and 6.5 – 9.0 in larger rivers, lakes, reservoirs, and wetlands.

(c) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life.

(d) Turbidity, Total Suspended Solids, or Color - There shall be no turbidity, total suspended solids, or color in such amounts or of such character that will materially affect fish and aquatic life. In wadeable streams, suspended solid levels over time should not be substantially different than conditions found in reference streams.

(e) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of recognized trout waters shall not exceed 20°C. There shall be no abnormal temperature changes that may affect aquatic life unless caused by natural conditions. The temperature in flowing streams shall be measured at mid-depth.

The temperature of impoundments where stratification occurs will be measured at mid-depth in the epilimnion (see definition in 1200-04-03-.04) for warm water fisheries and mid-depth in the hypolimnion (see definition in 1200-04-03-.04) for cold water fisheries. In the case of large impoundments (100 acres or larger) subject to stratification and recognized as trout waters, the temperature of the hypolimnion shall not exceed 20°C.

A successful demonstration as determined by the state conducted for thermal discharge limitations under Section 316(a) of the Clean Water Act, (33 U.S.C. §1326), shall constitute compliance with this section.

(f) Taste or Odor - The waters shall not contain substances that will impart unpalatable flavor to fish or result in noticeable offensive odors in the vicinity of the water or otherwise interfere with fish or aquatic life. References include, but are not limited to: Quality Criteria for Water (section 304(a) of Public Law 92-500 as amended).

(g) Toxic Substances - The waters shall not contain substances or a combination of substances including disease - causing agents which, by way of either direct exposure or indirect exposure through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), physical deformations, or restrict or impair growth in fish or aquatic life or their offspring. References on this subject include, but are not limited to: Quality Criteria for Water (Section 304(a) of Public Law 92-500 as amended); Federal Regulations under Section 307 of Public Law 92-500 as amended. The following criteria are for the protection of fish and aquatic life:

Compound	Criterion Maximum Concentration µg/l (CMC)	Criterion Continuous Concentration µg/l (CCC)
Arsenic (III)*	340	150
Cadmium**	2.0	0.25
Chromium, III**	570	74
Chromium, VI*	16	11
Copper**	13	9.0
Lead**	65	2.5
Mercury* (b)	1.4	0.77
Nickel**	470	52
Selenium	20	5
Silver**	3.2	---
Zinc**	120	120
Cyanide***	22	5.2
Chlorine (TRC)	19	11
Pentachlorophenol ****	19	15
Aldrin	3.0	---
g-BHC – Lindane (b)	0.95	---
Chlordane (b)	2.4	0.0043
4-4'-DDT (b)	1.1	0.001
Demeton	----	0.1
Diazinon	0.1	0.1
Dieldrin (b)	0.24	0.056
a-Endosulfan	0.22	0.056
b-Endosulfan	0.22	0.056
Endrin	0.086	0.036
Guthion	----	0.01
Heptachlor	0.52	0.0038
Heptachlor epoxide	0.52	0.0038
Malathion	----	0.1
Methoxyclor	----	0.03
Mirex (b)	----	0.001
Nonylphenol	28.0	6.6
Parathion	0.065	0.013
PCBs, total (b)	---	0.014
Toxaphene (b)	0.73	0.0002
Tributyltin (TBT)	0.46	0.072

(b) Bioaccumulative parameter.

* Criteria for these metals are expressed as dissolved.

** Criteria for these metals are expressed as dissolved and are a function of total hardness (mg/L). Hardness-dependent metals criteria may be calculated from the following (values displayed above correspond to a total hardness of 100 mg/l and may have been rounded):

CMC (dissolved) = exp{mA[ln(hardness)]+bA } (CF)

CCC (dissolved) = exp{mC [ln(hardness)]+bC} (CF)

Chemical	MA	bA	MC	BC	Freshwater Conversion Factors (CF)	
					CMC	CCC
Cadmium	1.0166	-3.924	0.7409	-4.719	1.136672-[(ln hardness)(0.041838)]	1.101672-[(ln hardness)(0.041838)]
Chromium III	0.8190	3.7256	0.8190	0.6848	0.316	0.860
Copper	0.9422	-1.700	0.8545	-1.702	0.960	0.960
Lead	1.273	-1.460	1.273	-4.705	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]
Nickel	0.8460	2.255	0.8460	0.0584	0.998	0.997
Silver	1.72	-6.59			0.85	
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

If criteria are hardness-dependent, the Criterion Maximum Concentration (CMC) and Criterion Continuous Concentration (CCC) shall be based on the actual stream hardness. When an ambient hardness of less than 25 mg/l is used to establish criteria for cadmium or lead, the hardness dependent conversion factor (CF) shall not exceed one. When ambient hardness is greater than 400 mg/l, criteria shall be calculated according to one of the following two options: (1) calculate the criterion using a default Water Effects Ratio (WER) of 1.0 and a hardness of 400 mg/l in the hardness based equation; or (2) calculate the criterion using a WER and the actual ambient hardness of the surface water in the hardness based equation. For information concerning metals translation and site-specific criteria, see 1200-04-03-.02(9).

*** If Standard Methods 4500-CN I (Weak Acid Dissociable), 4500-CN G (Cyanides Amenable to Chlorination after Distillation), or OIA-1677 are used, this criterion may be applied as free cyanide.

**** Criteria for pentachlorophenol are expressed as a function of pH. Values displayed above correspond to a pH of 7.8 and are calculated as follows:

CMC = exp(1.005(pH) - 4.869) CCC = exp(1.005(pH) - 5.134)

(h) Other Pollutants - The waters shall not contain other pollutants that will be detrimental to fish or aquatic life.

(i) Iron – The waters shall not contain iron at concentrations that cause toxicity or in such amounts that interfere with habitat due to precipitation or bacteria growth.

(j) Ammonia – The one-hour average concentration of total ammonia nitrogen (in mg N/L) shall not exceed the CMC (acute criterion) calculated using the following equations:

Where salmonid fish are present:

$$CMC = \frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}}$$

Or where salmonid fish are not present:

$$CMC = \frac{0.411}{1 + 10^{7.204-pH}} + \frac{58.4}{1 + 10^{pH-7.204}}$$

The thirty-day average concentration of total ammonia nitrogen (in mg N/L) shall not exceed the CCC (chronic criterion) calculated using the following equations:

When fish early life stages are present:

$$CCC = \left(\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right) \cdot MIN\,(2.85,\ 1.45 \cdot 10^{0.028 \cdot (25-T)})$$

When fish early life stages are absent:

$$CCC = \left(\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right) \cdot 1.45 \cdot 10^{0.028 \cdot (25-MAX\,(T,7))}$$

In addition, the highest four-day average within the 30-day period shall not exceed 2.5 times the CCC.

(k) Nutrients - The waters shall not contain nutrients in concentrations that stimulate aquatic plant and/or algae growth to the extent that aquatic habitat is substantially reduced and/or the biological integrity fails to meet regional goals. Additionally, the quality of downstream waters shall not be detrimentally affected. Examples of parameters associated with the criterion include but are not limited to: nitrogen, phosphorus, potassium, calcium, magnesium, and various forms of each.

Interpretation of this provision may be made using the document Development of Regionally-based Interpretations of Tennessee's Narrative Nutrient Criterion and/or other scientifically defensible methods.

(l) Coliform - The concentration of the E. coli group shall not exceed 630 per 100 ml as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purposes of determining the geometric mean, individual samples having an E. coli group concentration of less than 1 per 100 ml shall be considered as having a concentration of 1 per 100 ml. In addition, the concentration of the E. coli group in any individual sample shall not exceed 2,880 per 100 ml.

(m) Biological Integrity - The waters shall not be modified through the addition of pollutants or through physical alteration to the extent that the diversity and/or productivity of aquatic biota within the receiving waters are substantially decreased or, in the case of wadeable streams, substantially different from conditions in reference streams in the same ecoregion. The parameters associated with this criterion are the aquatic biota measured. These are response variables.

Interpretation of this provision for any stream which (a) has at least 80% of the upstream catchment area contained within a single bioregion and (b) is of the appropriate stream order specified for the bioregion and (c) contains the habitat (riffle or rooted bank) specified for the bioregion, may be made using the most current revision of the Department's Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys and/or other scientifically defensible methods.

Interpretation of this provision for all other wadeable streams, lakes, and reservoirs may be made using Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers (EPA/841-B-99-002) or Lake and Reservoir Bioassessment and Biocriteria (EPA 841-B-98-007), and/or other scientifically defensible methods. Interpretation of this provision for wetlands or large rivers may be made using scientifically defensible methods. Effects to biological populations will be measured by comparisons to upstream conditions or to appropriately selected reference sites in the same bioregion if upstream conditions are determined to be degraded.

(n) Habitat - The quality of stream habitat shall provide for the development of a diverse aquatic community that meets regionally-based biological integrity goals. Examples of parameters associated with this criterion include but are not limited to: sediment deposition, embeddedness of riffles, velocity/depth regime, bank stability, and vegetative protection. Types of activities or conditions which can cause habitat loss include, but are not limited to: channel and substrate alterations, rock and gravel removal, stream flow changes, accumulation of silt, precipitation of metals, and removal of riparian vegetation. For wadeable streams, the instream habitat within each subecoregion shall be generally similar to that found at reference streams. However, streams shall not be assessed as impacted by habitat loss if it has been demonstrated that the biological integrity goal has been met.

(o) Flow – Stream or other waterbody flows shall support the fish and aquatic life criteria.

(4) The criteria for the use of Recreation are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to recreation.

(d) Total Suspended Solids, Turbidity or Color - There shall be no total suspended solids, turbidity or color in such amounts or character that will result in any objectionable appearance to the water, considering the nature and location of the water.

(e) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet, or mid- depth whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(f) Coliform - The concentration of the E. coli group shall not exceed 126 colony forming units per 100 ml, as a geometric mean based on a minimum of 5 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purposes of determining the geometric mean, individual samples having an E. coli concentration of less than 1 per 100 ml shall be considered as having a concentration of 1 per 100 ml.

Additionally, the concentration of the E. coli group in any individual sample taken from a lake, reservoir, State Scenic River, Exceptional Tennessee Water or ONRW (1200-04-03-.06) shall not exceed 487 colony forming units per 100 ml. The concentration of the E. coli group in any individual sample taken from any other waterbody shall not exceed 941 colony forming units per 100 ml.

(g) Taste or Odor - The waters shall not contain substances that will result in objectionable taste or odor.

(h) Nutrients - The waters shall not contain nutrients in concentrations that stimulate aquatic plant and/or algae growth to the extent that the public's recreational uses of the waterbody or other

downstream waters are detrimentally affected. Unless demonstrated otherwise, the nutrient criteria found in 1200-04-03-.03(3)(k) will be considered adequately protective of this use.

(i) Nutrient Response Criteria for Pickwick Reservoir: those waters impounded by Pickwick Dam on the Tennessee River. The reservoir has a surface area of 43,100 acres at full pool, 9,400 acres of which are within Tennessee. Chlorophyll a (corrected, as described in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998): the mean of the photic-zone (See definition) composite chlorophyll a samples collected monthly April through September shall not exceed 18 µg/l, as measured over the deepest point, main river channel, dam forebay.

(j) Toxic Substances - The waters shall not contain toxic substances, whether alone or in combination with other substances, that will render the waters unsafe or unsuitable for water contact activities including the capture and subsequent consumption of fish and shellfish, or will propose toxic conditions that will adversely affect man, animal, aquatic life, or wildlife. Human health criteria have been derived to protect the consumer from consumption of contaminated fish and water. The water and organisms criteria should only be applied to those waters classified for both recreation and domestic water supply. The criteria for recreation are as follows:

Compound	Water & Organisms Criteria * (µg/L)	Organisms Only Criteria (µg/L)
INORGANICS		
Antimony	5.6	640
Arsenic (c)	10.0	10.0
Mercury (b)	0.05	0.051
Nickel	610	4600
Thallium	0.24	0.47
Cyanide	140	140
Selenium	170	4200
Zinc	7400	26000
Dioxin ** (b)	0.000001	0.000001
VOLATILES		
Acrolein	6	9
Acrylonitrile (c)	0.51	2.5
Benzene (c)	22	510
Bromoform (c)	43	1400
Carbon tetrachloride (c)	2.3	16
Chlorobenzene	130	1600
Chlorodibromomethane (c)	4.0	130
Chloroform (c)	57	4700
Dichlorobromomethane (c)	5.5	170
1,2-Dichloroethane (c)	3.8	370
1,1-Dichloroethylene	330	7100
1,2-Dichloropropane (c)	5.0	150
1,3-Dichloropropene (c)	3.4	210
Ethylbenzene	530	2100
Methyl bromide	47	1500
Methylene chloride (c)	46	5900
1,1,2,2-Tetrachloroethane (c)	1.7	40
Tetrachloroethylene (c)	6.9	33
Toluene	1300	15000
1,2-Trans-Dichloroethylene	140	10000
1,1,2-Trichloroethane (c)	5.9	160
Trichloroethylene (c)	25	300
Vinyl chloride (c)	0.25	24

Compound	Water & Organisms Criteria * (µg/L)	Organisms Only Criteria (µg/L)
ACID EXTRACTABLES		
2-Chlorophenol	81	150
2,4-Dichlorophenol	77	290
2,4-Dimethylphenol	380	850
2-Methyl-4,6-dinitrophenol	13	280
Dinitrophenols	69	5300
Pentachlorophenol (c) (pH)	2.7	30
Phenol	10000	860000
2,4,6-Trichlorophenol (c)	14	24
BASE NEUTRALS		
Acenaphthene	670	990
Anthracene	8300	40000
Benzidine (c)	0.00086	0.0020
Benzo(a)anthracene (c)	0.038	0.18
Benzo(a)pyrene (c)	0.038	0.18
Benzo(b)fluoranthene (c)	0.038	0.18
Benzo(k)fluoranthene (c)	0.038	0.18
Bis(2-Chlorethyl)ether (c)	0.30	5.3
Bis(2-Chloro-isopropyl)ether	1400	65000
Bis(2-Ethylhexyl)phthalate (c)	12	22
Bis(Chloromethyl)ether (c)	0.0010	0.0029
Butylbenzyl Phthalate	1500	1900
2-Chloronaphthalene	1000	1600
Chrysene (c)	0.038	0.18
Dibenz(a,h)Anthracene (c)	0.038	0.18
1,2-Dichlorobenzene	420	1300
1,3-Dichlorobenzene	320	960
1,4-Dichlorobenzene	63	190
3,3-Dichlorobenzidine (c)	0.21	0.28
Diethyl phthalate	17000	44000
Dimethyl phthalate	270000	1100000
Di-n-butyl phthalate	2000	4500
2,4-Dinitrotoluene (c)	1.1	34
1,2-Diphenylhydrazine (c)	0.36	2.0
Fluoranthene	130	140
Fluorene	1100	5300
Hexachlorobenzene (b)(c)	0.0028	0.0029
Hexachlorobutadiene (b)(c)	4.4	180
Hexachlorocyclohexane-Technical (b)(c)	0.123	0.414
Hexachlorocyclopentadiene	40	1100
Hexachloroethane (c)	14	33
Ideno(1,2,3-cd)Pyrene (c)	0.038	0.18
Isophorone (c)	350	9600
Nitrobenzene	17	690
Nitrosamines	0.0008	1.24
Nitrosodibutylamine (c)	0.063	2.2
Nitrosodiethylamine (c)	0.008	12.4
Nitrosopyrrolidine (c)	0.16	340
N-Nitrosodimethylamine (c)	0.0069	30
N-Nitrosodi-n-Propylamine (c)	0.05	5.1
N-Nitrosodiphenylamine (c)	33	60

Compound	Water & Organisms Criteria * (µg/L)	Organisms Only Criteria (µg/L)
Pyrene	830	4000
Pentachlorobenzene (b)	1.4	1.5
1,2,4,5-Tetrachlorobenzene (b)	0.97	1.1
1,2,4-Trichlorobenzene	35	70
2,4,5-Trichlorophenol	1800	3600
PESTICIDES		
Aldrin (c)	0.00049	0.00050
a-BHC (c)	0.026	0.049
b-BHC (c)	0.091	0.17
g-BHC - Lindane (b)	0.98	1.8
Chlordane (b)(c)	0.0080	0.0081
4-4'-DDT (b)(c)	0.0022	0.0022
4,4'-DDE (b)(c)	0.0022	0.0022
4,4'-DDD (b)(c)	0.0031	0.0031
Dieldrin (b)(c)	0.00052	0.00054
a-Endosulfan	62	89
b-Endosulfan	62	89
Endosulfan Sulfate	62	89
Endrin	0.059	0.06
Endrin Aldehyde	0.29	0.30
Heptachlor (c)	0.00079	0.00079
Heptachlor epoxide (c)	0.00039	0.00039
PCB, total (b)(c)	0.00064	0.00064
Toxaphene (b)(c)	0.0028	0.0028

(b) Bioaccumulative parameter.

(c) 10-5 risk level is used for all carcinogenic pollutants.

* These criteria are for protection of public health due to consumption of water and organisms and should only be applied to these waters designated for both recreation and domestic water supply.

** Total dioxin is the sum of the concentrations of all dioxin and dibenzofuran isomers after multiplication by Toxic Equivalent Factors (TEFs). Following are the TEFs currently recommended by EPA (subject to revision):

DIOXIN ISOMERS	TEF	FURAN ISOMERS	TEF
Mono-, Di-, & TriCDDs	0.0	Mono-, Di-, & TriCDFs	0.0
2,3,7,8 TCDD	1.0	2,3,7,8 TCDF	0.1
Other TCDDs	0.0	Other TCDFs	0.0
2,3,7,8 PeCDD	0.5	1,2,3,7,8 PeCDF	0.05
Other PeCDDs	0.0	2,3,4,7,8 PeCDF	0.5
		Other PeCDFs	0.0
2,3,7,8 HxCDD	0.1	Other PeCDFs	0.0
Other HxCDDs	0.0	2,3,7,8 HxCDF	0.1
		Other HxCDFs	0.0
2,3,7,8 HpCDD	0.01	2,3,7,8 HpCDF	0.01
Other HpCDDs	0.0	Other HpCDFs	0.0
OCDD	0.001	OCDF	0.001

(k) Other Pollutants - The waters shall not contain other pollutants in quantities which may have a detrimental effect on recreation.

(l) Fish Consumption Advisories - A public fishing advisory will be considered when the calculated risk of additional cancers exceeds 10 -4 for typical consumers or 10 -5 for atypical consumers (See definition). A "do not consume" advisory will be issued for the protection of typical consumers and a "precautionary advisory" will be issued for the protection of atypical consumers. The following formula will be used to calculate the risk of additional cancers:

$$R = qE$$

where:

R= Plausible-upper-limit risk of cancer associated with a chemical in a fisheries species for a human subpopulation.

q = Carcinogenic Potency Factor for the chemical (mg kg-1 day-1)-1 estimated as the upper 95 percent confidence limit of the slope of a linear dose-response curve. Scientifically defensible Potency Factors will be used.

E = Exposure dose of the chemical (mg kg-1 day-1) from the fish species for the human subpopulation in the area. E is calculated by the following formula:

$$E = \frac{C\,I\,X}{W} \quad \text{where:}$$

C = Concentration of the chemical (mg/kg) in the edible portion of the species in the area. The average levels from multiple fillet samples of the same species will be used. Catfish will be analyzed skin-off with the belly flap included in the sample. Gamefish and carp will be analyzed skin-on with the belly flap included in the sample. Sizes of fish collected for analysis will represent the ranges of sizes likely to be collected and consumed by the public. References on this subject include, but are not limited to: EPA's Guidance for Assessing Chemical Contaminant Data for use in Fish Advisories.

I = Mean daily consumption rate (g/day averaged over 70 year lifetime) of the fish species by the human subpopulation in the area. 6.5 g/day will be used unless better site-specific information is available.

X = Relative absorption coefficient, or the ratio of human absorption efficiency to test animal absorption efficiency of the chemical. Assumed to be 1.0 unless better information is available.

W = Average human mass (kg). 75 kg will be used.

For substances for which the public health concern is based on toxicity, a "do not consume" advisory will be considered warranted when average levels of the substance in the edible portion of fish exceed U.S. Food and Drug Administration (FDA) Action Levels or EPA national criteria. Based on the rationale used by FDA or EPA for their levels, the Commissioner may issue precautionary advisories at levels appropriate to protect sensitive populations.

(m) Flow – Stream flows shall support recreational uses.

(5) The criteria for the use of Irrigation are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not impair its use for irrigation.

(d) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water for irrigation purposes.

(e) Temperature - The temperature of the water shall not interfere with its use for irrigation purposes.

(f) Toxic Substances - The waters shall not contain toxic substances whether alone or in combination with other substances which will produce toxic conditions that adversely affect the quality of the waters for irrigation.

(g) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the waters used for irrigation.

(6) The criteria for the use of Livestock Watering and Wildlife are the following.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not impair its use for livestock watering and wildlife.

(d) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as to interfere with livestock watering and wildlife.

(e) Temperature - The temperature of the water shall not interfere with its use for livestock watering and wildlife.

(f) Toxic Substances - The waters shall not contain substances whether alone or in combination with other substances, which will produce toxic conditions that adversely affect the quality of the waters for livestock watering and wildlife.

(g) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the water for livestock watering and wildlife.

(7) The criteria for the use of Navigation are the following.

(a) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as to interfere with navigation.

(b) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the waters used for navigation.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.04 Definitions

In addition to the meanings provided in the Water Quality Control Act (T.C.A. § 69-3-103), terms used in these rules shall mean the following:

(1) Atypical consumers - Those persons in the vicinity of a stream or lake who due to physiological factors or previous exposure are more sensitive to specific pollutants than is the population in general. Examples of atypical consumers may include, but are not limited to: children; pregnant or nursing women; subsistence

fishermen; frequent purchasers of commercially harvested fish; and agricultural, industrial, or military personnel who may have had previous occupational exposure to the contaminant of concern.

(2) Conventional Water Treatment - Conventional water treatment as referred to in the criteria denotes coagulation, sedimentation, filtration, and chlorination or disinfection.

(3) Degradation - The alteration of the properties of waters by the addition of pollutants, withdrawal of water, or removal of habitat, except those alterations of a short duration.

(4) De Minimis degradation – Degradation of a small magnitude, as provided in this paragraph.

(a) Discharges and withdrawals

1. Subject to the limitation in part 3 of this subparagraph, a single discharge other than those from new domestic wastewater sources will be considered de minimis if it uses less than five percent of the available assimilative capacity for the substance being discharged.

2. Subject to the limitation in part 3 of this subparagraph, a single water withdrawal will be considered de minimis if it removes less than five percent of the 7Q10 flow of the stream.

3. If more than one activity described in part 1 or 2 of this subparagraph has been authorized in a segment and the total of the authorized and proposed impacts uses no more than ten percent of the assimilative capacity, or 7Q10 low flow, they are presumed to be de minimis. Where the total of the authorized and proposed impacts uses ten percent of the assimilative capacity, or 7Q10 low flow, additional degradation may only be treated as de minimis if the division finds on a scientific basis that the additional degradation has an insignificant effect on the resource.

(b) Habitat alterations authorized by an Aquatic Resource Alteration Permit (ARAP) are de minimis if the division finds that the impacts, individually and cumulatively are offset by impact minimization and/or in-system mitigation, provided however, in ONRWs the mitigation must occur within the ONRW.

(5) Ecoregion - A relatively homogeneous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.

(6) Epilimnion – The upper layer of water in a thermally stratified lake or reservoir. This layer consists of the warmest water and has a fairly uniform (constant) temperature.

(7) Ground water – Water beneath the surface of the ground within the zone of saturation, whether or not flowing through known and definite channels.

(8) Ground water table – The upper surface of the zone of saturation by ground water.

(9) Hypolimnion - The lowest layer in a thermally stratified lake or reservoir. This layer consists of colder, more dense water, has a constant temperature and no mixing occurs. The hypolimnion of a eutrophic lake is usually low or lacking in oxygen.

(10) Interflow – The runoff infiltrating into the surface soil and moving toward streams as shallow, perched water above the main ground-water level.

(11) Measurable degradation, as used in the context of discharges or withdrawals – Changes in parameters of waters that are of sufficient magnitude to be detectable by the best available instrumentation or laboratory analyses.

(12) Mixing Zone - That section of a flowing stream or impounded waters in the immediate vicinity of an outfall where an effluent becomes dispersed and mixed.

(13) Multiple populations – Two or more individuals from each of two or more distinct taxa, in the context of obligate lotic aquatic organisms.

(14) Normal weather conditions – Those within one standard deviation of the cumulative monthly precipitation means for at least the three months prior to the hydrologic determination investigation, based on a 30-year average computed at the end of each decade. Precipitation data shall come from National Oceanographic and Atmospheric Agency's National Climatic Data Center, National Resources Conservation Service's National Climatic Data Center, Natural Resources Conservation Service's National Water and Climate Center, or other well-established weather station.

(15) Obligate lotic aquatic organisms - Organisms that require flowing water for all or almost all of the aquatic phase of their life cycles.

(16) Parameter – A biological, chemical, radiological, bacteriological, or physical property of water that can be directly measured. Some criteria are expressed in terms of a single parameter; others, such as habitat, nutrients, and biological integrity are not directly measured, but are derived from measurements of parameters.

(17) Perched water – Water that accumulates above an aquitard that limits downward migration where there is an unsaturated interval below it, between the aquitard and the zone of saturation.

(18) Photic Zone - the region of water through which light penetrates and where photosynthetic organisms live.

(19) Reference condition - A parameter-specific set of data from regional reference sites that establish the statistical range of values for that particular substance at least-impacted streams.

(20) Reference Site - Least impacted waters within an ecoregion that have been monitored to establish a baseline to which alterations of other waters can be compared.

(21) Response Variable – a characteristic of water quality that can be measured and changes as a result of an alteration of habitat, water withdrawal, or discharge of pollutants, as distinguished from agents that cause changes in aquatic systems.

(22) Stratification – The tendency in lakes and reservoirs for distinct layers of water to form as a result of vertical change in temperature and, therefore, in the density of water. During stratification, dissolved oxygen, nutrients, and other parameters of water chemistry do not mix well between layers, establishing chemical as well as thermal gradients.

(23) Stream - A surface water that is not a wet weather conveyance.

(24) Subecoregion - A smaller, more homogenous area that has been delineated within an ecoregion.

(25) Thermocline – The middle layer in a thermally stratified lake or reservoir. In this layer there is a rapid decrease in temperature with depth. Also called the metalimnion.

(26) Wadeable streams - Streams that can be sampled using a hand held, one meter square or smaller kick net without water and materials escaping over the top of the net.

(27) Watercourse - A man-made or natural hydrologic feature with a defined linear channel which discretely conveys flowing water, as opposed to sheet-flow.

(28) Wet weather conveyance - Man-made or natural watercourses, including natural watercourses that have been modified by channelization:

(a) That flow only in direct response to precipitation runoff in their immediate locality;

(b) Whose channels are at all times above the ground water table;

(c) That are not suitable for drinking water supplies; and

(d) In which hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at

least two months.

(29) Wet weather conveyance determination - The decision based on site specific information of whether a particular watercourse is a stream or a wet weather conveyance. It is synonymous with "stream determination" and "hydrologic determination."

(30) Zone of saturation – A subsurface zone below the ground water table in which all of the interconnected voids and pore spaces are filled with water.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.05 Interpretation of Criteria

(1) Interpretation of the above criteria shall conform to any rules and regulations or policies adopted by the Board of Water Quality, Oil and Gas.

(2) The effect of treated sewage or waste discharge on the receiving waters shall be considered beyond the mixing zone except as provided in this paragraph. The extent to which this is practicable depends upon local conditions and the proximity and nature of other uses of the waters. Such mixing zones (See definition) shall be restricted in area and length and shall not (i) prevent the free passage of fish or cause aquatic life mortality in the receiving waters; (ii) contain materials in concentrations that exceed acute criteria beyond the zone immediately surrounding the outfall; (iii) result in offensive conditions; (iv) produce undesirable aquatic life or result in dominance of a nuisance species; (v) endanger the public health or welfare; or (vi) adversely affect the reasonable and necessary uses of the area; (vii) create a condition of chronic toxicity beyond the edge of the mixing zone; (viii) adversely affect nursery and spawning areas; or (ix) adversely affect species with special state or federal status.

(3) The technical and economical feasibility of waste treatment, recovery, or adjustment of the method of discharge to provide correction shall be considered in determining the time to be allowed for the development of practicable methods and for the specified correction, to the extent allowable under Rule 1200-04-03-.06(5).

(4) Water quality criteria for fish and aquatic life and livestock watering and wildlife set forth shall generally be applied on the basis of the following stream flows: unregulated streams - stream flows equal to or exceeding the 7-day minimum, 10-year recurrence interval; regulated streams - all flows in excess of the minimum critical flow occurring once in ten years as determined by the division. However, criteria that are wholly or partially based on measurements of ambient aquatic community health, such as the nutrient, biological integrity, and habitat criteria for the fish and aquatic life use, shall support the designated use. These criteria should be considered independent of a specified minimum flow duration and recurrence. All other criteria shall be applied on the basis of stream flows equal to or exceeding the 30 day minimum 5 year recurrence interval.

(5) In general, deviations from normal water conditions are undesirable, but the frequency, magnitude and duration of the deviations shall be considered in interpreting the above criteria. When interpreting pathogen data, samples collected during or immediately after significant rain events may be treated as outliers unless caused by point source dischargers. Such outlier data may be given less weight in assessment decisions than non-rain event sampling results.

(6) The criteria and standards provide that all discharges of sewage, industrial waste, and other waste shall receive the degree of treatment or effluent reduction necessary to comply with water quality standards, or state or federal laws and regulations pursuant thereto, and where appropriate will comply with the "Standards of Performance" as required by the Tennessee Water Quality Control Act, (T.C.A., §§69-3-101, et seq.).

(7) Where naturally formed conditions (e.g., geologic formations) or background water quality conditions are substantial impediments to attainment of the water quality standards, these natural or background conditions shall be taken into consideration in establishing any effluent limitations or restrictions on discharges to such waters. For purposes of water quality assessment, exceedances of water quality standards caused by natural conditions will not be considered the condition of pollution.

(8) There are cases in which the in-stream criteria as established by this rule are less than current chemical

technological capabilities for analytical detection. In instances where permit limits established through implementation of these criteria are below analytical capabilities, compliance with those limits will be determined using the following reporting limits, unless in specific cases other reporting limits are demonstrated to be the best achievable because of the particular nature of the wastewater being analyzed. Such a demonstration shall be made at the time results are submitted and shall affirm that using methods, personnel, training, and equipment appropriate to reach applicable required reporting levels (RRLs), the laboratory was unable to do so due to the nature of the sample. The methods, equipment, and general nature of the interference shall be provided. Inability to accurately quantify the level of a contaminant shall not be acceptable grounds for a higher reporting level if the permit requirement is based on detection/non-detection.

REQUIRED REPORTING LEVELS [RRL] (µg/l)
Approved EPA Methods Must Be Used)

INORGANICS	RRL
Antimony	3.0
Arsenic, total (c)	1.0
Arsenic (III) (c)	1.0
Beryllium (c)	1.0
Cadmium	1.0
Chromium, total	1.0
Chromium (III)	1.0
Chromium (VI)	10.0
Copper	1.0
Lead	1.0
Mercury	0.2
Nickel	10.0
Selenium	2.0
Silver	1.0
Zinc	1.0
Cyanide	5.0
Dioxin	0.00001

BASE NEUTRALS	RRL
Acenaphthylene (c)	2.3
Anthracene	0.7
Benzo(a)anthracene (c)	0.3
Benzo(a)pyrene (c)	0.3
3,4-Benzofluoranthene (c)	0.3
Benzo(k)fluoranthene (c)	0.3
Bis(2-Chloroethyl)ether (c)	1.0
Bis(2-Ethylhexyl)phthalate(c)	2.5
Chrysene	2.5
1,2-Dichlorobenzene	2.0
1,3-Dichlorobenzene	2.0
1,4-Dichlorobenzene - para-Dichlorobenzene	4.4
Diethyl phthalate	1.9
Dimethyl phthalate	1.6
Di-n-Butyl phthalate	2.5
2,4-Dinitrotoluene (c)	1.0
Fluoranthene	2.2

INORGANICS	RRL
VOLATILES	
Acrolein	1.0
Acrylonitrile (c)	1.0
Benzene (c)	1.0
Bromoform - Tribromomethane (c)	1.0
Carbon tetrachloride (c)	1.0
Chloroform - Trichloromethane (c)	0.5
Dichlorobromomethane (c)	1.0
1,2-Dichloroethane (c)	1.0
1,1-Dichloroethylene (c)	1.0
1,3-Dichloropropylene	1.0
Ethylbenzene	1.0
Methyl chloride - Chloromethane (c)	1.0
Methylene chloride - Dichloromethane (c)	1.0
1,1,2,2-Tetrachloroethane (c)	0.5
Tetrachloroethylene (c)	0.5
Toluene	1.0
1,1,1-Trichloroethane	1.0
1,1,2-Trichloroethane (c)	0.2
Trichloroethylene (c)	1.0

BASE NEUTRALS	RRL
Fluorene	0.3
Hexachlorobenzene (c)	1.9
Hexachlorobutadiene (c)	5.0
Hexachloroethane (c)	0.5
Nitrobenzene	10.0
Phenanthrene	0.7
Pyrene	0.3
PESTICIDES	
Aldrin (c)	0.5
g-BHC - Lindane (c)	0.5
Chlordane (c)	0.1
4-4'-DDT (c)	0.1
4,4'-DDE (c)	0.1
4,4'-DDD (c)	0.1
Dieldrin (c)	0.05
a-Endosulfan	0.1
b-Endosulfan	0.05
Endrin	0.1
Heptachlor (c)	0.05
Heptachlor epoxide (c)	0.08
PCB-1242 (c)	0.5
PCB-1254 (c)	0.5
PCB-1221 (c)	0.5
PCB-1232 (c)	0.5

Vinyl chloride (c)	2.0	PCB-1248 (c)	0.5
		PCB-1260 (c)	0.5
ACID EXTRACTABLES		PCB-1016 (c)	0.5
2-Methyl-4,6-dinitrophenol-		PCB, total (c)	0.5
4,6-Dinitro-o-cresol	24.0	Toxaphene (c)	0.5
2,4-Dinitrophenol	42.0		
Pentachlorophenol	5.0		
2,4,6-Trichlorophenol (c)	2.7		

(c) carcinogen

(9) Standard operating procedures for making stream and wet weather conveyance determinations (hydrologic determinations)

(a) General

1. Because a primary purpose of the Water Quality Control Act is to protect the waters of the state for the public, and since streams receive a higher level of protection than wet weather conveyances, anyone desiring to alter a watercourse who wishes to avoid unnecessary expense and delay, may request the department to process a permit application or issue an authorization under a general permit with the presumption that the watercourse is a stream. In that instance, a full hydrologic determination would not be performed under these rules. However, nothing shall preclude an applicant from subsequently seeking a wet weather conveyance determination.

2. The procedures detailed in this rule are intended to be used in situations where there is some question whether a watercourse is a stream or wet weather conveyance. In situations where it is obvious that a watercourse is a stream, such as named rivers or streams with watersheds larger than a square mile, or spring-fed streams with consistent flow greater than one cubic foot per second, it is not necessary to conduct a detailed hydrologic determination.

3. It is the purpose of this rule to set out the framework for making stream and wet weather conveyance determinations taking into consideration all relevant and necessary information on the biology, geology, geomorphology, precipitation, hydrology, and other scientifically based principles. Staff of the department and certified hydrologic professionals not employed by the department who are making a submission pursuant to §69-3-108(r) shall follow these rules and the Guidance for Making Hydrologic Determinations (Guidance) which contains the instructions and examples for proper application of these rules to situations in the field that has been developed pursuant to §69-3-107(25) in making these determinations.

4. The format for documenting these determinations is provided in the Hydrologic Determination Field Data Sheet (Data Sheet) in the Guidance. All available field characteristics necessary to make an accurate determination shall be evaluated, and all evidence utilized in making a determination shall be documented using the Data Sheet or as an addendum. Applicants may choose to submit additional hydrological or geotechnical data not included in the standard procedure in support of a hydrologic determination. Any additional relevant information submitted to the department shall be considered by the division in its determination.

5. Any significant revision to the Data Sheet or Guidance shall be subject to a thirty-day public comment period prior to adoption. The department shall advertise its intent to modify the Data Sheet or Guidance by posting notice of proposed changes on the department's internet web site and by sending to the permit mailing list. Significant modifications include the addition or deletion or substantive modification of either the primary or secondary indicators or a change in the scoring system. The department shall consider the need for modifications to the Data Sheet and Guidance periodically and whenever a significant comment is submitted in regard to them.

6. To be classified as a wet weather conveyance, a watercourse must meet all four elements of the definition in §69-3-103. Therefore, if it is determined that any one of the four elements does not apply to a watercourse, the watercourse is a stream.

7. Because natural variation and human activities can alter hydrologic conditions over time, hydrologic determination will only be considered valid for a maximum of five years or the term of a permit based on it.

8. Because there can be considerable variability within a given reach of a watercourse, wet weather conveyance determinations should not be made on a single point but must also investigate up and down channel and consider the watercourse's landscape context.

9. All of the indicators referred to in these rules and the Guidance are evidence relevant to the presence or absence of one or more of the four elements of the wet weather conveyance definition. The difference between the primary and secondary indicators is that each of the primary indicators is considered presumptive evidence alone regarding one or more of the four elements, and will allow for an immediate hydrologic determination to be made in most cases. Some of the primary indicators involve direct observations of the presence or absence of one or more of the elements. The primary indicators of wet weather conveyances are:

   (i) hydrologic feature exists solely due to a process discharge,

   (ii) defined bed and bank absent, watercourse dominated by upland vegetation/ grass,

   (iii) watercourse dry anytime during February through April 15th under normal precipitation/ ground water conditions, and

   (iv) daily flow and precipitation records showing feature only flows in direct response to rainfall.

10. Primary indicators of streams are:

   (i) presence of multiple populations of obligate lotic organisms with two months or longer aquatic phase,

   (ii) presence of fish (except Gambusia),

   (iii) presence of naturally occurring ground water table connection,

   (iv) flowing water in channel seven days or more since the last precipitation in the local watershed, and

   (v) evidence watercourse has been used as a supply of drinking water.

11. When primary indicators cannot be observed or documented, then the investigator must evaluate the watercourse using secondary indicators. The secondary indicators are an aggregate set of observations that in total are used to evaluate the presence or absence of one or more of the elements of a wet weather conveyance. Secondary indicators are:

   (i) continuous bed and bank,

   (ii) sinuous channel,

   (iii) in-channel structure, riffle-pool sequences,

   (iv) sorting of soil textures or other substrate,

   (v) active/relic floodplain,

(vi) depositional bars or benches,

(vii) braided channel,

(viii) recent alluvial deposits,

(ix) natural levees,

(x) headcuts,

(xi) grade controls,

(xii) natural valley draingeway,

(xiii) at least second order channel on United States Geological Survey or Natural Resources Conservation Service map,

(xiv) subsurface flow/discharge into channel,

(xv) water in channel more than forty-eight hours since rain,

(xvi) leaf litter in channel,

(xvii) sediment on plants or on debris,

(xviii) organic debris lines or piles (wrack lines),

(xix) hydric soils in channel bed or sides,

(xx) fibrous roots in channel,

(xxi) rooted plants in channel,

(xxii) crayfish in channel (exclude in floodplain),

(xxiii) bivalves/mussels,

(xxiv) amphibians,

(xxv) macrobenthos,

(xxvi) filamentous algae, periphyton,

(xxvii) iron-oxidizing bacteria/fungus, and

(xxviii) wetland plants in channel.

12. The secondary indicators shall be scored in accordance with the instructions in the Guidance. Hydrologic determinations will often be made on the basis of secondary indicators because none of the primary indicators is present at the time of investigation. Any of the primary indicators contained in these rules and the Guidance may be considered conclusive after consideration of appropriate background information including recent weather and precipitation, in the absence of any directly contradictory evidence. However, since hydrologic determinations are required to be made at all times of year, secondary indicators of hydrologic status will be used, in accordance with the Guidance and these rules, as determinant evidence in the absence of primary indicators. The secondary indicators used in the Guidance shall be based on sound scientific principles.

13. Watercourses in which flow is solely a result of process or wastewater discharge or other non-natural sources shall not be regulated as streams even though they may exhibit characteristics of a stream rather than a wet weather conveyance.

(b) The specific procedures outlined herein are intended to consider each of the four elements necessary for a watercourse to be classified as a wet weather conveyance.

1. Because the duration of the flow in a watercourse is the central inquiry of hydrologic determinations, all of the primary and secondary indicators are relevant to evaluating it. Although other factors may also be relevant, at a minimum the following procedures shall be used to determine if a watercourse flows only in direct response to precipitation runoff in its immediate vicinity.

(i) Prior to conducting a field evaluation, the investigator should review recent precipitation patterns for the local area, the longer-term seasonal precipitation trends, and any other available information such as historic land use, regional geology and soil types, or previous hydrologic determinations near the site to be investigated.

(ii) The investigator must decide if the determination is being conducted under "normal weather conditions." The procedure for determining if weather conditions are normal, or either wetter or drier than normal, is contained in the Guidance. If conditions are either wetter or drier than normal the investigator must take this into consideration in making a hydrologic determination.

(iii) The vast majority of wet weather conveyances will generally cease to flow within 48 hours of almost all except some of the largest rain events. This is especially true in urbanized, impervious areas, or other areas with low infiltration rates, such as mowed lawns. The investigator shall document the presence or absence of flow within the watercourse. If in-stream surface flow is observed within the evaluated reach, and it has been at least seven days since the last rainfall event in the upstream watershed, the flow will not be considered a direct storm response, and the investigator shall conclude that the feature is a stream. The investigator shall document the source of the precipitation data. The source used shall be as close as feasible to the watercourse.

(iv) When subsurface water discharges such as seeps, interstitial flow, perched water, or interflow are observed and used as indicators of hydrology, investigators shall consider the influence of recent precipitation events and localized soil and geologic conditions on these features to determine if these features provide adequate hydrology such that the watercourse flows more than in direct response to precipitation. For example, since some such features have more flow when there has been significant recent precipitation, if they are flowing when there has not been much recent precipitation, it is more likely that they flow for sustained periods. In some instances, there may be observable outcroppings of a confining layer such as shale or clay that causes interstitial flow to discharge to a watercourse. In this situation, the capacity of up-gradient conditions such as the permeability and volume of the soils above the confining layer to sustain extended periods of surface flow should be considered. These types of sustained discharges should not be considered a direct response to rainfall. In other instances, such as in areas with a highly karst geology, observed seeps into a watercourse may be not be able to sustain extended periods of flow, and may be considered a more direct response to rainfall.

(v) Field investigations for hydrologic determinations should not be conducted if a one-inch precipitation event in 24 hours has occurred in the area of investigation within the previous 48 hours.

2. The following procedures are to determine if the channel is above the ground water table at all times. Under the definition of wet weather conveyance in T.C.A. §69-3-103, if there are any times that the channel is not above the ground water table, it is a stream.

(i) Since larger streams and rivers are frequently in contact with the ground water table, the investigator shall review topographic maps to determine if the watercourse is within the floodplain of, or within twenty feet in elevation of a larger stream or river known to carry perennial flow. Flow in such a watercourse should not be considered conclusive evidence of a ground water table connection, but is contributing evidence to be considered in the determination. Therefore further investigation into additional factors including those listed below is necessary to determine that the watercourse in question is in contact with the ground water table.

(ii) Since the presence of wetlands often indicates a shallow depth to the ground water table, the investigator shall search for the presence of wetlands in the immediate vicinity of the watercourse both on topographic maps and in the field. The presence of wetlands in the vicinity of the watercourse being examined should not be considered conclusive evidence of a ground water table connection, but is contributing evidence to be considered in the determination. Therefore further investigation into other factors including those listed below is necessary to determine that the watercourse in question is in contact with the ground water table.

(iii) The investigator shall review United States Department of Agriculture soil surveys. Their soil descriptions often contain information on depth to water table. For watercourses whose channels are at a depth that indicates contact with the ground water table for the soil type in which they are formed, the investigator can conclude that the watercourse is in contact with the water table, absent contradicting field information.

(iv) The investigator shall review site geological characteristics affecting the elevation of the ground water table with respect to the elevation of the channel, including the presence of karst bedrock features, erodibility of watershed soils, thickness of regolith and channel alluvium, depth to bedrock or laterally persistent silt or clay horizons, land-use disturbances, and other watershed conditions controlling or contributing to the presence or absence of channel base flow.

(v) If data are available from water wells within one mile of and in similar landscape position to a watercourse under investigation, and if the surface elevation of standing water in the well is at or above the elevation of the bottom of the channel of the watercourse, then the investigator can conclude that the watercourse is in contact with the ground water table.

(vi) The observed emergence of water from the ground is not necessarily water from the ground water table and should not be considered as conclusive for the purpose of this element. Therefore further investigation into factors including those listed above is necessary to determine the source of the emergent water.

3. The following procedures are to determine if a watercourse is suitable for drinking water supplies. The investigator should note spring boxes, water pipes to carry water from the watercourse to a residence, or other observable evidence the watercourse is being used as a household water supply upstream of or within the segment being evaluated. When these features are noted, the investigator can conclude that the watercourse is a stream absent contradicting information.

4. The following procedures are to determine if a watercourse, under normal weather conditions, due to naturally occurring ephemeral or low flow does not have sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months.

(i) The presence of the requisite aquatic life is a primary indicator that the watercourse supports that aquatic life. In order to find that the requisite aquatic life is present, the investigator must document more than one individual of at

least two qualifying taxa in the evaluated reach under normal weather conditions. Unhatched eggs or any other stage of a taxon's life cycle that could be found in a wet weather conveyance or lentic habitat (such as a deceased winged adult) should not be considered as a primary indicator that a watercourse is a stream. The specific taxa found should be noted on the Data Sheet. Representative individuals of the taxa used to make this determination should be collected for confirmation of identification. All aquatic life observed should be noted, even if some do not qualify as primary indicators. These organisms may also be relevant as secondary field indicators.

(ii) Indigenous members of taxa within the benthic macroinvertebrate groups listed below are obligate lotic aquatic organisms and thus are primary indicators that a watercourse is a stream when two or more specimens of two or more taxa are documented under normal weather conditions.

(I) Gastropoda: Pleuroceridae, Viviparidae, Valvatidae

(II) Bivalvia: Unionidae

(III) Coleoptera: Dryopidae, Elmidae, Psephenidae, Ptilodactylidae, Staphylinidae

(IV) Diptera: Athericidae, Blephariceridae, Chironomidae (except: Chironomini or red midges), Empididae, Ptychopteridae, Tanyderidae, and some Tipulidae (Antocha, Rhabdomastix, Dicranota, Hexatoma, Limnophila, Tipula)

(V) Ephemeroptera: all members, except: Siphlonuridae, and some Ephemeridae (Hexagenia)

(VI) Megaloptera: all members, except: Chauliodes

(VII) Odonata: Aeshnidae, Calopterygidae, Cordulegastridae, Gomphidae, some Coenagrionidae (Argia, Chromagrion, Amphiagrion), some Libellulidae (Perithemis) and some Corduliidae (Epitheca, Helocordulia, Neurocordulia)

(VIII) Plecoptera: all members

(IX) Trichoptera: all members, except: Molannidae, some Leptoceridae (Nectopsyche, Triaenodes), and some Limnephilidae (Ironoquia, Limnephilus, Hesperophylax)

(X) Oligochaetes: Branchiobdellidae, Lumbriculidae, Sparganophilidae, some Tubificidae (subfamily Naidinae, Ilyodrilus, Rhyacodrilus, Varichaetadrilus), and some Lumbricidae (Eiseniella tetraedra only).

(iii) The presence of any indigenous fish species, other than the Mosquitofish (*Gambusia*), documented under normal weather conditions, is also a primary indicator that the watercourse is a stream, and constitutes support of the requisite aquatic life.

(iv) There are conditions in which a stream may be dry for a period of weeks or even months, but supports multiple populations of lotic aquatic organisms or fish at other times during a year. In such conditions, an investigator could appropriately determine that there is sufficient water on an annual basis to support such populations even though there were not any present on a particular date. In addition, manmade pollution or other water quality issues may preclude support of these organisms. Therefore, the absence of lotic aquatic organisms at the time of the investigation cannot be the sole basis for a determination that a watercourse meets the fourth element of the definition. When multiple

populations of lotic aquatic organisms or fish cannot be documented to occur in a watercourse, then the investigator must consider the hydrologic and biologic factors referred to as secondary indicators in these rules and the Guidance to make a hydrologic determination.

(v) Under normal weather conditions, if the investigator documents the absence of water due to naturally occurring conditions in a watercourse between February 1 and April 15, then the investigator can conclude the watercourse is unable to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months and is therefore a wet weather conveyance.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.06 Antidegradation Statement

(1) General

(a) It is the purpose of Tennessee's standards to fully protect existing uses of all surface waters as established under the Act. Existing uses are those actually attained in the waterbody on or after November 28, 1975. Additionally, the Tennessee Water Quality Standards shall not be construed as permitting the degradation (see definition) of high quality surface waters. Where the quality of Tennessee waters is better than the level necessary to support propagation of fish, shellfish, and wildlife, or recreation in and on the water, that quality will be maintained and protected unless the state finds, after intergovernmental coordination and public participation, that lowering water quality is necessary to accommodate important economic or social development in the area in which the waters are located. Sources exempted from permit requirements under the Water Quality Control Act should utilize all cost-effective and reasonable best management practices. Where new or increased temperature alterations are proposed, a successful demonstration as determined by the state under Section 316(a) of the Clean Water Act, 33 U.S.C. §1326, shall be considered to be in compliance with this rule.

(b) To apply this antidegradation statement in the permitting context, the Department shall first determine if the application is complete. Absent extraordinary circumstances, the Department shall notify the applicant that an application is complete or of any deficiencies within 30 days of receipt of the application.

1. A complete application will include all of the information requested on the forms provided by the Department. For activities other than new domesic wastewater discharges, a complete application will include the applicant's basis for concluding that the proposed activity:

(i) will not cause measurable degradation, or

(ii) will only cause de minimis degradation, or

(iii) will cause more than de minimis degradation.

2. If the proposed activity will cause degradation above a de minimis level or if it is a new discharge of domestic wastewater, a complete application will:

(i) analyze all reasonable alternatives and describe the level of degradation caused by each of the feasible alternatives;

(ii) discuss the social and economic consequences of each alternative; and

(iii) demonstrate that the degradation will not violate the water quality criteria for uses existing in the receiving waters and is necessary to accommodate important economic and social development in the area.

3. Such alternatives analyses shall include, at a minimum, completed and accurate Worksheets A and B for public sector applicants or Worksheets A and G for private system applicants, or shall provide alternative information subject to approval by the Department. Additionally, to provide information to the Department regarding the applicant's claim of economic or social necessity, public sector applicants shall provide the relevant information from Forms O, P, Q, S, T, U, and AA, found in the EPA guidance document (Economic Guidance); private sector applicants shall provide the relevant information from Forms O, R, V, W, X, Y, Z, and AB, found in the EPA guidance document (Economic Guidance). Either type of applicant shall submit alternative or additional information regarding economic or social necessity as directed by the Department. These forms are found in the EPA guidance document entitled Interim Economic Guidance for Water Quality Standards: Workbook (EPA 823/B-95-002) (Economic Guidance). Reasonable alternatives for the various activities include, but are not limited to the following actions.

(i) Alternatives for discharges include connection to an existing collection system, land application, water reuse, water recycling, or other treatment alternatives. For small domestic discharges, connection to an existing system or land application will be considered preferable.

(ii) For water withdrawals, alternatives include water conservation, water reuse or recycling, off-stream impoundments, water harvesting during high flow conditions, regionalization, withdrawing water from a larger waterbody, use of ground water, connection to another water supply with available capacity, and pricing structures that encourage a reduction in consumption.

(iii) For activities that cause habitat alterations, alternatives that avoid or minimize degradation should be explored and explained by the applicant. These avoidance or minimization activities could include maintaining or enhancing buffer zones, bridging a stream rather than culverting it, altering the footprint of a project instead of relocating a stream, or using a culvert without a bottom, instead of one that is fully concreted.

(c) When the Department determines that a permit application is complete, it shall notify the applicant by letter or email and shall notify the public and the state and federal agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and historic preservation by posting a notice on the department's web site and sending email to persons who have asked to be notified of permit actions. In the case of habitat alterations or water withdrawals this notice shall be a part of the public notice of a permit application under paragraph (4) of Rule 1200-04-07-.04 and shall contain the information required by that paragraph of the rules. For a discharge, the notice shall summarize the information given by the applicant pursuant to subparagraph (b) of this paragraph.

(d) Next, the Department shall determine the level of degradation that would occur as a result of the proposed activity. Not all activities cause an addition of pollutants, diminish flows, or impact habitat.

1. In the case of discharges, if the department determines that no measurable degradation will occur as a result of the activity, no further review under this rule (1200-04-03-.06) is required regardless of the antidegradation classification of the receiving stream, unless the activity:

(i) is a new domestic wastewater discharge, or

(ii) introduces a parameter identified as bioaccumulative, or

(iii) introduces a parameter with a criterion below the current method detection level for that substance, or

(iv) is proposed to occur in an ONRW.

2. In the case of water withdrawals requiring permits from waters other than ONRWs, if the department determines that no measurable degradation will occur, no further review under this rule (1200-04-03-.06) is required regardless of the antidegradation classification of the receiving stream.

3. In the case of habitat alterations, if the department determines that no degradation or only de minimis degradation will occur, no further review under the rule (1200-04-03-.06) is required regardless of the antidegradation classification of the receiving stream.

(e) If the steps described in subparagraphs (b), (c) and (d) of this paragraph do not conclude the review under this rule (1200-04-03-.06), the Department shall determine whether the waters impacted by the activity are ones with available parameters, unavailable parameters, Exceptional Tennessee Waters, or Outstanding National Resource Waters, or if they are in more than one category. For example, a stream segment may be unavailable for one parameter and be available for others and Exceptional Tennessee Waters may also be unavailable for certain parameters. If an activity is proposed in a waterbody that is in more than one category, it must meet all of the applicable requirements.

(2) Waters with unavailable parameters

Unavailable parameters exist where water quality is at, or fails to meet, the levels specified in water quality criteria in Rule 1200-04-03-.03. In the case of a criterion that is a single response variable or is derived from measurement of multiple response variables, the unavailable parameters shall be the agents causing water quality to be at or failing to meet the levels specified in criteria. For example, if the biological integrity criterion (derived from multiple response variables) is violated, the unavailable parameters shall be the pollutants causing the violation, not the response variables.

(a) In waters with unavailable parameters, new or increased discharges that would cause measurable degradation of the parameter that is unavailable shall not be authorized. Nor will discharges be authorized in such waters if they cause additional loadings of unavailable parameters that are bioaccumulative or that have criteria below current method detection levels.

(b) In waters with unavailable parameters, no new or expanded water withdrawals that will cause additional measurable degradation of the unavailable parameter shall be authorized.

(c) Where one or more of the parameters comprising the habitat criterion are unavailable, activities that cause additional degradation of the unavailable parameter or parameters above the level of de minimis shall not be authorized.

(3) Waters with available parameters

Available parameters exist where water quality is better than the levels specified in water quality criteria in Rule 1200-04-03-.03.

(a) In waters with available parameters, new or increased discharges that would cause degradation above the level of de minimis for any available parameter for any criterion will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and the degradation will not violate the water quality criteria for uses existing in the receiving waters.

(b) In waters with available parameters, new or expanded water withdrawals that would cause degradation above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters.

(c) In waters with available parameters, an activity that would cause degradation of habitat above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water

quality criteria for uses existing in the receiving waters.

(4) Exceptional Tennessee Waters

(a) Exceptional Tennessee Waters are waters that are in any one of the following categories:

1. Waters within state or national parks, wildlife refuges, forests, wilderness areas, or natural areas;

2. State Scenic Rivers or Federal Wild and Scenic Rivers;

3. Federally-designated critical habitat or other waters with documented non-experimental populations of state or federally-listed threatened or endangered aquatic or semi-aquatic plants, or aquatic animals;

4. Waters within areas designated as Lands Unsuitable for Mining pursuant to the federal Surface Mining Control and Reclamation Act where such designation is based in whole or in part on impacts to water resource values;

5. Waters with naturally reproducing trout;

6. Waters with exceptional biological diversity as evidenced by a score of 40 or 42 on the Tennessee Macroinvertebrate Index (or a score of 28 or 30 in subecoregion 73a) using protocols found in TDEC's 2011 Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys, provided that the sample is considered representative of overall stream conditions; or

7. Other waters with outstanding ecological, or recreational value as determined by the Department. When application of this provision is a result of a request for a permit, such preliminary determination is to be made within 30 days of receipt of a complete permit application.

(b) The Department will maintain a list of waterbodies that have been reviewed and are known to have one or more of the above characteristics on its website and will make paper copies of that list available upon request.

(c) Authorization of Activities in Exceptional Tennessee Waters

1. In waters identified as Exceptional Tennessee Waters new or increased discharges that would cause degradation of any available parameter above the level of de minimis and discharges of domestic wastewater will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters. At the time of permit renewal, previously authorized discharges, including upstream discharges, which presently degrade Exceptional Tennessee Waters above a de minimis level, will be subject to a review of updated alternatives analysis information provided by the applicant, but not to a determination of economic/social necessity. Public participation for these existing discharges will be provided in conjunction with permitting activities. Sources exempted from permit requirements under the Water Quality Control Act should utilize all cost-effective and reasonable best management practices.

2. In waters identified as Exceptional Tennessee Waters, new or increased water withdrawals that would cause degradation of any available parameter above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters.

3. In waters identified as Exceptional Tennessee Waters, an activity that would cause

degradation of habitat above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that reasonable alternatives to degradation are not feasible and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters.

(d) Determination of Economic/Social Necessity - The Department's determination that degradation of Exceptional Tennessee Waters resulting from a proposed discharge, habitat alteration or water withdrawal is, or is not, necessary to accommodate important economic and social development in the area shall be subject to review by the Board of Water Quality, Oil and Gas under the following procedures.

1. If the Department determines that an activity that would cause degradation above a de minimis level of Exceptional Tennessee Waters is necessary to accommodate important economic or social development in the area, it shall give notice to the applicant, the public, and federal and state agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and advisory councils for historic preservation. In the case of an application for a discharge, this notice may be combined with the notice of a draft permit under Rule 1200-04-05-.06. In the case of an application for a habitat alteration or water withdrawal, this notice shall be given by being posted on the department's web site and by sending email to persons who have asked to be notified of permit actions. Within 30 days after the date of the notification, any affected intergovernmental coordination agency or affected third person may petition the Board for a declaratory order under Tennessee Code Annotated § 4-5-223, and the Board shall convene a contested case. After the Board has convened a contested case in response to a declaratory order petition under this part, the Department shall within 5 business days thereafter transmit the petition to the Administrative Procedures Division of the Secretary of State so the contested case may be docketed and an administrative law judge may be assigned to the case. If a declaratory order petition is timely filed, the Department shall not proceed further in processing the permit application until the petition has been resolved before the Board. In the contested case, the petitioner shall have the burden of proof, and the Department's determination shall carry no presumption of correctness before the Board. The applicant is a necessary party to the declaratory order contested case, and if the applicant does not participate in the contested case, the Board shall render a decision that degradation is not necessary to accommodate important economic or social development in the area. If no intergovernmental coordination agency or third person petitions for a declaratory order within 30 days of the notification date, or if one is filed after the 30 days expires, then the Department shall proceed with processing the permit application.

2. A declaratory order contested case conducted under this subparagraph shall be subject to the following procedures. Mediation may occur if all the parties agree. Any proposed agreed order resulting from mediation shall be subject to approval by the Board. In order to provide for an expedited proceeding, the contested case is subject to the following time limitations. The time periods specified in this part shall commence on the day after the contested case has been docketed by the Administrative Procedures Division of the Secretary of State and an administrative law judge has been assigned to the case. Any alteration of the time periods set out in this part shall be granted only upon agreement of all the parties, or when there have been unforeseen developments that would cause substantial prejudice to a party, or when the parties have agreed to mediation. Within 20 days, the parties shall confer to try and develop a proposed agreed scheduling order. If the parties are unable to agree, then each party shall submit a proposed scheduling order, and the administrative law judge, after a hearing, shall enter a scheduling order. All discovery shall be completed no later than 20 days prior to the date the hearing before the Board is to begin. Within 120 days, the hearing before the Board shall begin, but the Board on its own initiative may exceed 120 days to complete the hearing and render its final decision. In order for degradation of Exceptional Tennessee Waters to proceed pursuant to these rules, the Board must make a finding approving degradation by a majority vote of the members of the Board present and voting.

3. If the Department determines that degradation is not necessary to accommodate

important economic or social development in the area, it will notify the applicant, the federal and state agencies with jurisdiction over fish, wildlife, shellfish, plant and wildlife resources, parks, and advisory councils for historic preservation, and third persons who have asked to be notified of permit actions. The Department also will issue a tentative decision to deny the permit because degradation is not necessary. In accordance with paragraph (4) of Rule 1200-04-05-.06, the Department will provide the public with notice of and an opportunity to comment on its tentative denial decision. If no public hearing is requested within the 30 day public comment period, and if the Department does not alter its tentative decision to deny, the Department shall notify the applicant of its final decision to deny the permit because degradation is not necessary. Within 30 days after receiving notice of the final decision to deny the permit, the applicant may seek review of the decision that the degradation is not necessary to accommodate important economic or social development in the area in a contested case before the Board in accordance with Tennessee Code Annotated § 69-3-105(i). Within 5 business days after the Department receives an applicant's written request for a contested case hearing before the Board, the Department shall transmit the written request to the Administrative Procedures Division of the Secretary of State so the contested case may be docketed and an administrative law judge may be assigned to the case. In the contested case, the applicant shall have the burden of proof, and the Department's determination shall carry no presumption of correctness before the Board. The federal and state intergovernmental coordination agencies, and third persons who requested notification of the Department's degradation determination will be notified by the Department of the applicant's permit appeal. The intergovernmental coordination agencies and third persons may seek to intervene in the contested case in accordance with Tennessee Code Annotated § 4-5-310.

(5) Outstanding National Resource Waters

(a) The following streams or portions of streams are designated as ONRW:

	WATERBODY	PORTION DESIGNATED AS ONRW
1.	Little River	Portion within Great Smoky Mountains National Park.
2.	Abrams Creek	Portion within Great Smoky Mountains National Park.
3.	West Prong Little Pigeon River	Portion within Great Smoky Mountains National Park upstream of Gatlinburg.
4.	Little Pigeon River	From the headwaters within Great Smoky Mountains National Park downstream to the confluence of Mill Branch.
5.	Big South Fork Cumberland River	Portion within Big South Fork National River and Recreation Area.
6.	Reelfoot Lake	Tennessee portion of the lake and its associated wetlands.

7. The portion of the Obed River that is designated as a federal wild and scenic river as of June 22, 1999 is designated as ONRW, provided however, that if the current search for a regional water supply by the Cumberland Plateau Regional Water Authority results in a determination that it is necessary to utilize the Obed River as its source of drinking water, for that purpose the Obed shall be designated as an Exceptional Tennessee Water and any permit issued for that project, whether state, federal, or otherwise, shall be considered under the requirements for Exceptional Tennessee Waters.

(b) The Department may recommend to the Board of Water Quality, Oil and Gas that certain waterbodies be designated as Outstanding National Resource Waters (ONRWs). These shall be high quality waters which constitute an outstanding national resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance. Designation of ONRWs must be made by the Board of Water Quality, Oil and Gas

and will be accomplished in accordance with Section 69-3-105(a)(1) of the Tennessee Water Quality Control Act and through the appropriate rulemaking process.

1. In surface waters designated by the Board of Water Quality, Oil and Gas as ONRWs, no new discharges, expansions of existing discharges, water withdrawals or mixing zones will be permitted unless such activity will not result in either measurable degradation or discernible effect. At the time of permit renewal, previously authorized discharges, including upstream discharges and withdrawals, which presently degrade an ONRW, will be subject to alternatives analysis. Public participation for these existing discharges will be provided in conjunction with permitting activities.

2. In waters designated by the Board of Water Quality, Oil and Gas as ONRWs, no new or increased habitat alteration that would cause degradation of habitat above the level of de minimis or degrade water chemistry for more than a short duration will be authorized.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.07 Ground Water Classification

(1) Purpose and Intent

(a) It is one of the primary goals of the Tennessee Water Quality Control Act, Tennessee Code Annotated (T.C.A.) §§ 69-3-101 et seq. (the "Act") to protect our valuable ground water resource. This rule classifies ground water across the state based on the factors stated in T.C.A. § 69-3-105(a)(2) of the Act and establishes ground water quality criteria. The quality of ground water varies in Tennessee. Some ground water is sufficient to be used by our citizens directly as a drinking water supply with limited or no treatment. Other ground water would require more extensive treatment before it could be used as a water supply. Further, some ground water may be of such value as to warrant special protection. The board recognizes that some water below the surface of the ground may be present in a zone of aeration between ground surface and the water table. The zone of aeration is where treatment from household septic systems occurs and water in the zone of aeration is not classified as ground water in these regulations. Perched water above the zone of saturation may, in some areas, be used as a water supply or may migrate to either ground water or surface water and is included in these regulations to protect for its direct use or impact on ground water or surface water. Additionally, some ground water has levels of naturally occurring constituents that make the resource unusable as a drinking water supply.

(b) The board recognizes these rules apply to both permitting activities and response actions that involve water beneath the surface of the ground. The permitting of underground injection is governed by Rule Chapter 0400-45-06.

(c) These rules provide appropriate flexibility in the regulatory process to protect our ground water resource and to allow the productive use of land. Reuse of brownfield areas is encouraged and reduces the use of greenfield areas.

(d) The board recognizes that several divisions within the department have a role in protecting ground water resources. It is not the intent of these rules to change the responsibilities of those programs. It is, however, the intent of these rules to provide a basis for decisions involving ground water that may be applied by all divisions of the department. The board does not intend these rules to affect in any way the ability of the State to seek natural resource damages from responsible parties when ground water has been contaminated by human activity.

(e) Ground water that enters a stream or other water classified as surface water becomes surface water and is subject to respective criteria applicable to that water. The board expects that the department will use prudent judgment where ground water mixes with water on the surface of the ground.

(2) Definitions

(a) "Area of Control" means a volume designated by the commissioner underlying or surrounding a site, including the zone of aeration and the zone of saturation, containing water, some of which

the commissioner has determined not to meet applicable criteria.

(b) "Ground Water" means water beneath the surface of the ground within the zone of saturation, whether or not flowing through known and definite channels.

(c) "Perched water" means water that accumulates above an aquitard that limits downward migration where there is an unsaturated interval below it, between the aquitard and the zone of saturation.

(d) "Point of Classification Change" means the boundary of the volume within which ground water is classified as Site Specific Impaired as established under Rule 1200-04-03-.09.

(e) "Response action" means a clean up, remedial action, remedy, remedial investigation or other action taken by the department to address the presence of contaminants at levels that have been determined by the Department to require an appropriate response.

(f) "Zone of Aeration" means a subsurface zone extending from the water table to the surface of the land.

(g) "Zone of Saturation" means a subsurface zone below the water table in which all of the interconnected voids and pore spaces are filled with water.

(3) Water in the Zone of Aeration

Water in the zone of aeration is not defined as ground water in this rule, but it may occur as perched water. This perched water may be above ground water of any of the classifications used in this rule. Perched water is protected under this rule in accordance with its use as follows:

(a) Perched water that is used for drinking water or reasonably anticipated to be used as a drinking water supply shall meet the criteria listed for General Use in Rule 1200-04-03-.08(2). Other perched water shall not contain constituents, other than of natural origin, that cause or are reasonably likely to cause a violation of criteria of underlying ground water or surface water where the perched water enters those waters.

(b) Except for naturally occurring levels, perched water shall contain no other constituents at levels and conditions that pose an unreasonable risk to public health or the environment.

(c) If perched water, such as in a cave system, is habitat for fish and aquatic life, it shall contain no constituents except for naturally occurring substances at levels and concentrations that violate the criteria of Rule 1200-04-03-.03(3) for fish and aquatic life.

(4) Water below the surface of the ground is classified as follows:

(a) Special Source Waters

This is ground water or perched water with exceptional quality or quantity, which may serve as a valuable source for water supply or which is ecologically significant.

When the board finds water to be Special Source Water, then through the rulemaking process, the board will amend these rules to include the specific location and the boundaries of ground water or perched water designated as Special Source Water. To initiate this process, a petition shall address the factors listed below for board consideration. Any cost involved in making the petition shall be borne by the petitioner. In making this decision, the board may consider the following factors and relevant public input:

1. The vulnerability of the water in the proposed area to contamination due to hydrogeologic characteristics;

2. The number of persons or the proportion of the population using the water as a drinking water supply;

3. Existing water quality in the proposed Special Source Water area;

4. An evaluation of the ecological and environmental impact should the quality of the Special Source Water be compromised; and

5. Other pertinent information as deemed necessary by the petitioner, department, or board. Because such action is a rulemaking procedure, public input may be made as provided in the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et. seq., but not as a contested case under T.C.A. §§ 4-5-301 et seq.

(b) General Use Ground Water

Except for ground water in areas that have been designated as Special Source Water, Site Specific Impaired Ground Water, or meet the definition of Unusable Ground Water, all ground water is designated General Use Ground Water.

(c) Site Specific Impaired Ground Water

This is ground water that has been contaminated by human activity and the board finds that either it is not technologically feasible to remediate the ground water to the criteria required by other classifications or it is not reasonable to remediate to that criteria based on information provided in accordance with Rule 1200-04-03-.09. Ground water shall be classified as Site Specific Impaired upon approval of a petition to the Water Quality Control Board and completion of the rulemaking process to amend these rules to identify the reclassified ground water. When ground water is reclassified to Site Specific Impaired the areal extent of the Site Specific Impaired Ground Water shall be delineated. The boundaries of the Site Specific Impaired Ground Water cannot extend beyond the perimeter and depth investigated with an appropriate safety factor as determined under Rule 1200-04-03-.09. Figures which clearly depict the horizontal and vertical boundaries of the Site Specific Impaired Ground Water must be submitted to the department in the plans/reports required by Rule 1200-04-03-.09.

(d) Unusable Ground Water

Ground water in the following areas are classified as Unusable Ground Water:

1. A "High Dissolved Solids Zone" is an area in which ground water has naturally occurring total dissolved solids of more than 10,000 ppm.

2. A "Historical Injection Zone" is an area in which the ground water and the injection zone designated to receive fluids and other substances from deep well injection initiated prior to September 1985 and operated under compliance with the Department at the time of injection is no longer subject to injection. The certification as a historical injection zone subclass of Unusable Ground Water does not provide authorization for future injection activities and shall not be construed as Class I zone designation under Rule Chapter 0400-45-06, Underground Injection Control. The zone may be subsequently considered for Class I zone designation under that Rule Chapter provided it meets the criteria based on naturally occurring conditions and not from changes as a result of the previously injected fluids.

3. A "Class I Injection Zone" is an area in which ground water has been demonstrated by a permit applicant as a part of a Class I operation under Rule Chapter 0400-45-06, Underground Injection Control, to be suitable for Class I injection.

4. A "Class II or III Injection Zone" is an area in which ground water is mineral, hydrocarbon or geothermal energy producing, or has been demonstrated by a permit applicant as a part of a permit application for a Class II or III operation under Rule Chapter 0400-45-06 Underground Injection Control to contain minerals or hydrocarbons that, considering their quality and location, are expected to be commercially producible. The designation as Class II or III injection zone subclass of Unusable Ground Water shall not be construed as a Class I zone designation under Rule Chapter 0400-45-06, Underground Injection Control.

5. An "Acid Production Zone from Mining Activities" is an area in which ground water occurs within an excavated area where reaction with naturally occurring minerals generates acid rock drainage or acid mine drainage. An excavated area may be a surface or underground mined area as well as a subsidence area whether or not the mined area is backfilled. Ground water beyond the excavated area is classified as described elsewhere in this rule.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.08 Criteria

The water quality criteria for the different classes are as follows:

(1) Special Source Water

The board will consider the special protection needs of any water identified as Special Source Water and promulgate criteria at the time of designation.

(2) General Use Ground Water

Except for naturally occurring levels, General Use Ground Water:

(a) shall not contain constituents that exceed those levels specified in Rules 1200-04-03-.03(1)(j) and (k); and

(b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health or the environment.

(3) Site Specific Impaired Ground Water

Except for naturally occurring levels, Site Specific Impaired Ground Water:

(a) shall contain no substances, whether alone or in combination with other substances , that are toxic, carcinogenic, mutagenic or teratogenic, other than those of natural origin, at levels and conditions which pose an unreasonable risk to public health or the environment;

(b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health or the environment;

(c) shall contain no constituents at levels that will prevent ground waters beyond the point of classification change from meeting the classification and criteria for those waters; and

(d) other criteria established by the board as appropriate to the site.

(4) Unusable Ground Water

Except for naturally occurring levels, Unusable Ground Water:

(a) shall contain no substances, whether alone or in combination with other substances, that are toxic, carcinogenic, mutagenic or teratogenic, other than those of natural origin, at levels and conditions which pose an unreasonable risk to the public health;

(b) shall contain no other constituents at levels and conditions which pose an unreasonable risk to the public health;

(c) shall not discharge to surface water causing a violation of surface water quality criteria or biological integrity; and

(d) naturally occurring levels as used in subparagraph (a) of this paragraph shall include the natural minerals, mining wastes, and the reaction products of oxidation and reduction associated with these materials in Unusable Ground Water in an Acid Production Zone from Mining Activities.

These substances shall not pose an unreasonable public health or safety risk to the public. Physical barriers and institutional controls satisfy that requirement.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.09 Site Specific Impaired Classification Petition Process

(1) Any person who encounters ground water that may meet the requirements for Site Specific Impaired, may petition the board to adopt a rule reclassifying that ground water as Site Specific Impaired, using the process set forth in this rule. Any costs involved in making the petition shall be borne by the petitioner. The petition shall include the following, unless it is determined by the department in writing that the site conditions render any of them unnecessary:

(a) An assessment of the horizontal and vertical extent of the contamination;

(b) An evaluation of the hydrogeology of the area including but not limited to the ground water flow rate and direction, permeability, recharge area, ground water classification and location of local water wells, springs and seeps;

(c) An evaluation of the area geology including, but not limited to, soil type, soil permeability, soil porosity, depth to bedrock, and identification of geologic formations;

(d) A description of the corrective actions or response actions taken or proposed;

(e) The chemical characteristics of the constituents(s) including, but not limited to, the constituent's solubility, mobility, toxicity, and carcinogenicity, the nature of and the level of constituents to remain or be present in the ground water and the calculations and rationale used in the determination;

(f) A feasibility study, which evaluates clean-up alternatives, the cost, and the time to complete each alternative;

(g) An evaluation of current and reasonably anticipated future ground water use within the proposed site specific impaired area and within a one-half (1/2) mile radius of the proposed Site Specific Impaired area; the impact of conduit flow shall be evaluated in karst areas;

(h) An evaluation of current and reasonably anticipated future land uses within the proposed Site Specific Impaired area and within a one-half (1/2) mile radius of the proposed Site Specific Impaired area;

(i) An evaluation of the potential of the constituent to migrate through soil and ground water to:

1. homes;

2. buildings;

3. surface waters;

4. subsurface utilities; and

5. adjacent properties.

(j) A description of any existing or proposed monitoring program to observe constituent levels in soil and ground water;

(k) Evaluation of the existing or anticipated actual exposure pathways (inhalation, ingestion, dermal contact, etc.) of the constituents and an assessment of the human health risks presented by exposure to the constituents as well as the impact, if any, of the constituents on fish and aquatic life pursuant to Rule Chapter 1200-04-03;

(l) Consideration of the classification in Rule 1200-04-03-.07 that would apply to the ground water at

the site if it were not contaminated;

(m) Analysis of the benefits of the restored resource;

(n) A description of how and when the contamination occurred, if known;

(o) A plat map with the proposed site-specific ground water area superimposed on it that shows all property owners for properties included in the Site Specific Impaired classification with contact information for owners of each property and identification and contact information for the parties paying property taxes on each property in the proposed Site Specific Impaired classification area; and

(p) Other items as requested by the department associated with the evaluation of the petition.

(2) Because Site Specific Impaired classification is a rulemaking procedure, public input may be made as provided in the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et seq., but not as a contested case under T.C.A. §§ 4-5-301 et seq. In addition to the requirements for public input under the Uniform Administrative Procedures Act, T.C.A. §§ 4-5-201 et seq., the petitioner shall, at a minimum, notify the party of record paying property taxes for each property subject to the Site Specific Impaired classification of the petition and the process for submitting comments on said petition. The petitioner shall provide a copy of such notification to the department.

(3) In the evaluation of a petition to classify ground water as Site Specific Impaired, the board may consider the following:

(a) the extent of any threat to human health or safety;

(b) the extent of damage to the environment;

(c) technology commercially available to accomplish restoration;

(d) a comparison of the environmental and economic costs and benefits to be derived from ground water quality restoration with the environmental and economic costs and benefits to be derived from classification as Site Specific Impaired;

(e) analysis of the restored resource;

(f) the point of classification change;

(g) contaminant or pollution source identification and cleanup;

(h) public comments; and

(i) other appropriate information presented in the petition.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.10 Remediation of Ground Water or Perched Water

(1) When a release or other event occurs that causes subsurface water to not meet the criteria in these rules, the commissioner has authority under a number of statutes to cause remediation of the water. These statutes include the Solid Waste Disposal Control Act, T.C.A. §§ 68-211-101 et seq., the Hazardous Waste Management Act, parts 1 and 2, T.C.A. §§ 68-212-101 et seq., and §§ 68-212-201 et seq., the Petroleum Underground Storage Tank Act, T.C.A. §§ 68-215-101 et seq., and the Drycleaner Environmental Response Act, T.C.A. §§ 68-217-101 et seq. The goals of all such remediation actions are:

(a) to return waters to meeting standards when practicable by such methods as source removal, bioremediation, pump and treat, and natural attenuation; and

(b) to protect the public from exposure to water that does not meet standards through such methods

as physical and institutional controls.

(2) In order to accomplish these goals the commissioner may establish an Area of Control when contamination has caused water to exceed the standards in these rules. In establishing an Area of Control, the commissioner shall use the authorities of the remediation statutes and rules to;

(a) describe the extent of an Area of Control; and

(b) protect the public from exposure to the water in the Area of Control.

Where the commissioner identifies the source of pollution or water of sufficient contamination as to warrant contaminant mass reduction, he may further prescribe the actions to be taken to reduce the levels of contamination within the Area of Control.

(3) The commissioner may establish such an Area of Control for water contaminated by human activity prior to November 19, 1980 if there are no liable parties as defined in T.C.A. § 68-212-202 (3) (B), (C), or (D) and the current property owner did not cause the water contamination. This could be done in conjunction with imposing land use restrictions to protect the public from any harm caused by the site whether or not the department expends funds to remediate the site. In establishing such an Area of Control, the commissioner may use the authorities of the remediation statutes and rules to:

(a) describe the extent of an Area of Control;

(b) prescribe the actions to be taken to reduce the levels of contamination within the Area of control; and

(c) protect the public from exposure to the water in the Area of Control.

(4) Any current or future "alternate concentration limit" or "ground water protection standard" established within a Tennessee Hazardous Waste Management enforceable document in accordance with Tennessee Rule Chapter 1200-1-11-.06 identifies an Area of Control in accordance with this Rule. Compliance with the enforceable document constitutes compliance with the remediation actions identified in paragraph (1) of this Rule.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.11 Classified Site Specific Impaired Ground Water and Respective Criteria

The following ground water is classified as site specific impaired ground water with the respective criteria:

(1) Porter Cable

(a) Description of the site

The area of ground water classified is the ground water within the boundaries of the Porter Cable/Rockwell facility that is within the rectangle with the following boundary points to a depth equivalent to 250 feet mean sea level.

Northwest boundary point...35°44'27.5"N, 88°51'19.8"W

Northeast boundary point ...35°44'27.5"N, 88°51'05.7"W

Southwest boundary point...35°44'13.8"N, 88°51'19.8"W

Southeast boundary point... 35°44'13.8"N, 88°51'05.7"W

A solvent plume under the western edge of the building is moving very slowly to the north-northwest. Since the plant began operation in the mid-1970's, the plume has migrated approximately 400 feet, with the property boundary another 1500 feet down gradient. Sampling has shown that the plume is degrading to a certain extent by natural and biologic processes, and this process can be enhanced with the addition of nutrients to fuel the biologic activity in the

contaminated zone.

(b) Criteria

Nutrient addition is allowed to promote enhanced natural attenuation of the plume in accordance with the remediation remedy being used at the site. Deed restrictions will insure the site will not be used as residential and that ground water will not be used for potable purposes. The point of classification change is totally within the boundaries of the Porter-Cable facility. The plume shall not cross the point of classification change at levels exceeding general use criteria.

(2) Isabella Mine Pit

(a) Description of the site

The area of ground water classified is the ground water in mined areas of the former Isabella/Eureka Mine, the connected Isabella pit, ground water between the Isabella pit and North Potato Creek, and an approximate 500 foot buffer around the mined areas. This ground water classification applies to part of the land that was previously abandoned by the bankruptcy court and is now either under control of a court-appointed receiver or trustee for the Irrevocable Trust of the Tennessee Chemical company (receiver or trustee). If the 500 foot buffer boundary would extend beyond a property line, then the property line shall be the point of classification change. The depth of ground water classification is from ground surface to 1400 feet. The mined areas are delineated as shown on the former mining company's mine maps. The point of classification change for this area is the outer boundary of the area classified as described above and a depth of 1400 feet.

There is a bulkhead or plug between the Isabella/Eureka Mine and the Burra Burra Mine and this Site Specific Impaired classification includes the drift between the Isabella and Burra Burra Mines on the Isabella side of the drift plug but does not apply to water in the Burra Burra Mine. The drift does not require a 500-foot wide buffer zone.

(b) Criteria

The Site Specific Impaired Ground Water criteria for the water in the Isabella pit, associated Isabella/Eureka mine workings, and ground water between the Isabella pit and North Potato Creek shall be:

1. Any concentration of inorganic constituents or elements associated with acid mine drainage and any pH or other physical standard associated with acid mine drainage;

2. Any concentration of inorganic constituents or elements associated with approved backfilling or addition of ore, waste rock, calcine, concentrate, granulated slag, tailings, or other acid-generating materials from historic mining and ore beneficiation processes in the Copper Basin;

3. Criteria for other constituents are those required for General Use Ground Water as of November 3, 2004;

4. The continued use of institutional controls to avoid the potential for human contact with this ground water; and

5. Institute a monitoring program, acceptable to TDEC, that monitors the water level in the pit and is sufficient to assure protection of human health and the environment.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-03-.12 Reporting Requirement

(1) The board acknowledges that the General Assembly has given it the authority to promulgate rules for the prevention, control, and abatement of pollution in T.C.A. § 69-3-105(b). The board finds a necessary first step toward controlling and abating pollution is becoming aware of the situation. This is especially

needed in the case of ground water, as it is not in plain view as surface water often is. Furthermore, once the department has documents relating to an instance of pollution, they are generally going to be open to the public. Making the public aware of pollution both increases the likelihood that the pollution will be abated and that the public will be able to take appropriate action to reduce harmful exposure. These findings, in addition to the provision of T.C.A. § 69-3-114(b) making it unlawful to refuse to furnish any information required by the Board, are the basis for the requirement stated in paragraph (2) of this rule.

(2) Owners or prospective purchasers of property used for commercial or industrial purposes who test the ground water or perched water on the property shall notify the commissioner of any contamination of such water if it is currently used as potable water and it exceeds general use criteria or if an environmental professional engaged by such owner or prospective purchaser reasonably concludes that it poses some other substantial risk to health or safety, including but not limited to, situations in which vapors released from the water are causing an explosion hazard or a current inhalation hazard with a hazard quotient of greater than 1 or a cancer risk of greater than 1×10^{-6}

(3) Routine sampling and reporting of ground water or perched water data required by an agency of the Department as part of a regulatory program obligation shall constitute reporting for the purposes of this rule.

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

Chapter 1200-04-04
Use Classifications for Surface Waters

Amendments

Chapter 1200-04-04 Use Classifications for Surface Waters is deleted in its entirety and replaced with the following so that, as amended, Chapter 1200-04-04 shall read as follows:

Chapter 1200-04-04
Use Classifications for Surface Waters

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Abbreviations for Designated Uses and Trout Streams:

Domestic Water Supply	DOM
Industrial Water Supply	IWS
Fish and Aquatic Life	FAL
Trout Stream	TS
Naturally Reproducing Trout Stream	NRTS
Recreation	REC
Livestock Watering and Wildlife	LWW
Irrigation	IRR
Navigation	NAV

1200-04-04-.01 Memphis Area Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mississippi-Tennessee State Line (Mile 714.0) to Upstream End of Loosahatchie Bar (Mile 741.0)		X	X	X	X	X	X		
McKellar Lake	Mouth on Mississippi R. to Origin		X	X	X			X		
Nonconnah Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf River	Mile 0.0 to 6.7 (L & N Railroad Bridge)			X	X	X	X			
Cypress Creek	Mile 0.0 to origin			X	X	X	X			
Wolf River	Mile 6.7 to Miss.-TN State Line (Mile 77.0)		X	X	X	X	X	X		
Loosahatchie River	Mile 0.0. to 20.9 (Austin Peay Hwy Bridge)			X	X	X	X			
Big Creek	Mile 0.0 to Origin			X	X	X	X			
North Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Crooked Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 3.0 of Crooked Creek	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 20.9 (Austin Peay Hwy) to 30.7			X	X	X	X			
Clear Creek Canal	Mile 0.0 to Origin at Mile 2.6 (Confluence of Hall Creek and Cypress Creek Canal)			X	X	X	X			
Cypress Creek Canal	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 30.7 to 45.5			X	X	X	X			
Middle Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
West Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
East Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Little Cypress Creek Canal	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 45.5 to 50.2			X	X	X	X			
Davis Creek	Mile 0.0 to Origin			X	X	X	X			
Town Branch	Mile 0.0 to Origin			X	X	X	X			
Loosahatchie River	Mile 50.2 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Memphis Area Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.02 Hatchie River Basin

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mile 741.0 to 820.0	X	X	X	X	X	X	X		
Hatchie River	Mile 0.0 to Mile 129.0	X	X	X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Alston Creek	Mile 0.0 to Origin			X	X	X	X			
Big Muddy Canal	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib. to Mile 3.1 of Big Muddy Canal	Mile 0.0 to Origin			X	X	X	X			
Sugar Creek	Mile 0.0 to Origin			X	X	X	X			
Mill Creek	Mile 0.0 to 2.0			X	X	X	X			
Pugh Creek South	Mile 0.0 to Origin			X	X	X	X			
Mill Creek	Mile 2.0 to Origin			X	X	X	X			
Hatchie River	Mile 129.0 to Mile 131.0		X	X	X	X	X			
Hatchie River	Mile 131.0 to Miss-Tenn State Line (Mile 188.5)	X	X	X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Cypress Creek	Mile 0.0 to Origin			X	X	X	X			
Tuscumbia River	Mile 0.0 to Miss-Tenn State Line (Mile 10.5)	X		X	X	X	X			
Cypress Creek	Mile 0.0 to 14.2			X	X	X	X			
Cypress Creek	Mile 14.2 to 15.2			X	X	X	X			
Cypress Creek	Mile 15.2 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Hatchie Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.03 Obion-Forked Deer Basin

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mississippi River	Mile 820.0 to Mile 905.0 (Kentucky State Line)	X	X	X	X	X	X	X		
Obion River	Mile 0.0 to Confluence of North and			X	X	X	X			
	South Fork Obion River (Mile 71.8)			X	X	X	X			
Running Reelfoot Bayou	Mile 0.0 to Reelfoot Lake Spillway			X	X	X	X			
Reelfoot Lake	Entirety			X	X	X	X			
Biffle Creek	Mile 0.0 to Origin			X	X	X	X			
Reeds Creek	Mile 0.0 to Origin			X	X	X	X			
Cool Springs Branch	Mile 0.0 to Origin			X	X	X	X			
North Fork Obion River	Mile 0.0 to Origin			X	X	X	X			
Hoosier Creek	Mile 0.0 to Origin			X	X	X	X			
First Creek	Mile 0.0 to Origin			X	X	X	X			
Grove Creek	Mile 0.0 to Origin			X	X	X	X			
Harris Fork Creek	Mile 0.0 to Kentucky-Tennessee State Line			X	X	X	X			
Walnut Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 3.8 of Walnut Fork Creek	Mile 0.0 to Origin			X	X	X	X			
South Fork Obion River	Mile 0.0 to 38.9 (Formed at Confluence of Beaver Creek and Crooked Creek)			X	X	X	X			
Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 9.8 of Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 11.0 of Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Brassfield Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 0.5 of Brassfield Creek	Mile 0.0 to Origin			X	X	X	X			
Rutherford Fork	Mile 0.0 to Origin			X	X	X	X			
Carroll Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
E. Fork Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Trib. to Mile 27.7 of Rutherford Fork	Mile 0.0 to Origin			X	X	X	X			
Middle Fork Obion River	Mile 0.0 to Origin			X	X	X	X			
Buckor Ditch	Mile 0.0 to Origin			X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Pritchett Branch	Mile 0.0 to Origin			X	X	X	X			
Bradford Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Reedy Creek	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	Mile 0.0 to Origin		X	X	X	X	X			
Crooked Creek	Mile 0.0 to Origin		X	X	X	X	X			
Guins Creek	Mile 0.0 to Origin		X	X	X	X	X			
Trib. to Mile 9.7 of Guins Creek	Mile 0.0 to Origin			X	X	X	X			
Forked Deer River	Mouth at Obion River Mile 3.3 to Mile 20.3 at Confluence of North and South Fork			X	X	X	X	X		
South Fork Forked Deer	Mile 0.0 to 48.8			X	X	X	X	X		
Nixon Creek	Mile 0.0 to Origin			X	X	X	X			
Little Nixon Creek	Mile 0.0 to Origin			X	X	X	X			
Old Channel Forked Deer- Trib. at Mile 35.8	Mile 0.0 to Origin			X	X	X	X			
South Fork Forked Deer River	Mile 48.8 to 70.3			X	X	X	X	X		
North Fork of South Fork Forked Deer River	Mile 0.0 to Origin			X	X	X	X			
Johnson Creek	Mile 0.0 to Origin			X	X	X	X			
Anderson Branch	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 0.0 to 1.2			X	X	X	X			
Trib. to Mile 1.0 of Turkey Creek	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 1.2 to Origin			X	X	X	X			
South Fork Forked Deer River	Mile 70.3 to Origin			X	X	X	X			
Sugar Creek	Mile 0.0 to Origin			X	X	X	X			
North Fork Forked Deer River	Mile 0.0 to 5.8			X	X	X	X	X		
North Fork Forked Deer River	Mile 5.8 to 33.9			X	X	X	X			
Middle Fork Forked Deer River	Mile 0.0 to Origin			X	X	X	X			
Mosquito Creek	Mile 0.0 to Origin			X	X	X	X			
Moize Creek	Mile 0.0 to Origin			X	X	X	X			
Dyer Creek	Mile 0.0 to Origin			X	X	X	X			
North Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Cow Creek	Mile 0.0 to Origin			X	X	X	X			
Sand Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
North Fork Forked Deer River	Mile 33.9 to Origin			X	X	X	X			
Trib. to Mile 857.5 of Mississippi River	Mile 0.0 to Origin			X	X	X	X			
Harris Ditch	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Obion-Forked Deer Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified.				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.04 Tennessee River Basin - Western Valley.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Mile 49.1 (Tenn-Ky Line) to 215.1 (Tn-Miss Line)	X	X	X	X	X	X	X		
Big Sandy River	Mile 0.0 to 15.1		X	X	X	X	X	X		
Big Sandy River	Mile 15.1 to Origin		X	X	X	X	X			
West Sandy Creek	Mile 0.0 to Origin			X	X	X	X			
Holly Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Bailey Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Big Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Little Beaver Creek	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X		X	
S. Fk Hurricane Cr	Mile 0.0 to Origin			X	X	X	X			
Beaverdam Creek	First bridge above mouth to origin.			X	X	X	X		X	
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Trace Creek	Mile 0.0 to Origin			X	X	X	X			
Cypress Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
North Indian Creek	Mile 0.0 to Origin			X	X	X	X			
Birdsong Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Eagle Creek	Mile 0.0 to Origin			X	X	X	X			
Morgan Creek	Mile 0.0 to Origin			X	X	X	X			
Beech River	Mile 0.0 to 7.2	X	X	X	X	X	X	X		
Beech River	Mile 7.2 to 27.4	X	X	X	X	X	X			
Beech River	Mile 27.4 to 30.4		X	X	X	X	X			
Beech River	Mile 30.4 to Origin	X	X	X	X	X	X			
Rushing Creek	Mile 0.0 to Origin			X	X	X	X			
Harmon Creek	Mile 0.0 to Origin			X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			
Doe Creek	Mile 0.0 to Origin			X	X	X	X			
East Prong Doe Creek	Mile 0.0 to Origin			X	X	X	X			
White Oak Creek	Mile 0.0 to Origin			X	X	X	X			
Little Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Horse Creek	Mile 0.0 to Origin			X	X	X	X			
Beason Creek	Mile 0.0 to Origin			X	X	X	X			
South Fork Beason Creek	Mile 0.0 to Origin			X	X	X	X			
Dollar Creek	Mile 0.0 to Origin			X	X	X	X			
Beech Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Leatherwood Creek	First bridge to origin			X	X	X	X		X	
E. Fork Leatherwood Cr	Mile 0.0 to second tributary			X	X	X	X		X	
N. Fork Leatherwood Cr	Mile 0.0 to second tributary			X	X	X	X		X	
Town Branch	Mile 0.0 to Origin			X	X	X	X			
Chambers Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Western Valley Tennessee River Basin, with the exception of wet weather conveyances,which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.05 Duck River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Duck River	Mile 0.0 to 67.0	X	X	X	X	X	X			
Blue Creek	Mile 0.0 to 14.0	X	X	X	X	X	X			
Blue Creek	Mile 14.0 to 16.2		X	X	X	X	X			
Blue Creek	Mile 16.2 to Origin			X	X	X	X			
Buffalo River	Mile 0.0 to 24.0	X	X	X	X	X	X			
Cane Creek	Hickman Co. line to Lewis Co. line			X	X	X	X		X	
Buffalo River	Mile 24.0 to 26.0		X	X	X	X	X			
Buffalo River	Mile 26.0 to 38.0	X	X	X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			X
Sinking Creek	Mile 0.0 to Origin			X	X	X	X		X	
Buffalo River	Mile 38.0 to 41.1		X	X	X	X	X			
Buffalo River	Mile 41.1 to Origin	X	X	X	X	X	X			
Green River	Mile 0.0 to 9.0	X	X	X	X	X	X			
Green River	Mile 9.0 to 11.7		X	X	X	X	X			
Green River	Mile 11.7 to Origin	X	X	X	X	X	X			
Rockhouse Creek	Mile 0.0 to 6.0	X	X	X	X	X	X			
Rockhouse Creek	Mile 6.0 to 9.5		X	X	X	X	X			
Rockhouse Creek	Mile 9.5 to Origin	X	X	X	X	X	X			
Little Buffalo River	Mile 0.0 to Origin			X	X	X	X		X	
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X		X	
Beaverdam Creek	Highway 100 to Sulfur Fork Cr			X	X	X	X			X
Sulfur Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Piney River	Mile 0.0 to Origin	X	X	X	X	X	X			X
Mill Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Little Spring Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Spring Creek	Mile 0.0 to Origin			X	X	X	X			X
Garner Creek	Mile 0.0 to Origin			X	X	X	X		X	
Bear Creek	Mile 0.0 to Origin			X	X	X	X			X
East Piney River	Mile 0.0 to 4.0	X	X	X	X	X	X			
East Piney River	Mile 4.0 to 6.1		X	X	X	X	X			
East Piney River	Mile 6.1 to Origin	X	X	X	X	X	X			
Defeated Camp Creek	Mile 0.0 to 4.4		X	X	X	X	X			
Defeated Camp Creek	Mile 4.4 to Origin			X	X	X	X			
Defeated Branch	Mile 0.0 to Origin			X	X	X	X			
Duck River	Mile 67.0 to 71.5		X	X	X	X	X			
Duck River	Mile 71.5 to 123.2	X	X	X	X	X	X			
Big Bigby Creek	Mile 0.0 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Sugar Fork	Mile 0.0 to 1.9	X	X	X	X	X	X			
Sugar Fork	Mile 1.9 to 2.9		X	X	X	X	X			
Sugar Creek	Mile 0.0 to 0.7		X	X	X	X	X			
Sugar Creek	Mile 0.7 to Origin	X	X	X	X	X	X			
Quality Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Big Swan Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Little Swan Creek	Mile 0.0 to Origin			X	X	X	X		X	
Cathey's Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Duck River	Mile 123.2 to 127.2		X	X	X	X	X			
Little Bigby Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Rutherford Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Duck River	Mile 127.2 to 217.0	X	X	X	X	X	X			
Big Rock Creek	Mile 0.0 to 14.0	X	X	X	X	X	X			
Big Rock Creek	Mile 14.0 to 16.9		X	X	X	X	X			
Big Rock Creek	Mile 16.9 to Origin	X	X	X	X	X	X			
Duck River	Mile 217.0 to 221.3		X	X	X	X	X			
Duck River	Mile 221.3 to 244.0	X	X	X	X	X	X			
Duck River	Mile 244.0 to 248.6 (Normandy Dam)	X		X	X	X	X		X	
Duck River	Mile 248.6 to 266.5	X	X	X	X	X	X			
Garrison Fork Creek	Mile 0.0 to 2.7	X	X	X	X	X	X			
Garrison Fork Creek	Mile 2.7 to 3.3		X	X	X	X	X			
Garrison Fork Creek	Mile 3.3 to Origin	X	X	X	X	X	X			
Duck River	Mile 266.5 to 268.5		X	X	X	X	X			
Duck River	Mile 268.5 to Origin	X	X	X	X	X	X			
Little Duck River	Mile 0.0 to Origin	X	X	X	X	X	X			
All other surface waters named and unnamed in the Duck River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.06 Elk River Basin (including Shoal Creek).

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Shoal Creek	Tenn-Ala State Line (Mile 20.6) to Mile 56.9	X	X	X	X	X	X			
Clack Branch	Mile 0.0 to Origin		X	X	X	X	X			
Loretto Branch	Mile 0.0 to Origin		X	X	X	X	X			
Little Shoal Creek	Mile 0.0 to Origin		X	X	X	X	X			
Shoal Creek	Mile 56.9 to Origin (Jct of B. Dry Branch & Beeler Fk)		X	X	X	X	X		X	
Factory Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Chisholm Creek	Mile 0.0 to Origin			X	X	X	X		X	
Crowson Creek	Mile 0.0 to Origin			X	X	X	X			X
Elk River	Tenn-Ala State Line (Mile 33.6) to 36.3	X	X	X	X	X	X	X		
Elk River	Mile 36.3 to 90.5	X	X	X	X	X	X			
Richland Creek	Mile 0.0 to 20.0		X	X	X	X	X			
Buchannan Creek	Mile 0.0 to Origin			X	X	X	X			
Richland Creek	Mile 20.0 to 23.3			X	X		X			
Richland Creek	Mile 23.3 to Origin	X	X	X	X	X	X			
Pigeon Roost Creek	Mile 0.0 to Origin		X	X	X	X	X			
Robertson Fork	Mile 0.0 to Origin		X	X	X	X	X			
Town Creek	Mile 0.0 to Origin		X	X	X	X	X			
Holland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Elk River	Mile 90.5 to 119.0	X	X	X	X	X	X			
Mulberry Creek	Mile 0.0 to Origin		X	X	X	X	X			
East Fork Mulberry Cr.	Mile 0.0 to 11.1		X	X	X	X	X			
East Fork Mulberry Cr.	Mile 11.1 to Origin	X	X	X	X	X	X			
Spring Branch	Mile 0.0 to Origin	X	X	X	X	X	X			
Elk River	Mile 119.0 to 133.3 (Tims Ford Dam)	X	X	X	X	X	X		X	
Elk River	Mile 133.3 to Origin	X	X	X	X	X	X			
Beans Creek	Mile 0.0 to Origin		X	X	X	X	X			
Factory Branch	Mile 0.0 to Origin		X	X	X	X	X			
Mathias Branch	Mile 0.0 to Origin		X	X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin		X	X	X	X	X			
Boiling Fork Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Wagner Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Rock Creek	Mile 0.0 to Origin		X	X	X	X	X			
Rollins Creek	Mile 0.0 to 2.5	X	X	X	X	X	X			
Rollins Creek	Mile 2.5 to Origin			X	X	X	X			
Mud Creek	Mile 0.0 to Origin		X	X	X	X	X			
Caldwell Creek	Mile 0.0 to Origin		X	X	X	X	X			

STREAM	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
All other surface waters named and unnamed in the Elk River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified			X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.07 Lower Tennessee River Basin (including Conasauga River).

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Tenn-Ala State Line (Mile 416.5) to the POT Light (Mile 448.0)	X	X	X	X	X	X	X		
Unnamed Tributary	At Tenn. River Mile 417.5; Mile 0.0 to Origin			X	X	X	X			
Battle Creek	Mile 0.0 to 17.3 (Martin Spring)	X	X	X	X	X	X		X	
Swedens Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Fiery Gizzard	Mile 0.0 to 4.5			X	X	X	X			
Little Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Little Fiery Gizzard Mile 0.6; Mile 0.0 to Origin			X	X	X	X			
Big Fiery Gizzard	Mile 4.5 to 5.5			X	X	X	X		X	
Big Fiery Gizzard	Mile 5.5 to Origin			X	X	X	X			
Battle Creek	Mile 17.3 to Origin	X	X	X	X	X	X			
Sequatchie River	Mile 0.0 to 3.5	X	X	X	X	X	X	X		
Sequatchie River	Mile 3.5 to 41.0	X	X	X	X	X	X			
Little Sequatchie River	Mile 0.0 to confluence of Sawmill Creek			X	X	X	X			
Little Sequatchie River	Confluence of Sawmill Creek to confluence of Grays Creek		X	X	X	X		X		
Little Sequatchie River	Confluence of Grays Creek to Origin			X	X	X	X			
Pocket Creek	Mile 0.0 to Origin			X	X	X	X		X	
Clifty Creek	Mile 0.0 to Origin			X	X	X	X			
Sewanee Creek	Mile 0.0 to 4.0			X	X	X	X			
Sewanee Creek	Mile 4.0 to Origin	X		X	X	X	X			
Holywater Creek	Mile 0.0 to Origin	X		X	X	X	X			
Scott Creek	Mile 0.0 to Origin	X		X	X	X	X			
Coops Creek	Mile 0.0 to Origin			X	X	X	X			
Sequatchie River	Mile 41.0 to 43.9			X	X	X	X			
Sequatchie River	Mile 43.9 to 74.0	X	X	X	X	X	X			
Sequatchie River	Mile 74.0 to 78.4			X	X	X	X			
Sequatchie River	Mile 78.4 to 105.9	X	X	X	X	X	X			
Sequatchie River	Mile 105.9 to 108.9	X	X	X	X	X	X		X	
Sequatchie River	108.8 to Origin			X	X	X	X			
Tennessee River	Mile 448.0 to 460.6 (Chattanooga Creek)		X	X	X	X	X	X		
Shoal Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Tenn. River Mile 458.7; Mile 0.0 to Origin			X	X	X	X			
Lookout Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
Chattanooga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Tennessee River	Mile 460.6 to 499.4 (Hiwassee)	X	X	X	X	X	X	X		
Citico Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
South Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Friar Branch	Mile 0.0 to Origin			X	X	X	X			
West Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Spring Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X			
Mackey Branch	Mile 0.0 to Origin			X	X	X	X			
Ryall Springs Br.	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Tenn. River Mile 469.2; Mile 0.0 to Origin			X	X	X	X			
North Chickamauga Creek	Mile 0.0 to 13.2			X	X	X	X			
Unnamed Tributary	At N. Chickamauga Creek Mile 0.7; Mile 0.0 to Origin			X	X	X	X			
North Chickamauga Creek	Mile 13.2 to 15.0			X	X	X	X		X	
North Chickamauga Creek	Mile 15.0 to Origin			X	X	X	X			
Wolftever Creek	Mile 0.0 to Origin			X	X	X	X			
Sale Creek	Mile 0.0 to Origin			X	X	X	X			
Roaring Creek	Mile 0.0 to Origin			X	X	X	X			
Brush Creek	Mile 0.0 to Origin			X	X	X	X			
Hiwassee River	Mile 0.0 to 23.9	X	X	X	X	X	X	X		
Candies Creek	Mile 0.0 to Origin			X	X	X	X			
South Mouse Creek	Mile 0.0 to Origin			X	X	X	X			
Chatata Creek	Mile 0.0 to Origin			X	X	X	X			
Little Chatata Cr.	Mile 0.0 to Origin			X	X	X	X			
Chestuee Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Creek	Mile 0.0 to 1.9			X	X	X	X			
Middle Creek	Mile 1.9 to Origin	X		X	X	X	X			
Ocoee River	Mile 0.0 to Benton Station Bridge	X	X	X	X	X	X		X	
Ocoee River	Benton Station Bridge to mile 17.0	X	X	X	X	X	X			
Sylco Creek	Mile 0.0 to Origin			X	X	X	X		X	
Dutch Creek	Mile 0.0 to Origin			X	X	X	X		X	
Greasy Creek	Mile 0.0 to Origin			X	X	X	X			
Rock Creek	Mile 0.0 to Origin			X	X	X	X		X	
Clear Creek	Mile 0.0 to Origin			X	X	X	X		X	
Ocoee River	Mile 17.0 to Ocoee #3 Powerhouse		X	X	X	X	X			
Caney Creek (East Fork)	Mile 0.0 to Origin			X	X	X	X		X	
Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Goforth Creek	Mile 0.0 to Origin			X	X	X	X		X	
Ocoee River	Ocoee #3 Powerhouse to Rock Creek		X	X	X	X	X		X	
Rock Creek	Mile 0.0 to Origin			X	X	X	X		X	
Ocoee River	Rock Creek to mile 37.9 (Georgia-Tenn State Line)		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
West Fork Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
North Potato Creek	Mile 0.0 to North Carolina-Tenn State Line)			X	X	X	X			
Burra Creek	Mile 0.0 to 1.5			X	X	X	X			
Brush Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Belcher Creek	Mile 0.0 to Origin			X	X	X	X			
Deweese Creek	Mile 0.0 to Origin	X		X	X	X	X			
Conasauga Creek	Mile 0.0 to Cog Hill Mill Dam			X	X	X	X		X	
Conasauga Creek	Cog Hill Mill Dam to Ruralville Mill			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Crockett Spring Cr	Mile 0.0 to Origin			X	X	X	X			
Conasauga Creek	Ruralville Mill to Origin			X	X	X	X		X	
Gee Creek	Mile 0.0 to Origin			X	X	X	X			X
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Yellow Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Lost Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Lost Creek	Mile 0.0 to Origin			X	X	X	X		X	
Smith Creek	Mile 0.0 to Origin			X	X	X	X		X	
Wolf Creek	Mile 0.0 to Origin			X	X	X	X			X
Turtletown Creek	Mile 0.0 to N. Carolina Line			X	X	X	X		X	
Brushy Creek	Mile 0.0 to N. Carolina Line			X	X	X	X		X	
Coker Creek	Joe Brown Highway to Origin			X	X	X	X		X	
Hiwassee River	Mile 23.9 to 34.4	X	X	X	X	X	X	X		
North Mouse Creek	Mile 0.0 to 10.0	X	X	X	X	X	X			
Spring Creek	Mile 0.0 to 18.7		X	X	X	X	X			
Spring Creek	Mile 18.7 to Origin			X	X	X	X			
Dry Valley Creek	Mile 0.0 to Origin			X	X	X	X			
North Mouse Creek	Mile 10.0 to 30.1		X	X	X	X	X			
Little North Mouse Cr.	Mile 0.0 to 4.1			X	X	X	X			
Little North Mouse Cr.	Mile 4.1 to Origin			X	X	X	X			
North Mouse Creek	Mile 30.1 to Origin			X	X	X	X			
Oostanaula Creek	Mile 0.0 to 26.0	X	X	X	X	X	X			
Oostanaula Creek	Mile 26.0 to 28.0		X	X	X	X	X			
Oostanaula Creek	Mile 28.0 to 33.8		X	X	X	X	X			
Oostanaula Creek	Mile 33.8 to 37.5	X	X	X	X	X	X			
Oostanaula Creek	Mile 37.5 to Origin			X	X	X	X			
Hiwassee River	Mile 34.4 to 64.9 (North Carolina Line)	X	X	X	X	X	X		X	
All other surface waters named and unnamed in the Lower Tennessee River Basin, with the exception of wet weather				X	X	X	X			

conveyances, which have not been specifically noted shall be classified

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.08 Upper Tennessee River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Mile 499.4 (Hiwassee) to 567.8 (Clinch)	X	X	X	X	X	X	X		
Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Little Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Broyles Branch	Mile 0.0 to Origin		X	X	X	X	X			
Piney River	Mile 0.0 to 5.5		X	X	X	X	X	X		
Piney River	Mile 5.5 to 6.5 (U.S. Hwy. 27 Bridge)	X	X	X	X	X	X			
Piney River	Mile 6.5 to Origin		X	X	X	X	X			
Town Creek	Mile 0.0 to Origin		X	X	X	X	X			
Whites Creek	Mile 0.0 to 5.1			X	X	X	X	X		
Whites Creek	Mile 5.1 to Origin			X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
Caney Creek	Mile 0.0 to Origin			X	X	X	X			
Post Oak Creek	Mile 0.0 to Origin			X	X	X	X			
Cardiff Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to 3.0			X	X	X	X		X	
Tennessee River	Mile 567.8 to 601.1	X	X	X	X	X	X	X		
Martin Branch	Mile 0.0 to Origin			X	X	X	X			
Stamp Creek	Mile 0.0 to Origin			X	X	X	X			
Greenbriar Branch	Mile 0.0 to Origin			X	X	X	X			
Hines Creek	Mile 0.0 to Origin			X	X	X	X			
Sweetwater Creek	Mile 0.0 to 9.4	X	X	X	X	X	X			
Bacon Creek	Mile 0.0 to Origin			X	X	X	X			
Sweetwater Creek	Mile 9.4 to 19.0			X	X	X	X			
Sweetwater Creek	Mile 19.0 to 21.0	X		X	X	X	X			
Sweetwater Creek	Mile 21.0 to Origin	X	X	X	X	X	X			
Unnamed Spring Branch	Mile 0.0 to Origin			X	X	X	X			
Little Tennessee River	Mile 0.0 to 19.0	X	X	X	X	X	X	X		
Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	Mile 0.0 to Origin			X	X	X	X			
Bat Creek	Mile 0.0 to Origin			X	X	X	X			
Tellico River	Mile 0.0 to 5.0	X	X	X	X	X	X	X		
Tellico River	Mile 5.0 to 28.0	X	X	X	X	X	X			
Ballplay Creek	Upper 7 miles			X	X	X	X		X	
Cane Creek	Mile 0.0 to Origin			X	X	X	X		X	
Tellico River	Mile 28.0 to 41.0	X		X	X	X	X		X	
Wildcat Creek	Mile 0.0 to Origin			X	X	X	X		X	
Turkey Creek	Mile 0.0 to Origin			X	X	X	X		X	

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Bald River	Mile 0.0 to Origin			X	X	X	X			X
Kirkland Creek	Mile 0.0 to Origin			X	X	X	X			X
Henderson Creek	Mile 0.0 to Origin			X	X	X	X			X
Barrett Branch	Mile 0.0 to Origin			X	X	X	X			X
Service Branch	Mile 0.0 to Origin			X	X	X	X			X
Brookshire Branch	Mile 0.0 to Origin			X	X	X	X			X
North River	Mile 0.0 to Origin			X	X	X	X			X
Long Branch	Mile 0.0 to Origin			X	X	X	X		X	
Hemlock Branch	Mile 0.0 to Origin			X	X	X	X		X	
McNabb Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Big Cove Branch	Mile 0.0 to Origin			X	X	X	X			X
Round Mountain Br	Mile 0.0 to Origin			X	X	X	X			X
Service Tree Br	Mile 0.0 to Origin			X	X	X	X			X
Sugar Cove Br	Mile 0.0 to Origin			X	X	X	X			X
Meadow Branch	Mile 0.0 to Origin			X	X	X	X			X
Roaring Br	Mile 0.0 to Origin			X	X	X	X			X
Indian Creek	Mile 0.0 to Origin			X	X	X	X			X
Panther Branch	Mile 0.0 to Origin			X	X	X	X			X
Tellico River	Mile 41.0 to 50.0 (TN - NC Line)	X	X	X	X	X	X			X
Sycamore Creek	Mile 0.0 to Origin			X	X	X	X			X
Rough Ridge Creek	Mile 0.0 to Origin			X	X	X	X			X
Little Tennessee River	Mile 19.0 to 30.0	X	X	X	X	X	X	X	X	
Citico Creek	Mile 4.5 to 16.0			X	X	X	X		X	
Jakes Creek	Mile 0.0 to 3.0			X	X	X	X			X
Slide Hollow	Mile 0.0 to 2.0			X	X	X	X		X	
Little Citico Creek	Mile 0.0 to 3.5			X	X	X	X			X
Jake Best Creek	Mile 0.0 to Origin			X	X	X	X			X
Doublecamp Creek	Mile 0.0 to Origin			X	X	X	X			X
Mill Branch	Mile 0.0 to Origin			X	X	X	X			X
Flint Branch	Mile 0.0 to Origin			X	X	X	X			X
Crowder Branch	Mile 0.0 to Origin			X	X	X	X			X
Citico Creek	Mile 16.0 to Origin			X	X	X	X			X
N. Fk Citico Creek	Mile 0.0 to Origin			X	X	X	X			X
Indian Valley Br	Mile 0.0 to Origin			X	X	X	X			X
South Fork Citico Creek	Mile 0.0 to Origin			X	X	X	X			X
Ike Camp Branch	Mile 0.0 to Origin			X	X	X	X			X
Falls Branch	Mile 0.0 to Origin			X	X	X	X			X
Cochran Creek	Mile 0.0 to mile 2.0			X	X	X	X		X	
Abrams Creek	Mile 0.0 to Origin			X	X	X	X			X
Panther Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Bell Cove Branch	Mile 0.0 to Origin			X	X	X	X		X	
Kingfisher Creek	Mile 0.0 to Origin			X	X	X	X		X	
Buckshank Branch	Mile 0.0 to Origin			X	X	X	X		X	
Rabbit Creek	Mile 0.0 to Origin			X	X	X	X			X
Hannah Branch	Mile 0.0 to Origin			X	X	X	X			X
Peckerwood Br	Mile 0.0 to Origin			X	X	X	X			X
Wilson Branch	Mile 0.0 to Origin			X	X	X	X		X	
Stony Branch	Mile 0.0 to Origin			X	X	X	X		X	
Arbutus Branch	Mile 0.0 to Origin			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Forge Creek	Mile 0.0 to Origin			X	X	X	X			X
Coalen Ground Br	Mile 0.0 to Origin			X	X	X	X		X	
Bower Creek	Mile 0.0 to Origin			X	X	X	X			X
Tipton Sugar Cove	Mile 0.0 to Origin			X	X	X	X		X	
Ekanneetlee Br	Mile 0.0 to Origin			X	X	X	X			X
Tater Branch	Mile 0.0 to Origin			X	X	X	X		X	
McCaulley Branch	Mile 0.0 to Origin			X	X	X	X		X	
Rowans Branch	Mile 0.0 to Origin			X	X	X	X			X
Anthony Creek	Mile 0.0 to Origin			X	X	X	X			X
Shop Creek	Mile 0.0 to Origin			X	X	X	X			X
Tabcat Creek	Mile 0.0 to Origin			X	X	X	X			X
Parson Branch	Mile 0.0 to Origin			X	X	X	X			X
Bible Creek	Mile 0.0 to Origin			X	X	X	X			X
Slickrock Creek	Tennessee portion			X	X	X	X			X
Little Slickrock Cr	Mile 0.0 to Origin			X	X	X	X			X
Little Tennessee River	Mile 30.0 to 49.7 (TN.-N.C. Line)	X	X	X	X	X	X		X	
Morgan Branch	Mile 0.0 to Origin			X	X	X	X			
Abrams Branch	Mile 0.0 to Origin			X	X	X	X			
First Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Tennessee River	Mile 601.1 to 636.6 (Little River)	X	X	X	X	X	X	X		
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Gallagher Creek	Mile 0.0 to Origin			X	X	X	X			
Turkey Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek #1	Mile 0.0 to Origin	X	X	X	X	X	X			
Ten Mile Creek	From Sink to Origin			X	X	X	X			
Sinking Creek #2	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	Mile 0.0 to Origin			X	X	X	X			
Lackey Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Little River	Mile 0.0 to 33.0	X	X	X	X	X	X			
Polecat Branch	Mile 0.0 to Origin			X	X	X	X			
Stock Creek	Mile 0.0 to Origin			X	X	X	X			
McCall Branch	Mile 0.0 to Origin			X	X	X	X			
Russell's Branch	Mile 0.0 to Origin			X	X	X	X			
Pistol Creek	Mile 0.0 to Origin			X	X	X	X			
Duncan Branch	Mile 0.0 to Origin			X	X	X	X			
Culton Creek	Mile 0.0 to Origin			X	X	X	X			
Tedford Br	Mile 0.0 to Origin			X	X	X	X			
Hesse Creek	Upper 5 miles			X	X	X	X		X	
Cane Creek	Upper 2.0 miles			X	X	X	X		X	
Beard Cane Cr	Upper 1.5 miles			X	X	X	X		X	
Little River	Mile 33.0 to Origin	X		X	X	X	X			X
M. Pr. Little River	Mile 0.0 to Origin			X	X	X	X			X
W. Prong Little R.	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Mile 0.0 to Origin			X	X	X	X			X
Meadow Br	Mile 0.0 to Origin			X	X	X	X			X
Spruce Flats Br	Mile 0.0 to Origin			X	X	X	X			X
Sams Creek	Mile 0.0 to Origin			X	X	X	X			X
Thunderhead Pr	Mile 0.0 to Origin			X	X	X	X			X
Shut-in Cr	Mile 0.0 to Origin			X	X	X	X			X
Lynn Camp Prong	Mile 0.0 to Origin			X	X	X	X			X
Marks Creek	Mile 0.0 to Origin			X	X	X	X			X
Meigs Creek	Mile 0.0 to Origin			X	X	X	X			X
Little Greenbriar Creek	Mile 0.0 to Origin			X	X	X	X			X
Mannis Branch	Mile 0.0 to Origin			X	X	X	X			X
Blanket Creek	Mile 0.0 to Origin			X	X	X	X			X
Shields Branch	Mile 0.0 to Origin			X	X	X	X			X
Jakes Creek	Mile 0.0 to Origin			X	X	X	X			X
Newt Prong	Mile 0.0 to Origin			X	X	X	X			X
Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Fish Camp Prong	Mile 0.0 to Origin			X	X	X	X			X
Goshen Prong	Mile 0.0 to Origin			X	X	X	X			X
Silers Prong	Mile 0.0 to Origin			X	X	X	X			X
Rich Branch	Mile 0.0 to Origin			X	X	X	X			X
Rough Creek	Mile 0.0 to Origin			X	X	X	X			X
Meigs Post Prong	Mile 0.0 to Origin			X	X	X	X			X
Grouse Creek	Mile 0.0 to Origin			X	X	X	X			X
Tennessee River	Mile 636.6 to 638.6	X	X	X	X	X	X	X		
Tennessee River	Mile 638.6 to 640.0		X	X	X	X	X	X		
Tennessee River	Mile 640.0 to 643.4	X	X	X	X	X	X	X		
Tennessee River	Mile 643.4 to 646.4		X	X	X	X	X	X		

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Tennessee River	Mile 646.4 to 652.2	X	X	X	X	X	X	X		
Knob Creek	Mile 0.0 to Origin			X	X	X	X			
Flenniken Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.0 to Origin			X	X	X	X			
Fourth Creek	Mile 0.0 to Origin			X	X	X	X			
Third Creek	Mile 0.0 to 4.9			X	X	X	X			
Third Creek	Mile 4.9 to Origin	X	X	X	X	X	X			
Second Creek	Mile 0.0 to Origin		X	X	X	X	X			
First Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface water named and unnamed in the Upper Tennessee River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.09 Clinch River Basin

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Clinch River	Mile 0.0 to 4.4 (Emory River)	X	X	X	X	X	X	X		
Emory River	Mile 0.0 to Origin	X	X	X	X	X	X			
Little Emory River	Mile 0.0 to Origin	X	X	X	X	X	X			
Middle Fork Little Emory River	Mile 0.0 to Origin			X	X	X	X			
Davis Branch	Mile 0.0 to 0.2			X	X	X	X			
Unnamed Tributary	At Emory River (Mile 16.4); Mile 0.0 to 1.0			X	X	X	X			
Crooked Fork Creek	Mile 0.0 to 4.9			X	X	X	X			
Unnamed Tributary	At Crooked Fork Creek (Mile 4.9); Mile 0.0 to Origin			X	X	X	X			
Crooked Fork Creek	Mile 4.9 to Origin	X		X	X	X	X			
Flat Fork Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Unnamed Tributary	At Flat Fork (Mile 2.3); Mile 0.0 to Origin			X	X	X	X		X	
Stockstill Creek	Mile 0.0 to Origin			X	X	X	X			
Obed River	Mile 0.0 to 40.1			X	X	X	X			
Daddy's Creek	Mile 0.0 to Origin			X	X	X	X			
Basses Creek	Mile 0.0 to Origin			X	X	X	X			
Fox Creek	Mile 0.0 to Origin			X	X	X	X			
Scantling Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Scantling Branch (Mile 1.2); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Obed River (Mile 34.6); Mile 0.0 to Origin			X	X	X	X			
Obed River	Mile 40.1 to Origin	X	X	X	X	X	X			
Unnamed Tributary	At Obed River (Mile 45.4); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 4.4 to 12.0 (Poplar Creek)	X	X	X	X	X	X	X		
Poplar Creek	Mile 0.0 to 0.5		X	X	X	X	X			
Poplar Creek	Mile 0.5 to Origin			X	X	X	X			
East Fork Poplar Creek	Mile 0.0 to Origin			X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Indian Creek	At Poplar Creek (Mile 14.3); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 12.0 to 20.0	X	X	X	X	X	X			
White Oak Creek	Mile 0.0 to Origin			X	X		X			
Melton Branch	Mile 0.0 to Origin			X	X		X			
Clinch River	Mile 20.0 to 39.6	X	X	X	X	X	X	X		

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Beaver Creek	Mile 0.0 to 8.4	X	X	X	X	X	X			
Beaver Creek	Mile 8.4 to 10.4		X	X	X	X	X			
Beaver Creek	Mile 10.4 to 17.5	X	X	X	X	X	X			
Beaver Creek	Mile 17.5 to 17.9		X	X	X	X	X			
Beaver Creek	Mile 17.9 to 21.6	X	X	X	X	X	X			
Beaver Creek	Mile 21.6 to 23.6			X	X	X	X			
Beaver Creek	Mile 23.6 to 29.4	X	X	X	X	X	X			
Beaver Creek	Mile 29.4 to 31.4			X	X	X	X			
Beaver Creek	Mile 31.4 to Origin	X	X	X	X	X	X			
Unnamed Tributary	At Beaver Creek (Mile 44.1); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 39.6 to 41.1	X	X	X	X	X	X	X		
Scarboro Creek	Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 41.1 to 46.7	X	X	X	X	X	X	X		
Bull Run Creek	Mile 0.0 to 1.0			X	X	X	X			
Bull Run Creek	Mile 1.0 to Origin	X		X	X	X	X			
Nelson Branch	Mile 0.0 to Origin			X	X	X	X			
Blaze Branch	At Nelson Branch (Mile 5.0); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 46.7 to 47.8	X	X	X	X	X	X	X		
Worthington Branch	At Clinch River (Mile 47.8); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 47.8 to 50.7	X	X	X	X	X	X	X		
Braden Branch	At Clinch River (Mile 50.7); Mile 0.0 to 1.7			X	X		X			
Braden Branch	Mile 1.7 to Origin			X	X	X	X			
Clinch River	Mile 50.7 to 51.1	X	X	X	X	X	X	X		
Unnamed Tributary	At Clinch River (Mile 51.1); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 51.1 to 61.5	X	X	X	X	X	X	X		
Clinch River	Mile 61.5 to 66.2	X	X	X	X	X	X			
Hinds Creek	At Clinch River (Mile 65.0); Mile 0.0 to Origin			X	X	X	X			
Buffalo Creek	Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 66.2 to 79.8	X	X	X	X	X	X		X	
Cane Creek	At Clinch River (Mile 71.3); Mile 0.0 to Origin			X	X	X	X			
Blowing Spring Fork	At Cane Creek (Mile 1.9); Mile 0.0 to Origin			X	X	X	X			
Coal Creek	At Clinch River (Mile 75.0); Mile 0.0 to Origin			X	X	X	X		X	
Unnamed Tributary	At Coal Creek (Mile 8.6); Mile 0.0 to Origin			X	X	X	X			
Clinch River	Mile 79.8 to 202.1 (Virginia Stateline)	X	X	X	X	X	X			
Cove Creek	Mile 0.0 to 15.1	X	X	X	X	X	X			
Unnamed Tributary	At Cover Creek (Mile 13.7); Mile 0.0 to Origin			X	X	X	X			
Cove Creek	Mile 15.1 to 16.1		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Cove Creek	Mile 16.1 to Origin	X	X	X	X	X	X			
Bruce (Brush) Creek	Mile 0.0 to Origin			X	X	X	X			
Dog Creek	At Bruce Creek (Mile 0.9); Mile 0.0 toOrigin			X	X	X	X			
Unnamed Trib.	At Dog Creek (Mile 2.0); Mile 0.0 to Origin			X	X	X	X			
Big Creek	At Clinch River (Mile 83.0); Mile 0.0 to 15.6	X	X	X	X	X	X			
Big Creek	Mile 15.6 to 17.6		X	X	X	X	X			
Big Creek	Mile 17.6 to Origin			X	X	X	X			
Ollis Creek	At Big Creek (Mile 20.4); Mile 0.0 to Origin	X	X	X	X	X	X			
Powell River	At Clinch River (Mile 88.8); Mile 0.0 to 115.7	X	X	X	X	X	X			
Gap Creek	At Powell River (Mile 57.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Spring Br.	From Sinkhole to Origin			X	X	X	X			
Russell Creek	At Powell River (Mile 82.4); Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to 2.0			X	X	X	X		X	
White Creek	Mile 0.0 to 2.0			X	X	X	X		X	
Mill Creek	At Clinch River (Mile 98.0); Mile 0.0 to Origin			X	X	X	X			
Byram's Creek	At Mill Creek (Mile 0.5); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Byram's Creek (Mile 2.3); Mile 0.0 to Origin			X	X	X	X			
Ball Creek	Mile 0.0 to Origin	X		X	X	X	X		X	
Poorland Creek	At Clinch River (Mile 104.2); Mile 0.0 to Origin			X	X	X	X			
Dry Tributary	At Poorland Creek (Mile 2.5); Mile 0.0 to Waste Outfall			X	X		X			
Hunting Creek	At Clinch River (Mile 118.3); Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Hunting Creek (Mile 2.0); Mile 0.0 to Origin			X	X	X	X			
Big War Creek	At Clinch River (Mile 164.4); Mile 0.0 to 8.0			X	X	X	X			
Flat Gap Creek	At Big War Branch (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			
Big War Creek	Mile 8.0 to Origin			X	X	X	X			
North Fork Clinch River	At Clinch River (Mile 192.0); Mile 0.0 to 2.2			X	X	X	X		X	
All other surface waters named and unnamed in the Clinch River Basin, with the exception of wet weather conveyances, which have not been specifically treated shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.10 French Broad River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
French Broad River	Mile 0.0 to 102.2 (N. Carolina-Tenn Line)	X	X	X	X	X	X			
Hines Creek	Mile 0.0 to Origin		X	X	X	X	X			
Unnamed Tributary	At Hines Creek (Mile 1.7)			X	X		X			
Unnamed Tributary	At Hines Creek (Mile 3.7)			X	X		X			
Cement Mill Creek	Mile 0.0 to Origin		X	X	X	X	X			
Boyds Creek	Mile 0.0 to Origin		X	X	X	X	X			
Unnamed Tributary	At Boyds Creek (Mile 9.7)			X	X		X			
Unnamed Tributary	At Boyds Creek (Mile 11.5)			X	X		X			
Little Pigeon River	Mile 0.0 to 2.9	X	X	X	X	X	X			
Gist (Guess) Creek	Mile 0.0 to Origin			X	X	X	X			
Little Pigeon River	Mile 2.9 to 4.8		X	X	X	X	X			
W. Prong Little Pigeon R.	Mile 0.0 to 4.5	X	X	X	X	X	X			
W. Prong Little Pigeon R.	Mile 4.5 to 7.9	X	X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 7.9 to 8.8		X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 8.8 to 13.0	X	X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 13.0 to 14.0		X	X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 14.0 to 19.0		X	X	X	X	X		X	
Dudley Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Dudley Creek	Mile 0.0 to Origin			X	X	X	X		X	
Roaring Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Baskins Creek	Mile 0.0 to Origin			X	X	X	X		X	
Norton Creek	Mile 0.0 to Origin			X	X	X	X			X
Leconte Creek	Mile 0.0 to Origin			X	X	X	X		X	
W. Prong Little Pigeon R.	Mile 19.0 to Origin	X		X	X	X	X			X
Twomile Creek	Mile 0.0 to Origin			X	X	X	X			X
Fighting Creek	Mile 0.0 to Origin			X	X	X	X			X
Sugarland Branch	Mile 0.0 to Origin			X	X	X	X			X
Big Branch	Mile 0.0 to Origin			X	X	X	X			X
Road Prong	Mile 0.0 to Origin			X	X	X	X			X
Cole Branch	Mile 0.0 to Origin			X	X	X	X			X
Alum Cave Creek	Mile 0.0 to Origin			X	X	X	X			X
Walker Camp Pr	Mile 0.0 to Origin			X	X	X	X			X
Little Pigeon River	Mile 4.8 to 20.3	X	X	X	X	X	X			
Little Pigeon River	Mile 20.3 to Origin	X		X	X	X	X		X	
E.F. Little Pigeon R.	Mile 0.0 to Origin	X	X	X	X	X	X			
Dunn Creek	Mile 0.0 to 15.8	X	X	X	X	X	X		X	
Dunn Creek	Mile 15.8 to Origin	X	X	X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Ogle Springs Br	Mile 0.0 to Origin			X	X	X	X			
Bird Creek	Mile 0.0 to Origin			X	X	X	X			
Webb Creek	Mile 0.0 to Great Smoky Mtns Pk Boundary (Mile 5.8)			X	X	X	X		X	
Soak Ash Creek	Mile 0.0 to Origin			X	X	X	X			X
Timothy Creek	Mile 0.0 to Origin			X	X	X	X			X
Redwine Creek	Mile 0.0 to Origin			X	X	X	X			X
Noisy Creek	Mile 0.0 to Origin			X	X	X	X			X
Texas Creek	Mile 0.0 to Origin			X	X	X	X			X
Webb Creek	Great Smoky Mts boundary to origin			X	X	X	X			X
Copeland Creek	Mile 0.0 to Origin			X	X	X	X		X	
Injun Creek	Mile 0.0 to Origin			X	X	X	X		X	
Rhododendron Creek	Mile 0.0 to Origin			X	X	X	X		X	
Porters Creek	Mile 0.0 to Origin			X	X	X	X		X	
False Gap Prong	Mile 0.0 to Origin			X	X	X	X		X	
Kalanu Prong	Mile 0.0 to Origin			X	X	X	X		X	
Long Branch	Mile 0.0 to Origin			X	X	X	X		X	
Cannon Creek	Mile 0.0 to Origin			X	X	X	X		X	
Lowes Creek	Mile 0.0 to Origin			X	X	X	X		X	
Boulevard Prong	Mile 0.0 to Origin			X	X	X	X		X	
Shutts Prong	Mile 0.0 to Origin			X	X	X	X		X	
Middle Prong Little Pigeon	Mile 0.0 to Origin			X	X	X	X		X	
Ramsey Prong	Mile 0.0 to Origin			X	X	X	X		X	
Chapman Prong	Mile 0.0 to Origin			X	X	X	X		X	
Eagle Rocks Branch	Mile 0.0 to Origin			X	X	X	X		X	
Lost Prong	Mile 0.0 to Origin			X	X	X	X		X	
Buck Fork	Mile 0.0 to Origin			X	X	X	X		X	
Muddy Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin	X		X	X	X	X			
City Spring Tributary	Mile 0.0 to Origin			X	X	X	X			
Indian Creek	Mile 0.0 to Origin			X	X	X	X			
Ball Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Ball Creek (Mile 2.9); Mile 0.0 to Origin			X	X		X			
Leadvale Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin			X	X	X	X			
Nolichucky River	Mile 0.0 to 5.3	X	X	X	X	X	X			
Long Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Nolichucky River	Mile 5.3 to 7.7		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Nolichucky River	Mile 7.7 to 100.8 (N. Carolina-Tenn Line)	X	X	X	X	X	X			
Slate Creek	Mile 0.0 to Origin			X	X	X	X			
Bent Creek	Mile 0.0 to Origin			X	X	X	X			
Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Williams Branch	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to 49.0		X	X	X	X	X			
Lick Creek	Mile 49.0 to Origin	X	X	X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
War Branch	Mile 0.0 to 0.5			X	X	X	X			
Unnamed Tributary	At Lick Creek (Mile 36.1); Mile 0.0 to Origin			X	X		X			
Little Chucky Creek	Mile 0.0 to Origin			X	X	X	X			
Mosheim Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Mosheim Branch (Mile 2.0); Mile 0.0 to Origin			X	X		X			
Unnamed Tributary	At Little Chucky Creek (Mile 17.2); Mile 0.0 to Origin			X	X	X	X			
Gap Creek	Mile 0.0 to Origin			X	X	X	X			
Furness Branch	Mile 0.0 to Origin			X	X	X	X			
Cove Creek	Mile 0.0 to Origin			X	X	X	X			
Flag Branch	Mile 0.0 to Origin			X	X	X	X			
Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Crazy Creek	Sinkhole to Origin			X	X	X	X			
Unnamed Tributary	At Crazy Creek (Mile 1.3); Mile 0.0 to 0.5			X	X	X	X			
Unnamed Tributary	Mile 0.5 to Origin			X	X		X			
Camp Creek	Mile 0.0 to Origin		X	X	X	X	X			X
Jennings Creek	Mile 0.0 to Origin			X	X	X	X			X
Dry Creek	Mile 0.0 to 1.3			X	X	X	X			
Dry Creek	Mile 1.3 to Origin			X	X	X	X			X
Davis Creek	Mile 0.0 to Origin			X	X	X	X			X
College Creek	Mile 0.0 to Origin			X	X	X	X			
Moon Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Little Limestone Creek	Mile 0.0 to Origin			X	X	X	X			
Horse Creek	Mile 0.0 to Origin			X	X	X	X			X
Squibb Branch	Mile 0.0 to Origin			X	X	X	X			X
Cassi Creek, East and West Fork	Mile 0.0 to Origin			X	X	X	X			X
Painter Creek	Mile 0.0 to Origin			X	X	X	X			X
Clarks Creek	Mile 0.0 to Origin			X	X	X	X			X
Devil Fork Branch	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Long Arm Branch	Mile 0.0 to Origin			X	X	X	X			X
Chigger Branch	Mile 0.0 to Origin			X	X	X	X			X
Dry Creek	Mile 0.0 to Origin			X	X	X	X			X
Ramsey Creek	Mile 0.0 to Origin			X	X	X	X			X
Briar Creek	Mile 0.0 to Origin			X	X	X	X			X
Straight Creek	Mile 0.0 to Origin			X	X	X	X			X
Bumpus Cove Creek	Mile 0.0 to Origin			X	X	X	X			X
Broad Shoal Creek	Mile 0.0 to Origin			X	X	X	X			X
California Creek	Mile 0.0 to Origin			X	X	X	X			X
North Indian Creek	Upstream of Erwin	X	X	X	X	X	X			X
Rock Creek	Mile 0.0 to Origin			X	X	X	X			X
Duck Creek	Mile 0.0 to Origin			X	X	X	X			X
Red Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Clear Fork Branch	Mile 0.0 to Origin			X	X	X	X			X
South Indian Creek	Mile 0.0 to Origin			X	X	X	X			X
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Granny Lewis Creek	Mile 0.0 to Origin			X	X	X	X			X
Lower Higgins Creek	Mile 0.0 to Origin			X	X	X	X			X
Birchfield Camp Br	Mile 0.0 to Origin			X	X	X	X			X
Big Branch	Mile 0.0 to Origin			X	X	X	X			X
Spivey Creek	Mile 0.0 to Origin			X	X	X	X			X
Coffee Ridge Cr	Mile 0.0 to Origin			X	X	X	X			X
Watts Branch	Mile 0.0 to Origin			X	X	X	X			X
Tumbling Creek	Mile 0.0 to Origin			X	X	X	X			X
Rocky Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Flint Creek	Mile 0.0 to Origin			X	X	X	X			X
Devil Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Sams Creek	Mile 0.0 to Origin			X	X	X	X			X
Upper Higgins Creek	Mile 0.0 to Origin			X	X	X	X			X
E. Fk Higgins Cr	Mile 0.0 to Origin			X	X	X	X			X
Rice Creek	Mile 0.0 to Origin			X	X	X	X			X
Jones Creek	Mile 0.0 to Origin			X	X	X	X			X
Long Branch	Mile 0.0 to Origin			X	X	X	X			X
Pigeon River	Mile 0.0 to 25.9 (Tenn-N. Car. Line)		X	X	X	X	X			
Matthew Creek	Mile 0.0 to Origin			X	X	X	X		X	
Sinking Creek	Mile 0.0 to 5.2		X	X	X	X	X			X
Sinking Creek	Mile 5.2 to Origin	X		X	X	X	X		X	
Cosby Creek	Mile 0.0 to 4.3			X	X	X	X		X	
Cosby Creek	Mile 4.3 to Origin			X	X	X	X			X
N. Fork Bogard Cr	Mile 0.0 to Origin			X	X	X	X		X	
Indian Camp Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Gulf Fork Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Trail Fork Big Creek	Mile 0.0 to Origin			X	X	X	X		X	
Dry Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Bailey Branch	Mile 0.0 to Origin			X	X	X	X		X	
Bear Branch	Mile 0.0 to Origin			X	X	X	X		X	
Laurel Fork Creek	Mile 0.0 to Origin			X	X	X	X			X
Moss Camp Creek	Mile 0.0 to Origin			X	X	X	X			X
Deep Gap Creek	Mile 0.0 to Origin			X	X	X	X			X
M. Prong Gulf Fork	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Mile 0.0 to Origin			X	X	X	X			X
Brown Gap Creek	Mile 0.0 to Origin			X	X	X	X			X
Tom Creek	Mile 0.0 to Origin			X	X	X	X		X	
Wolf Creek	Mile 0.0 to 2.0			X	X	X	X		X	
Wolf Creek	Mile 2.0 to Origin			X	X	X	X			X
Brush Creek	Mile 0.0 to 1.0			X	X	X	X		X	
Paint Creek	Mile 0.0 to Origin			X	X	X	X			X
All other surface waters named and unnamed in the French Broad River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.11 Holston River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Holston River	Mile 0.0 to 131.5 (Church Hill Bridge)	X	X	X	X	X	X			
Unnamed Branch	At Holston River (Mile 1.0); Mile 0.0 to Origin			X	X	X	X			
Sand Branch	Mile 0.0 to Origin			X	X	X	X			
Swan Pond Creek	Mile 0.0 to 5.0			X	X	X	X			
Pratt Branch	Mile 0.0 to Origin			X	X	X	X			
Woods Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Holston River (Mile 6.7); Mile 0.0 to Origin			X	X	X	X			
Maccash Branch	At Holston River (Mile 10.8); Mile 0.0 to Origin			X	X	X	X			
Roseberry Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Roseberry Creek (Mile 1.7); Mile 0.0 to 0.5			X	X	X	X			
Unnamed Branch	Mile 0.5 to 0.7			X	X	X	X			
Big Flat Creek	Mile 0.0 to 8.0		X	X	X	X	X			
Little Flat Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At L. Flat Creek (Mile 1.3); Mile 0.0 to Origin			X	X	X	X			
Big Flat Creek	Mile 8.0 to Origin			X	X	X	X			
Lyon Creek	Mile 0.0 to 0.3		X	X	X	X	X			
Lyon Creek	Mile 0.3 to 1.9		X	X	X	X	X			
Unnamed Branch	At Lyon Creek (Mile 1.9); Mile 0.0 to Origin			X	X	X	X			
Lyon Creek	Mile 1.9 to Origin			X	X	X	X			
Unnamed Branch	At Lyon Creek (Mile 2.7); Mile 0.0 to Origin			X	X	X	X			
Richland Creek	At Holston River (Mile 27.1); Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	At Holston River (Mile 30.4); Mile 0.0 to Origin			X	X	X	X			
Lost Creek at New Market	Sink at Mile 1.9 to Origin			X	X	X	X			
Buffalo Creek	Below Buffalo Springs			X	X	X	X		X	
Mossy Creek	At Holston River (Mile 52.4); Mile 0.0 to 3.9	X	X	X	X	X	X			
Mossy Creek	Mile 3.9 to Origin		X	X	X	X	X		X	
Unnamed Branch	At Holston River (Mile 55.0); Mile 0.0 to Origin			X	X	X	X			
German Creek	At Holston River (Mile 70.2); Mile 0.0 to 8.1	X	X	X	X	X	X			
German Creek	Mile 8.1 to Origin			X	X	X	X			
Turkey Creek	At Holston River (Mile 75.2); Mile 0.0 to 1.2	X	X	X	X	X	X			
Turkey Creek	Mile 1.2 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Spring Creek	At Holston River (Mile 76.0); Mile 0.0 to 1.2	X	X	X	X	X	X			
Spring Creek	Mile 1.2 to Origin			X	X	X	X			
Thompson Creek	Mile 0.0 to Origin			X	X	X	X			
Fall Creek	At Holston River (Mile 80.7); Mile 0.0 to 1.0	X	X	X	X	X	X			
Fall Creek	Mile 1.0 to Origin			X	X	X	X			
Poor Valley Creek	At Holston River (Mile 89.2); Mile 0.0 to 6.8	X	X	X	X	X	X			
Mooresburg Branch	Mile 0.0 to 1.6	X	X	X	X	X	X			
Mooresburg Branch	Mile 1.6 to Origin			X	X	X	X			
Poor Valley Creek	Mile 6.8 to Origin			X	X	X	X			
Beech Creek	At Holston River (Mile 108.8); Mile 0.0 to Origin			X	X	X	X			
Big Creek (Stanley Prong)	Holston River (Mile 109.1); Mile 0.0 to Origin	X	X	X	X	X	X		X	
Forgey Creek	At Holston River (Mile 116.9); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Forgey Creek (Mile 1.1); Mile 0.0 to 1.0			X	X		X			
Stoney Point Creek	At Holston River (Mile 123.0); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Stoney Point Creek (Mile 0.2); Mile 0.0 to Origin			X	X	X	X			
Bradley Creek	At Holston River (Mile 128.8); Mile 0.0 to Origin	X		X	X	X	X			
Holston River	Mile 131.5 to Origin (Mile 142.2)			X	X	X	X			
Alexander Creek	At Holston River (Mile 131.9); Mile 0.0 to 3.4	X	X	X	X	X	X		X	
Unnamed Branch	At Alexander Creek (Mile 3.4); Mile 0.0 to 0.3			X	X	X	X			
Alexander Creek	Mile 3.4 to Origin			X	X	X	X		X	
Smith Creek	At Holston River (Mile 135.5); Mile 0.0 to Origin			X	X	X	X			
Arnott Branch	At Holston River (Mile 137.9); Mile 0.0 to Origin			X	X	X	X			
North Fork Holston River	Mile 0.0 to 5.2 (Tenn-Virginia Line)			X	X		X			
South Fork Holston River	Mile 0.0 to 2.3		X	X	X					
Reedy Creek	Mile 0.0 to 7.1		X	X	X	X	X			
Reedy Creek	Mile 7.1 to Tenn-Virginia Line	X	X	X	X	X	X			
South Fork Holston River	Mile 2.3 to 5.7		X	X	X					
Horse Creek	Mile 0.0 to 1.3		X	X	X	X	X			
Horse Creek	Mile 1.3 to Origin			X	X	X	X			
Little Horse Creek	At Horse Creek (Mile 3.6); Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Dolan Branch	At Little Horse Creek (Mile 2.8); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At S.F. Holston River (Mile 4.0); Mile 0.0 to Origin		X	X	X	X	X			
South Fork Holston River	Mile 5.7 to 19.6	X	X	X	X	X	X		X	
Kendrick Creek	Mile 0.0 to 1.0			X	X	X	X		X	
Kendrick Creek	Mile 1.0 to Origin			X	X	X	X			
Fall Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At S. F. Holston River (Mile 13.6); Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	At S. F. Holston River (Mile 14.1); Mile 0.0 to Origin			X	X	X	X			
Ford Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Ford Creek (Mile 1.3); Mile 0.0 to Origin		X	X	X	X	X			
Cedar Creek	At S. F. Holston (Mile 18.0); Mile 0.0 to 2.3			X	X	X	X			
Unnamed Branch	At Cedar Creek (Mile 2.3); Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	Mile 2.3 to Origin			X	X	X	X			
Watauga River	At S. F. Holston (Mile 19.6); Mile 0.0 to 15.0	X	X	X	X	X	X			
Boone's Creek	Mile 0.0 to Origin			X	X	X	X			
Knob Creek	Mile 0.0 to Origin			X	X	X	X			
Watauga River	Mile 15.0 to 16.4		X	X	X	X	X			
Brush Creek	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to Origin			X	X	X	X			
Watauga River	Mile 16.4 to 18.0	X	X	X	X	X	X		X	
Watauga River	Mile 18.0 to 25.8		X	X	X	X	X		X	
Buffalo Creek	At Watauga River (Mile 22.1); Mile 0.0 to Origin			X	X	X	X			
Toll Branch	Mile 0.0 to 0.1			X	X	X	X			
Toll Branch	Mile 0.1 to Origin			X	X	X	X			
Unnamed Branch	Mile 0.2 to Origin			X	X	X	X			
Dry Creek	At Buffalo Creek (Mile 3.3); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Buffalo Creek (Mile 3.0); Mile 0.0 to 0.2			X	X	X	X			
Campbell Creek	At Watauga River (Mile 25.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Campbell Creek (Mile 1.6): Mile 0.0 to Origin			X	X	X	X			
Campbell Branch	Mile 1.6 to Origin			X	X	X	X			
Watauga River	Mile 25.8 to 55.1 (N.C.-Tenn. Line)	X	X	X	X	X	X			X
Stony Creek	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Little Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Pierce Branch	Mile 0.0 to Origin			X	X	X	X		X	
Bartree Branch	Mile 0.0 to Origin			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
North Fork Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Upper Hinkle Branch	Mile 0.0 to Origin			X	X	X	X			
Doe River	Mile 0.0 to 21.0	X	X	X	X	X	X		X	
Laurel Fork Creek	At Doe River (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Fork	Mile 0.0 to Origin			X	X	X	X			X
Wagner Branch	Mile 0.0 to Origin			X	X	X	X			X
Simerly Creek	Mile 0.0 to Origin			X	X	X	X			X
Clarke Creek	Mile 0.0 to Origin			X	X	X	X			X
Tiger Creek	Mile 0.0 to Origin			X	X	X	X			X
Roaring Creek	Mile 0.0 to Origin			X	X	X	X			X
Georges Creek	Mile 0.0 to Origin			X	X	X	X			X
Buck Creek	At Doe River (Mile 20.9); Mile 0.0 to Origin			X	X	X	X			X
Shell Creek	Mile 0.0 to Origin			X	X	X	X			X
Hampton Creek	Mile 0.0 to Origin			X	X	X	X		X	
L. Prong Hampton Creek	Mile 0.0 to Origin			X	X	X	X			X
Sugar Hollow Creek	Mile 0.0 to Origin			X	X	X	X		X	
Hampton Creek	Mile 0.0 to Origin			X	X	X	X		X	
L. Prong Hampton Creek	Mile 0.0 to Origin			X	X	X	X			X
Shell Creek	Mile 0.0 to Origin			X	X	X	X			X
Cove Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Fork Creek	At Doe River (Mile 7.0); Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Fork	Mile 0.0 to Origin			X	X	X	X			X
Wagner Branch	Mile 0.0 to Origin			X	X	X	X			X
Buck Creek	At Doe River (Mile 20.9); Mile 0.0 to Origin			X	X	X	X			X
Doe River	Mile 21.0 to Origin	X	X	X	X	X	X			X
Little Stony Creek	Mile 0.0 to Origin			X	X	X	X			X
Elk River	At Watauga (Mile 46.8); Mile 0.0 to 14.5 (Stateline)			X	X	X	X		X	
Black Branch	Mile 0.0 to Origin			X	X	X	X			X
Row Branch	Mile 0.0 to Origin			X	X	X	X			X
Heaton Branch	Mile 0.0 to Origin			X	X	X	X			X
Little Laurel Branch	Mile 0.0 to Origin			X	X	X	X			X
Cobb Branch	Mile 0.0 to Origin			X	X	X	X		X	
Cress Branch	Mile 0.0 to Origin			X	X	X	X			X

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Roan Creek	At Watauga River (Mile 45.5); Mile 0.0 to 16.7	X	X	X	X	X	X			X
Doe Creek	At Roan Creek (Mile 10.9); Mile 0.0 to Origin			X	X	X	X			X
Spruce Branch	At Doe Creek (Mile 10.9); Mile 0.0 to Origin			X	X	X	X			
Timothy Branch	Mile 0.0 to Origin			X	X	X	X		X	
Campbell's Creek	Mile 0.0 to Origin			X	X	X	X			X
Roan Creek	Mile 16.7 to 17.7			X	X	X	X		X	
Mill Creek	Mile 0.0 to Origin			X	X	X	X			X
Stout Branch	Mile 0.0 to Origin			X	X	X	X			X
Vaught Creek	Mile 0.0 to Origin	X		X	X	X	X			X
Town Creek	At Roan Creek (Mile 17.7); Mile 0.0 to 0.2			X	X	X	X			
Town Creek	Mile 0.2 to Origin			X	X	X	X			
Furnace Creek	At Town Creek (Mile 3.0); Mile 0.0 to Origin			X	X	X	X			X
Goose Creek	At Town Creek (Mile 3.0); Mile 1.5 to Origin			X	X	X	X			X
Patrick Creek	At Goose Creek (Mile 2.6); Mile 0.0 to Origin			X	X	X	X			
Roan Creek	Mile 17.7 to Origin	X		X	X	X	X			X
Corn Creek	Mile 0.0 to Origin			X	X	X	X			X
Forge Creek	Mile 0.0 to Origin			X	X	X	X			X
Brush Fork Creek	Mile 0.0 to Origin			X	X	X	X		X	
Big Dry Run Creek	Mile 0.0 to Origin			X	X	X	X			X
Buffalo Creek	Mile 0.0 to Origin			X	X	X	X		X	
Gap Creek	Mile 0.0 to Origin			X	X	X	X		X	
South Fork Holston River	Mile 19.6 to 35.5 (above Bluff City)	X	X	X	X	X	X			
Muddy Creek	At S. F. Holston (Mile 25.5); Mile 0.0 to 2.6			X	X	X	X			
Booher Creek	At Muddy Creek (Mile 2.6); Mile 0.0 to Origin			X	X	X	X			
Muddy Creek	Mile 2.6 to Origin			X	X	X	X			
Unnamed Branch	At Muddy Creek (Mile 4.9); Mile 0.0 to Origin			X	X	X	X			
Beaver Creek	At S. F. Holston (Mile 29.6); Mile 0.0 to 9.1		X	X	X	X	X			
Back (Beck) Creek	At Beaver Creek (Mile 6.1); Mile 0.0 to Origin			X	X	X	X			
Univac Branch	At Back Creek (Mile 0.5); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Beaver Creek (Mile 7.3); Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	At Beaver Creek (Mile 7.9); Mile 0.0 to Origin			X	X	X	X			
Beeler Road Branch	At Cedar Creek (Mile 3.2); Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Raytheon Branch	At Beeler Road Branch (Mile 1.2); Mile 0.0 to 0.2			X	X		X			
Beaver Creek	Mile 9.1 to 15.3 (Tenn-Virginia Line)		X	X	X	X	X			
Steele Creek	At Beaver Creek (Mile 11.0); Mile 0.0 to Origin			X	X	X	X			
Indian Creek	At S. F. Holston (Mile 35.0); Mile 0.0 to Origin			X	X	X	X			
Booher Creek	At Indian Creek (Mile 3.7); Mile 0.0 to Origin			X	X	X	X			
Unnamed Branch	At Booher Creek (Mile 0.6); Mile 0.0 to Origin			X	X	X	X			
South Fork Holston River	Mile 35.5 to South Holston Dam	X	X	X	X	X	X		X	
Unnamed Branch	At S. F. Holston (Mile 39.1); Mile 0.0 to Origin			X	X	X	X			
South Fork Holston River	South Holston Dam to mile 62.8 (Virginia Line)	X	X	X	X	X	X			
Big Creek	Mile 0.0 to Origin			X	X	X	X			X
Kendrick Creek	Mile 0.0 to Origin			X	X	X	X		X	
Fishdam Creek	Mile 0.0 to Origin			X	X	X	X			X
Sulphur Springs Branch	Mile 0.0 to Origin			X	X	X	X			X
Sharps Creek	Mile 0.0 to Origin			X	X	X	X		X	
Little Jacobs Creek	Mile 0.0 to Origin	X		X	X	X	X			X
Jacobs Creek	At S. F. Holston (Mile 59.8); Mile 0.0 to 3.4	X	X	X	X	X	X			X
Jacobs Creek	Mile 3.4 to 3.6		X	X	X	X	X			X
Jacobs Creek	Mile 3.6 to Origin			X	X	X	X			X
Harpers Creek	Mile 0.0 to Origin			X	X	X	X			X
Rockhouse Run Creek	Mile 0.0 to Origin			X	X	X	X			X
Laurel Creek	Stateline to Origin			X	X	X	X			X
Beaverdam Creek	Stateline to Origin			X	X	X	X			X
London Bridge Br	Stateline to Origin			X	X	X	X		X	
Reservoir Branch	Mile 0.0 to Origin			X	X	X	X		X	
Stillhouse Branch	Mile 0.0 to Origin			X	X	X	X			X
Chalk Branch	Mile 0.0 to Origin			X	X	X	X			X
Chestnut Branch	Mile 0.0 to Origin			X	X	X	X			X
Haunted Hollow Br.	Mile 0.0 to Origin			X	X	X	X			X
Fagall Branch	Mile 0.0 to Origin			X	X	X	X			X
Birch Branch	Mile 0.0 to Origin			X	X	X	X			X
Parks Branch	Mile 0.0 to Origin			X	X	X	X			X
David Blevin Branch	Mile 0.0 to Origin			X	X	X	X		X	
STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS

Johnson Branch	Mile 0.0 to Origin	X	X	X	X		X
Jim Wright Branch	Mile 0.0 to Origin	X	X	X	X		X
Ledford Branch	Mile 0.0 to Origin	X	X	X	X	X	
W. Fk Beaverdam	Mile 0.0 to Origin	X	X	X	X		X
M. Fk Beaverdam	Mile 0.0 to Origin	X	X	X	X		X
E. Fk Beaverdam	Mile 0.0 to Origin	X	X	X	X		X
Lyons Branch	Mile 0.0 to Origin	X	X	X	X		X
Gentry Creek	Mile 0.0 to Origin	X	X	X	X		X
Dry Branch	Mile 0.0 to Origin	X	X	X	X		X
Grindstone Branch	Mile 0.0 to Origin	X	X	X	X		X
Flatwood Branch	Mile 0.0 to Origin	X	X	X	X		X
Corum Branch	Mile 0.0 to Origin	X	X	X	X		X
West Fork Laurel Creek	Mile 0.0 to Origin	X	X	X	X		X
All other surface tributaries named and unnamed in the Holston River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified		X	X	X	X		

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.12 Lower Cumberland River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRT
Cumberland River	Mile 74.6 (Ky-Tenn Line) to 118.3 (Cummings Cr.)	X	X	X	X	X	X	X		
Saline Creek	Mile 0.0 to Hwy 120		X	X	X	X	X			
Saline Creek	Hwy 120 to Fort Campbell boundary		X	X	X	X	X		X	
Saline Creek	Fort Campbell Boundary to Origin		X	X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Long Creek	Highway 49 to Origin			X	X	X	X		X	
Elk Creek	Mile 0.0 to Origin			X	X	X	X			
Wells Creek	Mile 0.0 to Origin			X	X	X	X			
Yellow Creek	Mile 3.4 to Ruskin Cave			X	X	X	X		X	
Cumberland River	Mile 118.3 to 125.3 (Red River)	X	X	X	X	X	X	X		
Cumberland River	Mile 125.3 to 175.7 (Richland Creek)	X	X	X	X	X	X	X		
Red River	Mile 0.0 to 2.0		X	X	X	X	X	X		
Red River	Mile 2.0 to 15.0	X	X	X	X	X	X	X		
Red River	Mile 15.0 to 51.2 (Ky-Tenn Line)	X	X	X	X	X	X			
South Fork Red River	Mile 20.4 (Ky-Tenn Line) to Origin			X	X	X	X			
Big West Fork	Mile 0.0 to 14.6 (Ky-Tenn Line)		X	X	X		X	X		
Little West Fork	Mile 0.0 to 10.4		X	X	X	X	X			
Sulphur Fork	Mile 0.0 to 26.6	X	X	X	X	X	X			
Sulphur Fork	Mile 26.6 to 28.6		X	X	X	X	X			
Sulphur Fork	Mile 28.6 to Origin	X	X	X	X	X	X			
Carr Creek	Mile 0.0 to Origin			X	X	X	X			
Red River	Mile 81.0 (Ky-Tenn Line) to Origin	X	X	X	X	X	X			
Summers Branch	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Sulphur Springs Cr	Mile 0.0 to Origin			X	X	X	X			
Harpeth River	Mile 0.0 to 10.3	X	X	X	X	X	X			
Jones Creek	Mile 0.0 to Origin		X	X	X	X	X			
Town Branch	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 10.3 to 52.8	X	X	X	X	X	X			
Trace Creek	Mile 0.0 to Origin		X	X	X	X	X			
Turnbull Creek	Mile 0.0 to Origin	X	X	X	X	X	X			
Sullivans Branch	Mile 0.0 to Origin		X	X	X	X	X			
Beaver Dam Creek	Mile to 0.0 to Origin		X	X	X	X	X			
Gin Branch	Mile 0.0 to Origin		X	X	X	X	X			
Brush Creek	Mile 0.0 to Origin		X	X	X	X	X			
Caney Fork Creek	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 52.8 to 55.8		X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NR
Harpeth River	Mile 55.8 to 57.8		X	X	X	X	X			
Harpeth River	Mile 57.8 to 61.9 (Little Harpeth)	X	X	X	X	X	X			
Little Harpeth River	Mile 0.0 to Origin		X	X	X	X	X			
Harpeth River	Mile 61.9 to 68.3 (Cartwright Creek)		X	X	X	X	X			
Cartwright Creek	Mile 0.0 to Origin			X	X	X	X			
Harpeth River	Mile 68.3 to 79.0	X	X	X	X	X	X			
West Harpeth River	Mile 0.0 to Origin	X	X	X	X	X	X			
Harpeth River	Mile 79.0 to 85.2		X	X	X	X	X			
Spencer Creek	Mile 0.0 to Origin			X	X	X	X			
Harpeth River	Mile 85.2 to Origin	X	X	X	X	X	X			
Sycamore Creek	Mile 0.0 to 10.0	X	X	X	X	X	X			
Sycamore Creek	Mile 10.0 to Origin	X		X	X	X	X			
Marrowbone Creek	Mile 0.0 to 3.0	X	X	X	X	X	X			
Marrowbone Creek	Mile 3.0 to Origin	X		X	X	X	X			
Cumberland River	Mile 175.7 to 189.5	X	X	X	X	X	X	X		
Richland Creek	Mile 0.0 to Origin			X	X	X	X			
Whites Creek	Mile 0.0 to Origin		X	X	X	X	X			
Ewing Creek	Mile 0.0 to Origin		X	X	X	X	X			
Cumberland River	Mile 189.5 to 216.2 (Old Hickory Dam)	X	X	X	X	X	X	X		
Mill Creek	Mile 0.0 to 11.5		X	X	X	X	X			
Mill Creek	Mile 11.5 to 23.0			X	X	X	X			
Mill Creek	Mile 23.0 to Origin			X	X	X	X			
Stones River	Mile 0.0 to 6.8	X	X	X	X	X	X			
Stoners Creek	Mile 0.0 to Origin			X	X	X	X			
McCrory Creek	Mile 0.0 to Origin			X	X	X	X			
Stones River (Percy Priest Res.)	Mile 6.8 to 38.7 (Confluence-East & West Fork)	X	X	X	X	X	X			
Suggs Creek	Mile 0.0 to Origin			X	X	X	X			
Smith Springs Creek	Mile 0.0 to Origin			X	X	X	X			
Hurricane Creek	Mile 0.0 to Origin			X	X	X	X			
Stewart Creek	Mile 0.0 to Origin			X	X	X	X			
Harts Branch	Mile 0.0 to Origin			X	X	X	X			
Fall Creek & Tributaries	Mile 0.0 to Origin			X	X	X	X			
East Fork Stones River	Mile 0.0 to 44.5 (Near Woodbury)	X	X	X	X	X	X			
Bradley Creek	Mile 0.0 to Origin			X	X	X	X			
Cripple Creek	Mile 0.0 to Origin			X	X	X	X			
East Fork Stones River	Mile 44.5 to 45.2		X	X	X	X	X			
East Fork Stones River	Mile 45.2 to Origin	X	X	X	X	X	X			
West Fork Stones River	Mile 0.0 to 10.0	X	X	X	X	X	X			
Overall Creek	Mile 0.0 to Origin			X	X	X	X			
West Fork Stones River	Mile 10.0 to 15.2		X	X	X	X	X			
West Fork Stones River	Mile 15.2 to Origin	X	X	X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRT
Lytle Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Fork Stones	Mile 0.0 to Origin	X	X	X	X	X	X			
Christmas Creek	Mile 0.0 to Origin			X	X	X	X			
Cumberland River	Mile 216.2 to 309.2 (Caney Fork River)	X	X	X	X	X	X	X		
Drakes Creek	Mile 0.0 to 4.9	X	X	X	X	X	X	X		
Drakes Creek	Mile 4.9 to Origin			X	X	X	X			
Smiths Creek	Mile 0.0 to Origin			X	X	X	X			
Cedar Creek	Mile 0.0 to 2.0	X	X	X	X	X	X	X		
Cedar Creek	Mile 2.0 to Origin			X	X	X	X			
Spencer Creek	Mile 0.0 to 2.8	X	X	X	X	X	X	X		
Spencer Creek	Mile 2.8 to Origin			X	X	X	X			
Bartons Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Big Goose Creek	Mile 0.0 to Origin			X	X	X	X			
Little Goose Creek	Mile 0.0 to Origin			X	X	X	X			
Round Lick Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed in the Lower Cumberland River Basin (and Green River Basin), with the exception of wet weather conveyances, which have not been specifically noted shall be classified.				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.13 Upper Cumberland River Basin.

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Cumberland River	Mile 309.2 to 385.5 (Ky-Tenn Line)	X	X	X	X	X	X	X		
Caney Fork River	Mile 0.0 to 25.4	X	X	X	X	X	X	X	X	
Mulherrin Creek	Mile 0.0 to Origin			X	X	X	X			
Hickman Creek	Mile 0.0 to Origin			X	X	X	X			
Smith Fork Creek	Mile 0.0 to Mile 3.0			X	X	X	X		X	
Smith Fork Creek	Mile 3.0 to Origin			X	X	X	X			
Dry Creek	Mile 0.0 to Origin			X	X	X	X		X	
Jones Fork	Mile 0.0 to Origin			X	X	X	X		X	
Caney Fork River	Mile 25.4 to Origin	X	X	X	X	X	X			
Mine Lick Creek	Mile 0.0 to 5.0	X		X	X	X	X			
Mine Lick Creek	Mile 5.0 to Origin			X	X	X	X			
Falling Water River	Mile 0.0 to 39.0	X		X	X	X	X			
Falling Water River	Mile 39.0 to Origin			X	X	X	X			
Cane Creek	Mile 0.0 to Origin			X	X	X	X			
Pigeon Roost Creek	Mile 0.0 to Origin			X	X	X	X			
Fall Creek	Mile 0.0 to Origin			X	X	X	X			
Pine Creek	Mile 2.4 to Origin			X	X	X	X		X	
Turner Branch	Mile 0.0 to 0.5			X	X	X	X		X	
Sink Creek	Mile 4.6 to Origin			X	X	X	X		X	
Collins River	Mile 0.0 to 43.0	X	X	X	X	X	X			
Mountain Creek	Mile 0.0 to 6.0			X	X	X	X		X	
Charles Creek	Mile 0.0 to 9.0			X	X	X	X		X	
Barren Fork River	Mile 0.0 to 4.5			X	X	X	X			
Barren Fork River	Mile 4.5 to Origin	X	X	X	X	X	X		X	
Hickory Creek	Mile 19.0 to 24.0			X	X	X	X		X	
W.F. Hickory C	Mile 0.0 to Origin			X	X	X	X			
Keel Branch	Mile 0.0 to Origin			X	X	X	X			
Hills Creek	Mile 0.0 to Origin			X	X	X	X		X	
Collins River	Mile 43.0 to 49.0	X		X	X	X	X		X	
Big Creek	Mile 0.0 to 6.0	X		X	X	X	X			
Big Creek	Mile 6.0 to Origin			X	X	X	X			
Collins River	Mile 49.0 to Origin			X	X	X	X			
Caney Fork River	Mile 92.2 to Origin	X	X	X	X	X	X			
Rocky River	Mile 0.0 to 9.0	X	X	X	X	X	X			
Rocky River	Mile 9.0 to 13.0	X	X	X	X	X	X		X	
Rocky River	Mile 13.0 to Origin	X	X	X	X	X	X			
Calfkiller River	Mile 0.0 to 14.1	X	X	X	X	X	X			
Calfkiller River	Mile 14.1 to 30.8	X	X	X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Calfkiller River	Mile 30.8 to Origin	X	X	X	X	X	X		X	
Cane Creek	Mile 1.0 to 8.0	X	X	X	X	X	X		X	
Falls Creek	Mile 0.0 to Origin			X	X	X	X			
Cane Creek	Mile 8.0 to Origin	X	X	X	X	X	X			
Bee Creek	Mile 0.0 to 7.3			X	X	X	X			
Bee Creek	Mile 7.3 to Origin	X		X	X	X	X			
Wilkerson Creek	Mile 0.0 to Origin			X	X	X	X			
Frey Branch	Mile 0.0 to Origin			X	X	X	X			
Roaring River	Mile 0.0 to 29.9			X	X	X	X			
Roaring River	Mile 29.9 to Origin	X		X	X	X	X			
Spring Creek	Mile 0.0 to Origin			X	X	X	X			
Bear Creek	Mile 0.0 to Origin			X	X	X	X			
Carr Creek	Mile 0.0 to 4.2			X	X	X	X			
Carr Creek	Mile 4.2 to Origin	X		X	X	X	X			
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Goose Creek	Mile 0.0 to 12.0			X	X	X	X		X	
Flynns Creek	Mile 0.0 to 5.0			X	X	X	X		X	
Obey River	Mile 0.0 to 7.3	X	X	X	X	X	X		X	
Neely Creek	Mile 0.0 to Origin (3.3 miles)			X	X	X	X		X	
Wolf River	Mile 0.0 to Ky State Line		X	X	X	X	X			
Wolf River	Ky State Line to Origin			X	X	X	X		X	
Town Creek	Mile 0.0 to Origin			X	X	X	X			
Obey River	Mile 7.3 to confluence of East and West Forks	X	X	X	X	X	X			
West Fork Obey River	Mile 0.0 to Origin			X	X	X	X			
East Fork Obey River	Mile 0.0 to Origin	X		X	X	X	X			
Buffalo Cove Creek	Mile 0.0 to Origin			X	X	X	X			
Rock Castle Creek	Mile 0.0 to Origin			X	X	X	X			
Big South Fork Cumberland River	Mile 55.5 (Ky-Tenn Line) to Origin (Mile 77.0)	X	X	X	X	X	X			
No Business Creek	Upper 4.0 miles			X	X	X	X		X	
Parch Corn Creek	Upper 1.5 miles			X	X	X	X		X	
Station Camp Creek	Upper 4.8 miles			X	X	X	X		X	
Laurel Fork Creek	Upper 4.9 miles			X	X	X	X		X	
North White Oak Creek	Upper 3.9 miles			X	X	X	X		X	
Williams Creek	Upper 7.6 miles			X	X	X	X		X	
Pine Creek	Mile 0.0 to 10.5			X	X	X	X			
Pine Creek	Mile 10.5 to Origin	X		X	X	X	X			
New River	Mile 0.0 to 15.0			X	X	X	X			
New River	Mile 15.0 to Origin	X		X	X	X	X			
Clear Fork River	Mile 0.0 to Origin			X	X	X	X			

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
Elk Fork Creek	Mile 1.8 (KY Line) to Origin	X		X	X	X	X			
All other surface waters named and unnamed, within the Upper Cumberland River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

1200-04-04-.14 Barren River Basin

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
West Fork Drakes Creek	Mile 33.0 (stateline) to Origin			X	X	X	X			
Caney Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Dry Fork Creek	Mile 0.0 to Origin			X	X	X	X			
Middle Fork Drakes Creek	Mile 22.2 (stateline) to Origin	X		X	X	X	X			
Sulphur Fork Creek	Mile 9.0 (stateline) to Origin			X	X	X	X			
Dutch Creek	Mile 0.0 to Origin			X	X	X	X			
Trammel Creek	Mile 30.7 (stateline) to Origin			X	X	X	X			
Little Trammel Creek	Mile 4.7 (stateline) to Origin			X	X	X	X			
Long Creek	Mile 14.6 (stateline) to Origin			X	X	X	X			
West Fork Long Creek	Mile 0.0 to Origin			X	X	X	X			
Puncheon Creek	Mile 4.3 (stateline) to Origin			X	X	X	X			
Unnamed Tributary (Adams Spring)	Mile 0.0 to Origin	X		X	X	X	X			
Little Puncheon Creek	Mile 0.0 to Origin			X	X	X	X			
Spring Creek	Mile 0.0 to Origin	X		X	X	X	X			
Salt Lick Creek	Mile 4.7 (stateline) to mile 6.8			X	X	X	X			
Salt Lick Creek	Mile 6.8 to mile 9.9			X	X	X	X		X	
Salt Lick Creek	Mile 9.9 to Origin			X	X	X	X			
Long Fork	Mile 4.5 (stateline) Origin			X	X	X	X			
White Oak Creek	Mile 4.1 (stateline) to Origin			X	X	X	X			
Long Hungry Creek	Mile 0.0 to Origin			X	X	X	X			
Line Creek	Mile 14.2 (stateline) to Origin			X	X	X	X			
Trace Creek	Mile 0.0 to Origin			X	X	X	X			
Little Trace Creek	Mile 0.0 to Origin			X	X	X	X			
All other surface waters named and unnamed, within the Barren River Basin, with the exception of wet weather conveyances, which have not been specifically noted shall be classified				X	X	X	X			

Authority: T.C.A. §§ 69-3-101 et seq. and 4-5-201 et seq.

* If a roll-call vote was necessary, the vote by the Agency on these rulemaking hearing rules was as follows:

Board Member	Aye	No	Abstain	Absent	Signature (if required)
James W. Cameron III	X				
Jill E. Davis	X				
Mayor Kevin Davis				X	
Derek Gernt	X				
John Guoynes	X				
C. Monty Halcomb				X	
Chuck Head	X				
Charlie R. Johnson	X				
Judy Manners				X	
John McClurkan	X				
Frank McGinley	X				
D. Anthony Robinson	X				

I certify that this is an accurate and complete copy of rulemaking hearing rules, lawfully promulgated and adopted by the Tennessee Board of Water Quality, Oil and Gas on 01/15/2013, and is in compliance with the provisions of T.C.A. § 4-5-222.

I further certify the following:

Notice of Rulemaking Hearing filed with the Department of State on: 10/21/09 and 12/16/11

Rulemaking Hearing(s) Conducted on: (add more dates). 12/15/09, 01/05/10, 01/06/10, 01/07/10, 01/13/10, 01/14/10 and 02/23/12

CAROL L. GRICE
STATE OF TENNESSEE NOTARY PUBLIC
DAVIDSON COUNTY, TENN.

Date: January 15, 2013

Signature: James W. Cameron III

Name of Officer: James W. Cameron III

Title of Officer: Chairman

Subscribed and sworn to before me on: January 15, 2013

Notary Public Signature: Carol L. Grice

My commission expires on: June 21, 2016

All rulemaking hearing rules provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.

R E Cooper Jr

Robert E. Cooper, Jr.
Attorney General and Reporter

4-1-13
Date

Department of State Use Only

Filed with the Department of State on: 4/3/13

Effective on: 7/2/13

Tre Hargett
Secretary of State

FILED
2013 APR -3 AM 9:50
SECRETARY OF STATE

Public Hearing Comments

One copy of a document containing responses to comments made at the public hearing must accompany the filing pursuant to T.C.A. § 4-5-222. Agencies shall include only their responses to public hearing comments, which can be summarized. No letters of inquiry from parties questioning the rule will be accepted. When no comments are received at the public hearing, the agency need only draft a memorandum stating such and include it with the Rulemaking Hearing Rule filing. Minutes of the meeting will not be accepted. Transcripts are not acceptable.

2010 Triennial Review of Water Quality Standards

Summary of Public Comments and Tennessee Water Quality Control Board (WQCB) Responses

(Note: in some instances, public comments have been summarized in order to group similar observations by multiple reviewers.)

A. GENERAL COMMENTS: Public Participation Process

Comment A-1. TDEC's notice procedures are inadequate. The public notice for the public meetings was not included in the division's regular notices for permit actions.

Response: The formal rulemaking hearing notice was published on the Secretary of State's website and the department's website. Additionally, emails were sent to previous participants in the process and persons who requested to be notified of rulemaking for water quality standards.

Comment A-2. TDEC's public hearings should be held in the evening or on Saturday.

Response: We have held meetings in the evening at many times in the past and will again in the future. However, in the past, many public meetings have been poorly attended, particularly in the evening. In 2010, we held evening public meetings in Memphis and Knoxville on the subject of the draft 303(d) List. No one attended at either location.

Staff resources are not unlimited and we must consider participation levels when allotting our time. Even if people cannot attend one of our hearings, comments can be submitted by regular mail, fax, or electronic submission.

Comment A-3. I would like a direct response from TDEC regarding my comments.

Response: The department compiles comments and responds to each in this document. This is part of the formal public participation process and is available to be reviewed by others.

B. GENERAL COMMENTS: Legal Considerations and Federal Requirements

Comment B-1. One need only look at the division's water quality assessment reports and the underreporting of water quality impacts to see that water quality standards and the division's assessment processes are inadequate.

Response: The commenter provided as support for this comment the loss of aquatic species, including endangered mussels, due to the widespread impoundment of streams in Tennessee. We agree that the historical impacts of dams have been significant, but many of these projects were completed before the Clean Water Act was enacted. For example, Watts Bar and Douglas reservoirs were impounded in 1942.

We would be happy to consider specific suggestions to either water quality standards or the state's water quality assessment process.

Comment B-2. The goal of the water pollution program is to reduce pollutant levels. With this in mind, it is hard to understand why the criteria levels tend to stay the same rather than be reduced over time.

Response: We understand this comment, particularly in relation to language in the federal Clean Water Act, but would state the goals of the water quality standards process a bit differently: the purpose of clean water goals is to help insure that streams meet their designated uses. Where they do, our goal is to maintain their level of quality. Where they don't, our job is to implement controls over pollutant sources. The criteria provide a guide for both jobs.

It is not part of that strategy to ratchet down criteria levels arbitrarily or automatically.

Comment B-3. The proposed changes do not help the department accomplish its legal mandate to identify and restore impaired waters.

Response: The commenter has not specified a revision in voicing this concern. We consider the changes we have proposed to reflect not only the most current science, but also our years of experience running the regulatory program. Proper setting of standards is a critical tool in our efforts to identify and restore impaired waters as well as to fulfill our other statutory duties.

Comment B-4. NPDES permits should state that exceedence of any water quality standard is a violation.

Response: This prohibition is in the act and is included in standard permit language.

Comment B-5. The changes to the antidegradation statement place an unfair burden on the business community in Tennessee.

Response: The state may not authorize degradation without justifying that the change in water quality is in the public interest. If the commenter has a suggestion on how the administrative burden might be reduced, while maintaining the state's ability to make a proper judgment concerning degradation, we would be happy to consider it. However, most of the changes to the antidegradation statement are to provide clarity to the process and the procedure which should benefit all parties and in one instance the process has been streamlined by the deletion of one public meeting.

Comment B-6. The antidegradation statement should be used to protect Tennessee's aquatic diversity, plus species with special status.

Response: We agree. The characteristics for Exceptional Tennessee Waters include measures of biodiversity and the presence of threatened and endangered species.

C. GENERAL COMMENTS: Miscellaneous

Comment C-1. 1200-04-03 does very little to make a connection between water quantity and quality issues.

Response: We do not agree that we have disregarded the linkage between water quantity and quality in Tennessee. We would point to our promulgation of flow criteria in the last triennial review, the adoption of habitat criteria two triennial reviews ago, and our antidegradation statement which incorporates implementation procedures for not only dischargers, but water withdrawals and habitat alteration projects, as evidence of this success.

Comment C-2. Water quality criteria do not go far enough to regulate water withdrawals.

Response: We do regulate water withdrawals under certain circumstances (see the previous response for more details about the role of water quality standards in water quantity issues). The department gets its regulatory authority from the Water Quality Control Act, which might have to be altered to provide the change envisioned by the commenter.

Other provisions of the rules directly address the requirement to obtain a permit for certain water withdrawals. See Chapter 1200-04-07. In response to this and other comments, we have made changes to the antidegradation statement (in Rule 1200-04-03-.06) to explicitly address how the rule applies to water withdrawals.

Comment C-3. Tennessee's criteria should recognize regional differences in water quality.

Response: We agree and identified a series of reference streams statewide which are monitored to establish the least impacted condition of wadeable streams. The following criteria specifically incorporate the concept of regional variability in water quality: nutrients, color, suspended solids, habitat, pH, dissolved oxygen, and biological integrity.

Comment C-4. The department should set criteria at more stringent levels than those suggested by EPA.

Response: We agree that we have the option to be more stringent than the national criteria suggestions. We would establish criteria more stringent than recommended by EPA if it is determined that specific national criteria are not adequately protective of Tennessee's water resources. The commenter has not suggested any specific changes or a science-based rational for doing so.

Comment C-5. Criteria should be based on whatever is best for Tennessee, not just what EPA suggests.

Response: We agree. Where we have had better ideas regarding criteria levels, we have had no problem proposing them. However; EPA has performed primary research into the effects of pollutants and for most substances, we have not.

Comment C-6. Due to flaws in the water quality assessment process, the department should revise the 2008 305(b) Report before the changes to the water quality standards are finalized.

Response: The most recent 305(b) report was completed in 2010. The new version replaces the 2008 version as our current assessment.

Comment C-7. Under Rule 1200-04-03-.03, the various sections only give the name of the use. The section is composed of the criteria for that use.

Response: We agree and have made this revision. For example, the heading of Rule 1200-04-03-.03(1) will now say: "the criteria for the use of Domestic Water Supply are the following."

D. SPECIFIC COMMENTS: 1200-04-03-.02, General Considerations

Comment D-1. The description of wet weather conveyances should be revised to include the new language adopted by the legislature and incorporated in the Water Quality Control Act.

Response: We agree that since those rules have already gone through the process and become effective, these rules now incorporate that language so that all of the changes regarding wet weather conveyance determinations and associated definitions are not unintentionally deleted.

Comment D-2. The passage of the "wet weather conveyances bill" in 2009 will make it difficult for the department to protect headwater and ephemeral streams, plus biological integrity in Tennessee streams.

Response: We agree that it is imperative to protect headwater streams. But by definition in the law, headwaters that support aquatic life are not wet weather conveyances.

Comment D-3. The section about the public's reasonable uses of waters suggests that industrial use and power generation are just as important as aquatic life protection and recreation. They are not.

Response: The section in question is a listing of reasonable uses, not a ranking. The criteria for recreation and aquatic life protection are generally more stringent, reflecting the greater sensitivities of these uses to pollutants.

Comment D-4. The phrase "economically achievable" in Rule 1200-04-03-.02(4) creates an inappropriate exemption for dischargers in which they can avoid having to install pollution prevention equipment.

Response: A full reading of the passage suggests otherwise.

...existing pollution should be corrected as rapidly as practicable, and future pollution prevented through the best available technology economically achievable or that greater level of technology necessary to meet water quality standards; (emphasis added)

Economics is always a factor and the technology that might be needed to fully treat an effluent may not be available. However, the cited passage is clear that the goal at all times is to meet water quality standards.

E. SPECIFIC COMMENTS: 1200-04-03-.03(2), Criteria for Water Uses, Domestic Water Supply

Comment E-1. Tennessee should adopt the 10 mg/L nitrate drinking water criterion based on the protection of infants (blue baby syndrome).

Response: We agree and have made this revision.

F. SPECIFIC COMMENTS: 1200-04-03-.03(3), Criteria for Water Uses, Fish and Aquatic Life

Comment F-1. Different aquatic species have different sensitivities to pollutants, a fact not considered in the criteria.

Response: EPA develops national criteria for pollutants by conducting toxicity tests (or by incorporating the results of tests conducted by others) for a set number of different types of aquatic life. Criteria are intended to protect the most sensitive species. Additionally, an uncertainty factor is added to provide another level of conservatism to the criteria. Should a more sensitive species be discovered, the criteria can be reevaluated and adjusted.

Comment F-2. Tennessee's dissolved oxygen criterion should be raised to a minimum of 6.0 mg/L in areas not already set at that level or higher.

Response: The present dissolved oxygen criterion of 5.0 mg/L is appropriately protective according to the literature.

Comment F-3. Areas known to contain naturally reproducing mussel populations should have a higher dissolved oxygen criterion. EPA suggests a minimum of 6.5 mg/L in areas not already set at that level or higher.

Response: The national criteria table on EPA's website refers the reader to the 1986 Gold Book regarding dissolved oxygen. In that section, the national criterion is found in Table 1. The one day minimum dissolved oxygen standard for early life stages is 5 mg/L, Tennessee's current criterion.

The number cited by the commenter comes from Table 2 and is a level suggested to prevent any "production impairment" of fish. However, this number is not the national criterion.

Comment F-4. Tennessee's pH criterion should be revised to be more stringent.

Response: The commenter has not suggested a set of alternate values or the reason the alternative would be better for aquatic life. Our view is that our pH criteria are protective and EPA has approved them.

Comment F-5. Tennessee should adopt EPA's new turbidity criterion.

Response: The turbidity number the commenter is referring to is not an instream criterion, but is rather a performance standard for runoff from construction sites. In aquatic systems, many things can cause elevated turbidity levels, many of which are natural. By themselves, turbidity levels are not a good indication of pollution.

Additionally, EPA has withdrawn the proposed turbidity performance standard.

Comment F-6. Tennessee should have a turbidity criterion, since silt is one of the most frequently-cited pollutants.

Response: We agree with the commenter that silt is a frequently-cited pollutant in Tennessee waters. But as stated previously, turbidity measurements are an inaccurate method for assessing silt impairment.

Comment F-7. The state has not proposed criteria for silt, which is currently one of the most frequently-cited pollutants impacting Tennessee waters.

Response: The commenter is correct that we have not proposed a numeric criterion for silt under the fish and aquatic life protection provisions. We have found our narrative criterion for habitat to be the best tool for diagnosing stream impairment due to excessive silt. In fact, it is the basis for the statements we have made about waters that are impaired by silt.

Comment F-8. Tennessee should adopt Illinois' sulfate criterion.

Response: Currently, sulfate would be regulated in Tennessee under our "Toxic Substances" provision [Rule 1200-04-03-.03(3)(g)]. EPA has not recommended a sulfate criterion and we have performed no research to determine the levels needed to protect Tennessee streams, which are considerably different than those found in Illinois. It would be better to keep this criterion narrative at present, which gives us the flexibility to select a level best for our streams, rather than adopt a rigid numeric criterion which may be overly stringent or not protective enough.

Comment F-9. Tennessee should adopt EPA's aluminum national criteria.

Response: Aluminum is not a priority pollutant. Tennessee currently regulates it by way of the narrative "Toxic Substances" criterion. EPA has acknowledged problems with the current numeric national criteria for aluminum. For example, the chronic value is appropriate for situations where both the stream pH and hardness are below 6.6 and 10, respectively. However, relatively few streams have these specific conditions. As pH and hardness increase, aluminum is less toxic. Additionally, EPA also correctly states that many high quality streams have aluminum levels that exceed 87 ug/L.

For these reasons, we will not recommend adopting the national criterion at this time in hopes that it can be refined in the future.

Comment F-10. For numerous toxicants, including selenium, the chronic criteria is much lower than the acute value. Why even bother to have acute criteria?

Response: We need both chronic and acute criteria to protect aquatic life. Chronic criteria are best thought of as average concentrations that should be maintained over time. An acute criterion is a maximum level to not be exceeded at any point.

Without acute criteria, we could not regulate spikes in contaminant levels that might be toxic, but would not significantly raise average levels over time.

Comment F-11. The existing EPA national chronic selenium criterion (5 ug/L) is not protective. A chronic selenium criterion of 2 ug/L should be adopted by Tennessee

Response: The best information available to the department supports continuance of the present criteria for selenium. If better science becomes available we will certainly consider it.

Comment F-12. The 2004 EPA draft selenium national criterion represents more defensible science and should be promulgated instead of the existing national criterion proposed by the department. A criterion based on the 2004 draft guidance would be approved by EPA.

Response: Every indication we have received from EPA in the last year suggests that the 2004 draft no longer represents their current thinking on selenium. Thus, we are less certain than the commenter that EPA would approve an approach based on the 2004 draft, especially when we have little idea how we would implement it.

As noted by the commenter, in our Notice of Rulemaking Hearing draft set of revisions presented to the Water Quality Control Board in 2009, we suggested going to EPA's current national criterion for selenium, which would have been a chronic value of 5 ug/L and a formula for calculating the acute criterion based on the ratio of selenite and selenate in the water. However, we received comments objecting to that formula so we have decided that it would be better to stick with our previous EPA's approved criterion (5 ug/L chronic, 20 ug/L acute) and let the national discussion about selenium continue to a more final resolution. Staying at 5/20 would leave us at the same criteria level as many of our neighboring states. We note that none of the other Region 4 states have adopted the 2004 selenium draft criterion.

Comment F-13: The acute criteria formula originally proposed by the department for selenium is dated and flawed when compared to the acute formula in the 2004 EPA draft, which allows for consideration of the effects of sulfate in reducing the toxicity of selenate. By using these 2004 calculations, selenate is less toxic than selenite.

Response: We agree with the commenter that our original recommendation for the acute selenium formula should be dropped; however, we have changed the acute criterion back to the existing 20 ug/L rather than the approach of the 2004 EPA draft.

The commenter is correct that the 2004 draft EPA selenium formula incorporates sulfate into the calculations and at elevated sulfate levels, selenate can appear to be less toxic than selenite. However, several things should be noted:

1. Sulfate is toxic. As noted by a previous commenter, Illinois has adopted a numeric criterion for sulfate.

2. In their sample calculations, EPA used a 100 mg/L sulfate level (page 24 of the 2004 draft). We have reviewed the ambient water quality data in Tennessee and consider background sulfate levels to generally be much lower. However, streams historically impacted by coal mining activities tend to have much higher levels. Since mining discharges also may discharge selenium, using the sulfate altered formula would potentially allow the discharge of higher amounts of one pollutant, due to the discharge of another pollutant. When these pollutants enter the environment, the oxidation states of each may change which alters their toxicity.

3. As stated in previous comments, the 2004 draft reflects unsettled science. EPA may go in another direction in their next effort.

Comment F-14. Tennessee should not propose adopting the 2004 EPA draft selenium national criterion. EPA intends to publish a new draft by February, 2010.

Response: We will withdraw our recommendation to the board that we adopt the existing national water criterion for selenium. We note that at the time of this writing (November, 2011), there is no new selenium draft guidance, which suggests to us that the science associated with this criterion continues to be in flux.

Comment F-15. Tennessee needs a fish tissue-based criterion, such as suggested in the 2004 EPA draft selenium national criterion.

Response: As stated in the previous response, the latest indications from EPA suggest that they may be moving from a tissue-based criterion to one based on specific organs, such as reproductive parts, as a better indicator of toxicity problems induced by selenium. Particularly because EPA is evaluating recent studies and other data and their position may change based on those, we prefer to wait until EPA publishes its recommended criterion on selenium.

Comment F-16. If Tennessee adopts a fish tissue based criterion for selenium, it should be 4 mg/kg dry weight rather than the value suggested in the 2004 EPA draft selenium national criterion.

Response: We are not recommending a fish tissue-based criterion.

Comment F-17. The board need not promulgate an implementation procedure for a fish tissue-based selenium criterion. Such an implementation procedure, which could include a translator for converting the fish tissue-based criterion into a water concentration, could be developed later as part of the permitting strategy. Thus the board would be free to move forward with promulgation.

Response: The department agrees in principle that the board need not promulgate an implementation procedure if it were to go forward with a chronic selenium criterion based on fish tissue. But as a practical matter, we do not think a decoupling of the criterion/implementation procedure could be successfully accomplished, given that we expect that EPA would insist on knowing exactly how Tennessee intended to translate such a criterion prior to approving it for clean water act purposes. As EPA has yet to provide guidance on such an implementation procedure and we have done no primary research of our own, we would be at a loss to come up with a process EPA would approve.

Comment F-18. The department's recommendation for a new selenium criterion is not scientifically defensible. It was withdrawn by EPA as being too burdensome to industry in the Great Lakes.

Response: The department has withdrawn this recommendation, not because it is not scientifically defensible, but for all the reasons stated above.

Comment F-19. The department should have proposed promulgating the recently published new draft ammonia criterion.

Response: Much like the ongoing discussion regarding selenium, it is problematic to consider draft criteria, although we do not suggest that it is impossible to promulgate a draft national criterion or that EPA would automatically disapprove it. However, as a general statement based on our observations of this process over the years, it is better to let the public review of new national criteria proceed as these draft positions are often modified by this process.

Comment F-20. The department should propose a criterion for nonylphenol, but should select a more protective one than the EPA national criterion of 28 ug/L acute and 6.6 ug/L chronic. Environment Canada has adopted a more stringent criterion based on synergistic effects with other compounds.

Response: We have added the EPA national criterion for this substance (28 ug/L acute, 6.6 ug/L chronic). Regarding criteria developed in other countries: we have not researched this, but understand that Environment Canada made assumptions about the relative toxicities of the synergistic compounds. We think that it would be difficult to defend a criterion developed in Canada, since EPA would not help us explain a criterion they did not derive.

Comment F-21. The department should consider adopting EPA's national chronic criterion for demeton (0.1 ug/L), guthion (0.01 ug/L), malathion (0.1 ug/L), methoxychlor (0.03 ug/L), and Mirex (0.001 ug/L).

Response: We agree and have made this change.

Comment F-22. The department should consider adopting EPA's national criterion for diazinon (0.1 ug/L, chronic & acute) and parathion (0.013 ug/L chronic, 0.065 ug/L acute).

Response: We agree and have made this change.

Comment F-23. The department has said that although there is a criterion for "nutrients" [1200-4-3-.03(3)(k)], nutrients is not a parameter in the application of the antidegradation statement. The criterion should clarify this.

Response: We agree with the commenter and have added a number of provisions to the criteria, the definitions, and the antidegradation statement clarifying the relationship between criteria and parameters, especially in regard to nutrients, biological integrity, and habitat.

Comment F-24. Tennessee should continue to make progress in developing numeric lake criteria.

Response: We agree. Specifically regarding nutrients, the department has developed a written plan for development of nutrient criteria. This document can be accessed from our webpage at http://www.state.tn.us/environment/wpc/publications/pdf/NutrientCriteriaWorkplanRev.pdf.

Comment F-25. Tennessee must promulgate numeric criteria for nutrients rather than the current narrative one.

Response: Nutrients simply don't act in streams strictly in relation to concentration. Other factors influence the effects nutrients have in streams. Our criterion relies on numeric translators for wadeable streams. We believe this represents best use of available science and it has been approved in the past by EPA.

Comment F-26. Strict numeric nutrient criteria in Tennessee will help protect the Gulf of Mexico.

Response: We are standing by to do our part to help prevent hypoxia in the Gulf. However, as we have long maintained, EPA must take the lead in determining acceptable nutrient loadings and parsing out where allocations must be reduced. Additionally, EPA should provide guidance concerning what nutrient criterion is appropriate for the Mississippi River. This job is larger than any individual state and will require cooperation from all.

Comment F-27. Tennessee should have adopted EPA's national numeric nutrient criteria instead of criteria based on reference stream data. (The commenter provided a detailed critique of departmental documents published in 2001 and 2004.)

Response: The commenter is revisiting a decision made by Tennessee ten years ago and approved by EPA as scientifically defensible. Our approach- envisioned, developed, and undertaken well before the federal emphasis on nutrients began, is working well for the following reasons:

1. Tennessee's existing nutrient criteria are based on reference streams in Level 4 subecoregions, a more detailed approach. EPA's approach lumped Level 3 ecoregions together, some of which are not even found in Tennessee.

2. The database used in EPA's stream criteria calculations contained data from sites known to be large rivers and lake embayments. Tennessee limited its data to wadeable streams.

3. Tennessee's criteria were extensively field tested before and after publication, EPA's were not.

4. Tennessee's criteria approach incorporates biological response, EPA's does not.

5. Tennessee has continued to collect reference stream data at existing sites, has added new reference sites as discovered, and has continued to refine these criteria values.

6. EPA said at the time of publishing its nutrient criteria that it would be better for states to develop their own approaches, which is exactly what Tennessee had done. EPA has often referred to Tennessee's approach as a model for other states.

Comment F-28. The department has said that although there is a criterion for "biological integrity" [Rule 1200-04-03-.03(3)(m)], it is not a parameter in the application of the antidegradation statement. The regulation should clarify this.

Response: The commenter is correct that biological integrity is a condition index rather than a parameter. Beyond that, the parameters associated with biological integrity (e.g., number of EPT taxa) are response variables rather than cause variables. That means they are a measurement of the effects of a pollutant or the absence of pollutants, rather than a pollutant themselves. We have added some clarifying language.

Comment F-29. The existing biological integrity criterion contains the phase "except as authorized under Rule 1200-04-03-.06." Why is this criterion singled out for this phrase?

Response: The commenter is correct that antidegradation statement applies equally to all of the general water quality criteria. We have removed this phrase to avoid confusion.

Comment F-30. The biological integrity criterion should be numeric rather than narrative.

Response: Two triennial reviews ago, the department proposed, then withdrew a set of numerical criteria in favor of a position based on narrative criteria with regional numeric translators. We feel this approach has worked well.

Comment F-31. Tennessee's biological integrity criterion does not protect early life stages. Additionally, non-native species should not count towards diversity scores.

Response: Our Tennessee Macroinvertebrate Index, the foundation of our biocriteria, is based on the aquatic larval stages of insects. It is true that we count larvae rather than eggs, so we count early stages rather than the earliest stages.

We tried to think of non-native stream aquatic macroinvertebrates and other than *Corbicula*, we drew a blank. We do count *Corbicula* towards total taxa, but as an organism considered tolerant of pollution, they count against a stream's score in most other ways. We do not think of our assessments as being corrupted due of non-native species.

Comment F-32. Tennessee's habitat and biological integrity criteria do not provide for protection from cumulative impacts.

Response: We do not agree. Our habitat criteria and biocriteria are based on a wide-range of potential impacts that are sensitive to cumulative impacts to habitat and biology.

Comment F-33. Tennessee's biological integrity criteria should require that permittees perform biological monitoring in receiving waters.

Response: We agree that if permittees are potentially altering biological integrity, they should have some responsibility to monitor these changes and many permits now contain these requirements. This is a case-by-case determination that is more appropriately made in the permitting process than in the setting of clean water goals.

Comment F-34. Tennessee's criteria should speak to the problem of entrainment of aquatic life in power plant intakes.

Response: We have a set of biological integrity standards that apply to aquatic life, but think of entrainment as a permitting issue. EPA has proposed new regulations for entrainment and impingement and has identified intake technologies to reduce the magnitude of this problem.

Comment F-35. The department has said that although there is a criterion for "habitat" [1200-4-3-.03(3)(n)], habitat is not a parameter in the application of the antidegradation statement. The criterion should clarify this.

Response: We agree with the commenter. Like biological integrity, habitat is a condition index rather than a parameter. We have added a sentence identifying the parameters associated with this criterion.

Comment F-36. The habitat criterion [Rule 1200-04-03-.03(3)(n)], identifies "types" of habitat loss, but then goes on to list activities that cause these losses. It is the activities that are regulated.

Response: We agree with the commenter and have added a clarifying statement.

G. SPECIFIC COMMENTS: 1200-04-03-.03(4), Criteria for Water Uses, Recreation

Comment G-1. Tennessee needs a numeric turbidity criterion.

Response: Our recreational turbidity criterion in Rule 1200-04-03-.03(4)(d) can be applied numerically in certain circumstances if the test stream can be compared to the reference stream database. These numeric interpretations of the turbidity criterion could be used as the basis for TMDLs, for example.

Comment G-2. The proposed recreational criterion for selenium is less stringent that the criterion for fish and aquatic life protection. People are no less sensitive to selenium than aquatic life.

Response: Different organisms are never equally sensitive to any toxicant. The results of toxicity tests and observations of humans under various selenium exposure scenarios indicate that people are less sensitive than fish and birds. EPA's national criteria incorporate the results of this research and observations. The Food and Drug Administration (FDA) has stated that most people do not need the selenium supplements commonly found in men's vitamins but that they are not harmful. (FDA did speak out on some of the "mega packs" of vitamins that contained too much selenium. These products have been pulled from shelves.)

Comment G-3. Tennessee should consider adopting EPA's national numeric criterion for zinc.

Response: We have made this revision, but note that zinc is not very toxic to people.

Comment G-4. EPA has published a new national criterion for mercury based on fish tissue concentrations. Tennessee should adopt this criterion.

Response: EPA has recommended this change and says that there are three ways a state can translate a tissue-based criterion for permit limit development:

Implement the fish tissue criterion without water column translation, or

Translate the fish tissue criterion to a water column value using bioaccumulation factors (BAFs). Three approaches include:

1. Site-specific BAFs
2. Modeled BAFs
3. BAFs derived using the results of field studies that are not site-specific (in limited circumstances); or

Combination (fish tissue criterion for some or all waters, combined with water column criteria for some or all waters).

We will follow the third approach, retaining the current water column number, while using the fish tissue criterion for decisions regarding the issuance of fish tissue advisories.

Comment G-5. Tennessee should consider adopting EPA's national numeric criterion for dinitrophenols.

Response: We already adopted EPA's criterion for 2,4-Dinitrophenol. Since the criterion is exactly the same, we have simply changed the name to Dinitrophenols.

Comment G-6. Tennessee should consider adopting EPA's national numeric criterion for Ether, Bis(Chloromethyl); Hexachlorocyclohexane-Technical; Nitrosodibutylamine; Nitrosodiethylamine; and Nitrosopyrrolidine.

Response: We have made these revisions, adjusting the criterion for Tennessee's different risk basis for carcinogens.

Comment G-7. Tennessee should consider adopting EPA's national numeric criterion for Nitrosamines; Pentachlorobenzene; 1,2,4,5-Tetrachlorobenzene; and 2,4,5-Trichlorophenol.

Response: We have made this revision.

Comment G-8. Tennessee should have additional numeric criteria for radionuclides, especially tritium.

Response: At this time EPA does not have a recommended criterion for tritium, and we do not have a basis to set a numeric criterion.

Comment G-9. The department should do more to regulate the discharge of radionuclides.

Response: This is a permitting rather than a clean water goal-setting issue, but the commenter should be aware that the regulation of radioactive materials is primarily done under standards set by the U.S. Nuclear Regulatory Commission, because the Atomic Energy Act preempts EPA and the states from regulating most radioactive materials.

H. SPECIFIC COMMENTS: 1200-04-03-.03(5), Criteria for Water Uses, Irrigation

Comment H-1. Tennessee's toxic criteria for the irrigation designated use are vague and may not adequately protect the health of people eating fruits or vegetables irrigated with polluted waters.

Response: There have been several high profile events in recent years in which irrigation water has been thought or shown to be the source of bacterial contamination of certain vegetables, so we understand the commenter's concern.

The U.S. Food and Drug Administration has the authority and responsibility to regulate the quality of food products in the marketplace. Should EPA suggest national numeric water quality criteria to protect this use, we will adopt them.

I. SPECIFIC COMMENTS: 1200-04-03-.03(5), Criteria for Water Uses, Livestock Watering and Wildlife

Comment I-1. Tennessee's toxic criteria for the livestock watering and wildlife designated use are vague and may not adequately protect the use.

Response: Our criteria for toxic substances for this use are narrative but we do not agree that status automatically equates to less protection. As EPA in conjunction with the U.S. Fish and Wildlife Service develop numeric wildlife criteria for selenium, for example, we will be standing by to adopt them. However, in the interim, we have not done primary research to determine more definitive protection levels and the commenter has not suggested any.

J. SPECIFIC COMMENTS: 1200-04-03-.04, Definitions

Comment J-1. This section should also define available conditions and unavailable conditions.

Response: Please note that we are changing these terms to available and unavailable parameters rather than conditions. We have added a definition of "parameter."

Rule 1200-04-03-.06(2)(a) says that "unavailable parameters exist where water quality is at, or fails to meet, the water quality criteria in Rule 1200-04-03-.03."

Rule 1200-04-03-.06(3)(a) says that "available parameters exist where water quality is better than the water quality criteria in Rule 1200-04-03-.03."

Comment J-2. Tennessee currently puts the concept of "temporary" alterations within the definition of *de minimis*. But since temporary impacts are not degradation, couldn't it make more sense to revise the current definition of degradation to include this concept?

Response: We agree with the commenter, especially now that we have proposed revising the definition of *de minimis*. We have added the words "non-temporary" to the definition of degradation and removed the concept of short duration from the definition of *de minimis*.

Comment J-3. Since Tennessee now has flow criteria, shouldn't the definition of degradation include water withdrawals as a potential type of degradation?

Response: We agree with the commenter and have made this revision in the definition of degradation.

Comment J-4. A *de minimis* level of degradation should not be allowed in high quality waters. It allows water quality to be lowered incrementally, the "death from a thousand cuts."

Response: We understand this comment, but draw the commenter's attention to the 10 percent cumulative cap on applications of the *de minimis* provision. EPA has approved this concept as being consistent with federal regulations.

Comment J-5. The existing definition states that a *de minimis* level of alteration is not degradation, yet the new definition of "measurable degradation" says that that usually lesser amount of alteration is degradation. How can both be true?

Response: We agree with the commenter that a *de minimis* level of alteration, while small, is still degradation. We have deleted the statement in the regulation that *de minimis* does not represent degradation.

Comment J-6. The existing definition of *de minimis* could be clarified if it separated the discussions of how this level of alteration would be identified for the three different activities. Could subparagraphs be added?

Response: We have restructured this definition to add clarity. The definition now contains parts (a)1, (a)2, (a)3 for discharges, water withdrawals, and cumulative effects of discharges or withdrawals, respectively. Subparagraph (b) is specific to habitat alteration activities.

Comment J-7. The definition of *de minimis* does not explain how the concept of small magnitude or short duration will be applied.

Response: We believe the definition does explain how small magnitude will be determined by basing it on a percentage of the available assimilative capacity.

We have proposed changes to the definition of *de minimis*, specifically, acknowledging that *de minimis* is degradation. Since temporary impacts are not degradation, the concept of temporary impacts has been moved to the definition of degradation.

Short duration or temporary conditions are going to differ from site to site. One day's duration of an impact might not affect a larger stream, but devastate a smaller one. Additionally, since various pollutants have differing toxicities or potencies for human health impacts, the amount of exposure that might cause problems would differ for each. Five minutes of one pollutant might cause lasting harm, but five hours of another might have no effect.

Thus, in order to protect headwater streams and to account for the differing potential of each pollutant to cause harm, we have resisted any impulse to define what is "short duration."

Comment J-8. The definition of *de minimis* includes the word "insignificant" for the amount of additional degradation can occur beyond the 10 percent cap on cumulative effects. "Insignificant" should be defined. Could a bioaccumulative substance be considered insignificant?

Response: Like the concept of temporary, the significance of the effects of a substance on a waterbody is based on the nature of the stream and the toxicity or potency of the pollutant. For that reason, this concept would not lend itself to a rigid definition. There might be a specific instance (large receiving stream, very small discharge) in which the discharge of a bioaccumulative substance would be insignificant, but in general, we think of these substances as having a significant impact on a waterbody.

Comment J-9. The definition of *de minimis* allows for degradation above the 10 percent cap on cumulative effects. This is contrary to the recent Sixth Circuit Court ruling regarding Kentucky's antidegradation statement.

Response: The concept of allowing an insignificant amount of degradation above the ten percent cumulative cap is an existing provision of our *de minimis* definition, one that we are not proposing to revise. EPA already approved this approach during the previous triennial review.

Comment J-10. Activities that cause or contribute to a condition of pollution cannot be deemed *de minimis*.

Response: We understand this comment, but do not fully agree for several reasons. First, although we understand where this phrase comes from, we are getting away from "cause and contribute" in antidegradation

language. Obviously, something that "causes" the condition of pollution can never be *de minimis*. Causing the loss of use is always a prohibited amount of degradation.

Can an activity that "contributes" to the loss of use be *de minimis*? We think it could, if it was a very small contribution. Having the word "contributes" in the definition of *de minimis* might fuel arguments that even a molecule of a substance could contribute to loss of use.

Comment J-11. The testimony of permit writers in the Plateau Sand case demonstrated that the *de minimis* concept is poorly developed and is haphazardly applied to individual permits.

Response: We think the commenter has overstated the magnitude of this issue, but agree with the need for clear antidegradation guidance to staff. The initial proposal for amending these rules made changes to clarify the application of the concept of *de minimis* in the antidegradation analysis and we have now made additional changes to make it even clearer. We have clarified the applicant's burden to provide information on this point and explicitly stated that the determination of whether an impact is *de minimis* is the first step of the antidegradation analysis and can conclude it. However, to a certain degree this comment may be raising a permit issue rather than a water quality standards issue.

Comment J-12. A detailed explanation of the calculations used to determine that degradation is *de minimis* should be maintained in the permit files.

Response: We agree, but this is a permit processing issue rather than a water quality standards issue.

Comment J-13. *De minimis* levels of degradation should not be allowed for toxic or bioaccumulative substances.

Response: We agree that care needs to be exercised in the authorization of the discharge of bioaccumulative or toxic substances. However, it should be remembered that *de minimis* is based on the assimilative capacity of a substance, which in turn is based on that substances' criterion. The criteria already take into consideration the bioaccumulative or toxic effects of that substance.

Comment J-14. No activity should be considered *de minimis* simply based on the type of the activity.

Response: We understand this comment, but believe that selected general permits that were public noticed as representing *de minimis* levels of degradation are appropriately considered to represent an insignificant level of degradation. EPA has agreed with this approach.

Should the provisions of the permit not be followed and more than an insignificant amount of degradation occurs, that becomes an enforcement issue rather than a failure of goal-setting.

Comment J-15. The second paragraph of the existing *de minimis* definition should be discarded.

Response: The second paragraph in the existing regulation explains how the cumulative cap on *de minimis* will be implemented, which we consider critical. We will retain this paragraph, although as stated in a previous comment, we have restructured this definition to add clarity.

Comment J-16. The proposed approach to *de minimis* does not consider secondary impacts. For example, a power plant might withdraw a *de minimis* amount of water from a reservoir, but entrain a significant number of juvenile fish.

Response: In the commenter's hypothetical example, the withdrawal of the specific volume of water would be considered a *de minimis* effect if it complied with the definition found in Rule 1200-04-03-.04(4)(b). However, the related but different issue of fish entrainment would not be considered a *de minimis* effect.

Comment J-17. The proposed definition of measurable degradation is based on the results of chemical tests at very low detection levels. Substances may be unreliably quantified at those levels.

Response: The concept of measurable degradation is considered at the time of permitting. In practice, degradation will be considered measurable if the difference in instream concentration resulting from an addition of pollutants could be detected using laboratory methods specified by the division.

Comment J-18. The proposed definition of measurable degradation mentions dischargers but not water withdrawals. In a stream that is already at or violating a water quality standard, a water withdrawal might increase concentrations of the pollutant. That scenario should be addressed also.

Response: We agree and have added water withdrawals to the definition of measurable degradation.

Comment J-19. The definition of "mixing zone" is vague. More explanation of mixing zones should be given.

Response: In the next section "Interpretation of Criterion" [Rule 1200-04-03-.05(2)], more information about mixing zones is provided.

Comment J-20. The proposed definition of "normal weather conditions" has a typo. In the fourth line, "precipitation date" should be "precipitation data."

Response: We have made this correction.

Comment J-21. Under the antidegradation provisions for available and unavailable conditions, the word "parameter" is used. This should be defined lest the public be confused. Some criteria are for substances directly measured in analytical tests, such as iron or manganese. These are properly considered parameters. Other criteria are for overall conditions which are calculated composite scores, such as biological integrity and habitat, which are not directly measured. These are not parameters.

Response: We agree and have added the following definition: Parameter - A directly measurable biological, chemical, radiological, bacteriological, or physical property of water. Additionally, we added a second sentence to the definition to clarify the difference between a criterion and a parameter. We also have used the terms available and unavailable parameters to avoid the ambiguity of "conditions."

Comment J-22. Since the criteria for biological integrity references "response variables," a definition would be helpful.

Response: We agree and have made this addition.

Comment J-23. Why not just say that any stream that is a meter or less in depth is wadeable, instead of referring to the size of a biological sampling net?

Response: Streams typically deeper than one meter might also be sampled by wadeable methods, something our current definition makes allowances for.

Comment J-24. The definition of wet weather conveyance should explain what is meant by "direct response of precipitation."

Response: The department has developed a wet weather conveyance determination procedure (as a separate process) which has been added to water quality standards.

K. SPECIFIC COMMENTS: 1200-04-03-.05, Interpretation of Criteria

Comment K-1. Temperature criteria violations should not allowed in mixing zones.

Response: Such discharges would be required to have Section 316(a) conditions in their NPDES permit. Section 316(a) provisions are a federal water quality standard that supersedes state temperature criteria. In place of the numeric criterion, permits subject to Section 316(a) have a requirement to maintain balanced indigenous biological conditions.

An NPDES permit with 316(a) requirements would still be subject to the conditions imposed on mixing zones in Rule 1200-04-03-.05(2). For example, the heat could not cause lethality, or prevent the free passage of fish upstream and downstream.

Comment K-2. The mixing zone provision should be amended to add that the drift of ichthyoplankton cannot be prevented.

Response: We agree, but feel that the prohibitions in Rule 1200-04-03-.05(2) already contain this concept in the part requiring the free passage of fish. We do not read that to limit these protections to only fish that swim as opposed to larval fish that drift.

Comment K-3. The flow basis paragraph (4) contains the following phrase:

...criteria that are wholly or partially based on direct measurements...

Some criteria are not directly measured, but are instead composed of individual parameters that are compiled to create a condition index.

Response: The commenter is correct and we have deleted the word "direct."

Comment K-4. Paragraph (5) mentions the magnitude and duration of water quality deviations, but not the frequency. Isn't this an important consideration that should be added?

Response: We agree and have made this revision.

Comment K-5. Pathogen data collected following rain events should not be treated as outliers.

Response: Part of the logic for the rain event pathogen provision is that people are unlikely to be recreating in streams during storms, thus risk is less. However, elevated rain event pathogen results are still violations of the water quality criterion.

This provision allows us not to automatically assess streams as impaired if the only elevated sample was collected during a high flow event. For example, we performed a great deal of pathogen monitoring in the Nashville area during the historic flood of May, 2010. However, since this was a 1000-year flood event, we would not consider those results to reflect normal water quality conditions.

Comment K-6. Paragraph (7) has the added phrase "or in water quality assessments." This needs clarification.

Response: We agree and have added the clarification that water quality criteria violations caused by natural conditions should not be assessed as the condition of pollution.

Comment K-7. Tennessee should have a laboratory certification process in wastewater like it does in drinking water.

Response: This idea has been explored in the past and while it has merit, it's not a subject for water quality standards

Comment K-8. Some of the general water quality criteria are set lower than the detection levels in Rule 1200-04-03-.05(8). Permittees should not be required to meet permit limits set below detection levels.

Response: Most permit limits are not set at the criteria level, since limits are based on additional factors such as ambient stream flow. However, where permit limits are below current detection levels, compliance with permit conditions is acknowledged with a result of "not-detected" at the appropriate detection level.

Comment K-9. Some of the RDLs (required detection levels) in permits are unreasonably low. (List provided by the commenter.)

Response: RDLs are an important tool in protecting water quality by assuring that permittees utilize appropriate analytical techniques.

It is important to note that according to Rule 1200-04-03-.05(8), not all substances limited in a permit are subject to RDLs. The regulation currently states: "In instances where permit limits established through implementation of these criteria are below analytical capabilities, compliance will be demonstrated..." (emphasis added). So the requirement for RDLs is triggered by the permit limit, not the criterion, since most dischargers get some dilution credit for the receiving stream. It would not make sense to require a very low detection level when the permit limit is much higher.

One of the RDLs brought to our attention by the commenter was anthracene. The commenter is correct that the RDL is challenging at 0.73 ug/L. However, the lowest numeric criterion for anthracene is 8300 ug/L, so a permittee would never be required to meet the RDL, according to the regulation.

A metal mentioned by the commenter was zinc, with an RDL of 1.0 ug/L. The fish and aquatic life criterion for zinc is hardness dependant, but at a hardness of 100 mg/L, the criterion would be 120 ug/L, so again, even in a zero flow stream, no permittee would be required to reach the RDL.

See the response to comment K-6 for additional information concerning the process for meeting alternate RDLs due to sample interferences.

Comment K-10. If RDLs are going to remain at current levels, then a process needs to be identified to allow the acceptance of scientifically valid data that has been generated with every effort to achieve the state's RDL limits.

Response: We believe that such a process currently exists. Rule 1200-04-03-.05(8) states: ...compliance with those limits will be demonstrated using the following detection limits, unless in specific cases other detection limits are demonstrated to be the best achievable because of the particular nature of the wastewater being analyzed (emphasis added).

In order to add clarification concerning how this provision will be implemented, we have added the following paragraph:

Such a demonstration shall be made at the time results are submitted and shall affirm that using methods, personnel, training, and equipment appropriate to reach applicable RDLs, the laboratory was unable to do so due to the nature of the sample. The methods, equipment, and general nature of the interference shall be provided. Inability to accurately quantify the level of a contaminant shall not be acceptable grounds for a higher detection level if the permit requirement was based on detection/non-detection.

Comment K-11. To streamline the regulation, the specific numeric RDLs should be deleted and the following bolded phrase should be added to the narrative:

"...compliance with those limits will be determined using the method detection levels associated with an applicable approved EPA analytical method as specified in 40 CFR Part 136."

Response: We don't disagree with this suggestion, but it presents a practical problem. Referencing a federal regulation in water quality standards usually requires that we add the phrase "or other defensible methods" in order to avoid certain legal problems. In this case, we feel that it would create fewer issues to simply specify the RDLs as we are doing currently. We understand we would be sacrificing flexibility for certainty.

M. SPECIFIC COMMENTS:
1200-04-03-.06, Tennessee Antidegradation Statement

Comment M-1. No stream should be presumed to be outside of the protection of the antidegradation statement.

Response: All streams in Tennessee fall under one or more of the four antidegradation categories. (It is actually possible for streams to be in more than one category, as two of the categories are based on characteristics of the stream, while the other two are approached on a "parameter by parameter basis.") If the commenter meant that no stream should be presumed not to be "high quality," we agree. Our implementation procedure requires that the antidegradation status of a stream be determined prior to a regulatory action, except when the analysis concludes with the steps described in Rule 1200-04-03-.06(1).

Comment M-2. Basing Tennessee's water quality goals on conditions on November 28, 1975 sets the bar too low.

Response: The mention of November, 1975 refers to uses in place when the Clean Water Act was signed, not the existing water quality at that time. We do not believe that this provision places a limitation on clean water goal setting.

Comment M-3. The language in (1)(a) would more closely match the historical interpretation of this passage if it said that waters are high quality if the quality exceeds recreation <u>or</u> fish and aquatic life criteria, rather than using the conjunction <u>and,</u> as is presently done. Otherwise, someone might argue that water quality had to exceed both sets of criteria in order to be considered high quality.

Response: The commenter is correct and we have made this revision.

Comment M-4. Section 316(a) permits should not be referenced in the antidegradation statement as these permits have allowed historical impacts to aquatic life in Tennessee.

Response: Section 316(a) thermal discharge permits are allowed under federal law. The Section 316(a) requirement to maintain "balanced and indigenous populations" (BIP) of aquatic life is a federal water quality standard that supersedes any state temperature criterion.

Comment M-5. Rule 1200-04-03-.06(1)(b) needs additional detail regarding what constitutes a "complete application" for the various types of activities for which an applicant might request authorization.

Response: We agree and have rewritten the section to provide additional detail. We have added paragraphs and subparagraphs for the various activities.

Comment M-6. The proposed revisions add a requirement that any authorized degradation be necessary to accommodate important economic or social development.

Response: We do not agree that this represents a new requirement. This exact language appears in Rule 1200-04-03-.06(1) in the existing regulation and applies to all "waters where the quality is better than the level necessary to support" uses. This language is directly from 40 C.F.R. §131.12.

Comment M-7. The criteria need detailed procedures on how alternative analysis submissions will be evaluated by the department.

Response: We agree that evaluation procedures are important, but think they would be better placed in policy or SOP documents.

Comment M-8. The existing 2006 regulation has different application information requirements for authorizing degradation, depending on the antidegradation category of the water. The new proposal requires the same components of an application, no matter the category.

Response: New domestic wastewater discharges or alterations above a de minimis level must perform alternatives analysis. We agree with the commenter that the information submission requirements in the existing regulation are different between "available conditions" and exceptional Tennessee waters. As stated in the previous response, we do not concede that the nature of the state's determination is different.

Our reason for standardizing alternative analysis requirements is that due to the new requirements of the "permittee bill of rights" law recently enacted, the department must ensure that applications are complete prior to starting the clock on permitting time frames. Otherwise, the antidegradation analysis is likely to take longer than the new law allows. Applications are more likely to be complete if we standardize application requirements, given that the antidegradation category usually has not been determined prior to receipt of a completed application. In our view, applicants benefit from this clarity and simplification of requirements.

Comment M-9. The regulation refers to "important economic or social development" as the proper basis for allowing degradation in high quality streams (those better than existing uses). Important to the applicant, or the public? Who decides?

Response: The department makes this determination and can only authorize the degradation if it is in the public interest.

Comment M-10. Rule 1200-04-03-.06(1)(b) has been rewritten to suggest that the state must authorize any degradation of available conditions on the basis of the social/economic interest of the public. Only a discussion of these aspects was required in the previous version of the regulation, and the state has no regulatory authority for disapproval of the alternatives analysis. The proposed language is a new requirement that should be removed.

Response: We agree with the commenter that the existing rules require the submission of a "discussion" of the social, environmental, and economic consequences of each alternative. However, we disagree that the state's role was to merely confirm that the applicant had "discussed" alternatives and that we have no regulatory authority to reject the conclusions of the applicant.

The current Rule 1200-04-03-.06(1) says that degradation will not be allowed unless the state finds "...that the lowering of water quality is necessary to accommodate important economic or social development..." In order to make this finding, the department must have a factual basis. If the applicant does not provide adequate information needed by the state to make its determination or if the submittal does not make a case that the degradation is necessary, the department can withhold approval of the degradation. We do not think the approach described by the commenter would be approved by EPA.

The changes we have proposed will clarify responsibilities for both the applicant and the department. We have not changed the nature of the responsibilities.

Comment M-11. Rule 1200-04-03-.06(1)(b) has been rewritten to suggest that all permit applications for discharges causing more than *de minimis* degradation must perform an alternatives analysis. In the past, alternatives analysis has not been required for permit reissuances where limits are not being changed. This should be rewritten.

Response: The commenter is correct that where an applicant requests a status quo reissuance to available conditions (same limits, no increase in pollutant loading or concentration), an alternatives analysis has not been required.

At the time of permit renewal of previously authorized discharges that degrade Exceptional Tennessee Waters or Outstanding National Resource Waters both the existing and proposed rules require that the permittee must perform an alternatives analysis

Comment M-12. In the case of a reissuance of a permit that only adds a *de minimis* amount of degradation, the applicant should not be required to perform an alternatives analysis.

Response: We do not agree. Any increase in loadings or concentrations does not represent a status quo reissuance, if that facility was previously authorized to cause more than *de minimis* degradation.

Comment M-13. Under the current process, applicants and division can modify applications multiple times, often outside of the public's notice. This is done to try to "game" the system.

Response: All of the division's discussions with an applicant are public record. If the concern is that the public may be unaware that discussions are taking place, we would remind the commenter that our notification procedures are for specific regulatory actions, not discussions. It is the applicant's prerogative to modify an application for many reasons, including to render the effect of the alteration *de minimis*. When the draft permit is issued, the public has the right to review the basis of any determination. If any changes are made by the division after the comment period, a third party may appeal the permit on that point without having made a comment on the issue.

Comment M-14. Initial NPDES permit applications should be put on notice and a public hearing arranged, complete or not.

Response: Many initial and incomplete NPDES permit applications are withdrawn or significantly modified. We do not think it serves a public purpose to notice these submissions, since we cannot act on them until complete.

Comment M-15. The first step of the antidegradation process should be the determination of the antidegradation category of the stream.

Response: We agree that determination of the antidegradation category of the stream is important, but we do not agree that it has to happen first. Until an applicant submits a completed application, we have no idea if the proposed activity will represent degradation in available conditions or Exceptional Tennessee Waters, or "measurable" degradation in unavailable conditions or Outstanding National Resource Waters (ONRWs).

However, in some cases, the antidegradation category will already be known, especially in Exceptional Tennessee Waters. Of course, only the seven streams specifically currently designated by the board are ONRWs.

Comment M-16. Under the proposed revisions to Rule 1200-04-03-.06(2)(a) and the proposed definition of "measurable," additions of pollutants that can be detected in chemical tests at very low concentrations cannot be allowed. Just because something is measurable doesn't mean that it represents degradation. A *de minimis* amount of degradation should be allowed.

Response: The existing regulation says that any amount that would "cause or contribute to impairment" cannot be allowed. The definition of *de minimis* allows the loss of up to 5% of the assimilative capacity. That's not allowable in unavailable waters.

Comment M-17. General permits should not be allowed in unavailable conditions [Rule 1200-04-03-.06(2)] if the permit would result in the discharge of pollutants.

Response: No general permit authorizes discharges that would cause further impairment in unavailable conditions. Discharges that would further impairment are not eligible for general permit coverage.

Comment M-18. Under the proposed revisions to unavailable parameters, Rule 1200-04-03-.06(2)(a)(1), the phrase "cause or contribute" is used. Couldn't someone argue that even one molecule could contribute to measurable degradation?

Response: Although this language came from the federal regulation, we see the commenter's point. We have deleted "or contribute" in this phrase. Only those alterations that do not cause measurable degradation in unavailable parameters will be authorized.

Comment M-19. The department's permitting of dischargers into Tier I waters ignores significant water quality impacts by theorizing that dilution is "instantaneous."

Response: We no longer have an antidegradation category called Tier I, but we assume the commenter is referring to available conditions [Rule 1200-04-03-.06(3)(a)1]. Although this comment is really about permitting procedures rather than water quality standards, discharges are carefully modeled so as to not cause impacts to designated uses. In available conditions, degradation can be allowed if it is in the public interest.

Comment M-20. Rule 1200-04-03-.06(1)(c) should indicate the levels of degradation that for each of the three main categories of activities (discharges, water withdrawals, and habitat alterations) would off-ramp the permit from any further antidegradation review.

Response: We agree and have added sub-categories that establish that if a discharge or water withdrawal would not make a measurable difference in water quality parameters; or if the effect of a habitat alteration is rendered *de minimis* due to impact minimization and/or in-system mitigation; no further antidegradation review is necessary.

Comment M-21. Rule 1200-04-03-.06(1)(c) makes no mention of measureable degradation, even though only that amount of degradation can be allowed in unavailable conditions or Outstanding National Resource Waters.

Response: The commenter is correct and we have revised this subparagraph to correct this omission.

Comment M-22. A revision to Rule 1200-04-03-.06(1)(d) proposes to delete the requirement that the applicant be informed in writing that the stream they intend to alter is an Exception Tennessee Water. Why?

Response: A new subparagraph (e) reestablishes the department's responsibility for public notice once an application has been deemed to be complete. Thus, more than just the applicant will be notified. Additionally, Rule 1200-04-03-.06(4)(d)1 provides specific notice requirements for Exceptional Tennessee Waters.

Comment M-23. The antidegradation statement should do more to require water withdrawers to engage in regional planning.

Response: The department believes in and participates in regional water use planning and has done much to encourage it. When a new water withdrawal would cause measurable degradation, the applicant must provide an alternative analysis indicating that "reasonable alternatives are not feasible." The conclusions of an alternatives analysis backed by regional water use planning would carry much more weight than one without.

Comment M-24. The antidegradation statement protects high quality waters. It is not satisfied by simply setting permit limits.

Response: We understand this comment and generally agree. We must and do, withhold permission to degrade streams if better alternatives exist or if the degradation is not in the public interest. However, the commenter must remember that the antidegradation statement only works in terms of things the department authorizes. For example, we cannot regulate agricultural water withdrawals. Thus, the statement cannot prevent all impacts to high quality waters, but must be used in conjunction with other programs and policies.

Comment M-25. Mitigation should not be mentioned in the antidegradation statement. It results in widespread impacts to fully supporting streams.

Response: The purpose of mitigation is to fully replace water resource values that are lost due to the permitted activity. That is why in-system mitigation is considered *de minimis* in this rule.

Comment M-26. In Rule 1200-04-03-.06(1)(d), the first sentence refers to Outstanding Natural Resource Waters. Isn't this "National" waters instead?

Response: The commenter is correct and we have made this revision.

Comment M-27. In Rule 1200-04-03-.06(2) and (3), the regulation refers to unavailable and available "conditions," yet goes on to describe parameters. This is confusing and might be misinterpreted.

Response: The commenter is correct. We have substituted the word "parameters" for conditions.

Comment M-28. In Rule 1200-04-03-.06(2) and (3), could the requirements be more specific based on the type of activity is being proposed?

Response: We agree that this would help clarify these requirements. We will add these additional specifics as subparagraphs.

Comment M-29. In Rule 1200-04-03-.06(2), the regulation refers to unavailable parameters, which occur when criteria are not met. But some criteria are not specific to parameters. This is confusing and might be misinterpreted.

Response: The commenter is correct. We have added clarifying language to this paragraph indicating that where criteria are for condition indices, it is the individual parameters that make up the index that are unavailable. The revisions will also explain how response variables, such as the number of taxa in a stream, will be handled in regard to unavailable parameters.

Comment M-30. In Rule 1200-04-03-.06(3)(b), the regulation states that records of antidegradation determinations must be maintained. Isn't this requirement already in the permitting regulations and doesn't it apply to more than just determinations regarding available conditions?

Response: The commenter is correct and we have deleted this passage since it might be misunderstood to suggest that this overarching requirement only applies to this one provision.

Comment M-31. In Rule 1200-04-03-.06(4)(a)6, the regulation refers to the 2006 methodology for calculating the Tennessee Macroinvertebrate Index. Hasn't this SOP been updated since then?

Response: The commenter is correct and we have substituted 2011 for 2006.

Comment M-32. In Rule 1200-04-03-.06(4)(c), could the permitting requirements be more specific based on the type of activity is being proposed?

Response: We agree that this would help clarify these requirements. We have added these additional specifics as subparagraphs.

Comment M-33. The 2003 agreement between environmental groups and business interests established provisions requested by each: a contested case procedure and a requirement that cases be heard within 120 days, respectively. The proposed revisions to the antidegradation statement maintain the third party appeal process important to environmental groups, but eliminate the 120 day provision important to business interests.

Response: Both the contested case hearing process and the requirement for the Board to initiate within 120 days the hearing for declaratory contested cases in Exceptional Tennessee Waters have been restored to the regulation.

Comment M-34. The proposed changes to the regulation regarding Exceptional Tennessee Waters violates the spirit of the consensus changes developed during the 2003 triennial review by a coalition of agencies, the regulated community, and environmental groups. Especially important were how the provision would deal with social and economic necessity determinations and how contested cases would be handled.

Response: We have withdrawn the majority of these proposed revisions. The declaratory order contested case procedure has been restored to the regulation. We have deleted the extra meeting requirement regarding an application that would involve degrading ETWs. Our experience with those meetings was that they added time to the permitting process without a benefit. They did not provide us with useful information and they were frustrating for members of the public who did not understand the purpose of the additional meetings and wanted to discuss other issues besides antidegradation.

Comment M-35. The department has proposed deleting the requirement for the posting of signs at sites where authority to degrade Exceptional Tennessee Waters has been requested. This requirement should be restored. Additionally, the regulation should include required sign specifications (content, size, and location). To do otherwise would violate the agreed order in the Plateau Sand case.

Response: The requirement for signs already appears in the ARAP and NPDES regulations and removing it from the antidegradation statement will not change that. These specific requirements are more appropriately placed in the permitting regulation.

The existing requirement for sign postings has been criticized by both the regulated community and citizens as being an ineffective way of providing public notice. Many of these permit applications are for alterations in remote areas where signs are unlikely to be seen by anyone. We are committed to public notice and participation, but there may be better ways to do it.

Comment M-36: In the federal provision on antidegradation, the provision about protecting existing uses is separate from the one about finding that degradation is necessary for important economic and social development in the area. Tennessee's process for review of that decision should be limited to the social or economic justification. Any issues regarding the protection of existing uses may be raised in a permit appeal later, but should not be subject to being litigated in both.

Response: We agree and have revised the language regarding the declaratory order review accordingly.

Comment M-37. The revisions to public notice requirements seem to go more in the direction of emailing and internet postings rather than the traditional written letters or legal newspaper notices.

Response: We agree and consider these modifications to simply reflect the way people communicate now.

Comment M-38. The board should reconvene the coalition of groups involved in the 2003 agreement to discuss the new proposed antidegradation statement revisions.

Response: If the board asks us to reconvene the 2003 parties, we would be pleased to comply. However, the aspects of the proposed regulation that appeared to be most troublesome to both groups have been withdrawn.

Comment M-39. In the so called Third Party Appeal statute (TCA 69-3-105i); the General Assembly in effect codified the existing antidegradation provisions. Thus, they cannot be amended.

Response: We do not agree that the General Assembly, in effect, set the 2006 version of the antidegradation statement in concrete, never to be revised. Even if they did, it would ensure EPA disapproval, as they would consider such a policy inconsistent with federal law which requires an opportunity for reconsideration no less often than every three years.

We believe the Water Quality Control Board is free to modify the regulation as led by science and their good judgment. The specific reference in §69-3-105 is to the declaratory order provision and that is now maintained in the rule.

Comment M-40. The proposed changes to the public participation provisions fail to incorporate the results of an agreed order approved by the board in the Plateau Sand permit appeal case.

Response: The Plateau Sand agreement required the department to provide guidance for the sizing and lettering of signs. This has been done in accordance with the agreement. The agreement does not require the public participation provisions of the antidegradation statement to have any specific elements.

Comment M-41. The regulation should require the department to post notices on its website for requests to degrade Exceptional Tennessee Waters. (The commenter notes that this is typically already being done.)

Response: Detailed public notice procedures should be in the permitting regulations or in policy rather than in water quality standards.

Comment M-42. Any third-party appeal of a permit allowing degradation in an Exceptional Tennessee Water should be heard within 120 days.

Response: This would go beyond what was agreed in 2003 and, in certain cases, possibly would infringe on the authority of the administrative judges to assure that due process is provided in contested cases.

Comment M-43. Any third-party appeal of a permit allowing degradation in an Exceptional Tennessee Water should not result in a stay of the permit.

Response: We have deleted the stay provision and restored the provision regarding third party declaratory order contested case hearings.

Comment M-44. The public should exercise restraint in filing third-party appeals.

Response: The department has no mechanism for enforcing a provision requiring restraint. Members of the public properly filing a valid third party appeal are entitled to have the matter heard.

Comment M-45. The board should be able to review a permit at any step of the process, not just when it is final.

Response: We do not agree. The statute gives the commissioner the authority to issue permits. The board's role begins when an appeal of a final determination is filed. Otherwise, board time may be wasted on issues that may resolve themselves differently anyway. Furthermore, if the board was involved in making the permit decision, it could not review it on appeal.

Comment M-46. The department should nominate Rock Creek in Hamilton County as an Outstanding National Resource Water (ONRW). The required economic/social impact study could be patterned after those previously completed for the Tellico River and Citico Creek.

Response: Under the antidegradation statement, the designation of Outstanding National Resource Water is reserved for those streams that have been documented as important regional or national water resources due to their ecological, scenic, or recreational qualities. The department is familiar with Rock Creek and while we have identified it as an Exceptional Tennessee Water due to its prior designation as Lands Unsuitable for Mining, the presence of the state endangered laurel dace, and proximity to the Cumberland Trail State Park, we do not consider its water resource values to rise to the level envisioned for the ONRW designation.

The commenter is still free to present this proposal directly to the Water Quality Control Board when they traditionally hear public remarks at the rulemaking discussion to be scheduled later.

Comment M-47. In Rule 1200-04-03-.06(5)(b), could the permitting requirements in Outstanding National Resource Waters be more specific based on the type of activity is being proposed?

Response: We agree that this would help clarify these requirements. We have added these additional specifics as subparagraphs.

Comment M-48. In Rule 1200-04-03-.06(5)(b), water withdrawals are not mentioned.

Response: This is an oversight that we will correct.

N. SPECIFIC COMMENTS: 1200-04-04, Use Classifications for Surface Waters

Comment N-1. The department should create a use classification called limited use waters that should be applied to headwater streams.

Response: Our interpretation is that the commenter envisions that this action would create a new type of waters, with less stringent criteria, that would fall between wet weather conveyances and streams. The commenter did not suggest any criteria for this new classification. A state cannot have one without the other.

We believe it's appropriate to leave stream-use classifications as they are currently structured and note that the abandonment of this concept was a key part of the changes made between the introduction of the bill and the passage of Public Chapter 464 concerning wet weather conveyances in 2009.

Additionally, we believe that EPA would disapprove such a blanket reclassification of streams to remove existing uses without individual Use Attainability Analyses on each. Many of these streams are likely "waters of the nation."

Comment N-2. Some headwater streams cannot meet criteria due to natural conditions. A use classification called limited use waters would acknowledge this important distinction.

Response: Natural conditions are not considered pollution so there is no conflict with existing criterion on that basis.

Comment N-3: The first page of Chapter 1200-04-04 provides "Abbreviations for Designated Uses." Are trout streams and naturally reproducing trout streams designated uses?

Response: The only designated uses are Domestic Water Supply, Industrial Water Supply, Fish and Aquatic Life, Recreation, Livestock Watering and Wildlife, Irrigation, and Navigation. The status of waters identified as

trout streams is included in this table as a convenience, not because they are classified uses. We will change the heading to "Abbreviations for Designated Uses and Trout Waters."

Comment N-4: The "Abbreviations for Designated Uses" in Chapter 1200-04-04 uses DWS as the abbreviation for Domestic Water Supply. However, the table uses DOM for this use.

Response: We will use DOM in both places.

Comment N-5. The trout stream status of the Elk River below Tims Ford dam should be modified due to the new dam operating agreement between TVA and U.S. Fish and Wildlife. The new agreement is designed to protect downstream endangered species. Only the section between mile 119 and mile 133.3 will be cold enough to maintain trout under the new agreement.

Response: We have made this revision. Since trout streams are not a use classification, this change can be made without a Use Attainability Analysis (UAA).

Comment N-6. The Tennessee Wildlife Resources Agency recommends that the entry for Goose Creek (pg 27) be revised to be a naturally reproducing trout stream from river mile 1.5 to origin. Additionally, one stream, Upper Hinkle Branch, a tributary of Stony Creek in the Watauga River watershed should not be a trout stream.

Response: We have made these revisions.

Comment N-7. The Tennessee Wildlife Resources Agency recommends adding the following trout streams and naturally reproducing trout streams to Chapter 1200-04-04:

Proposed stream to add	Tributary to: (listed trout stream)	Page of CH 1200-04-04
E. Fork Wolf Creek	Wolf Creek	12
Rymer Camp Branch	Big Lost Creek	12
Big Bald Creek	Coffee Ridge Creek	22
Slip Creek	Coffee Ridge Creek	22
Little Bald Creek	Spivey Creek	22
Sarvis Cove Creek	Horse Creek	22
W. Fork Dry Creek	Dry Creek	22
Sill Branch, E. and W. Forks	Clarks Creek	22
Round Knob Branch	Jennings Creek	22
Big Branch	South Indian Creek	22
Blockstand Creek	Rocky Fork	22
Broad Branch	Rocky Fork	22
Fort Davie Creek	Rocky Fork	22
Rt. Prong Rock Creek	Rock Creek	22
Greenbrier Creek	Cosby Creek	23
Grassy Fork	Gulf Fork Big Creek	23
Sawmill Branch	Paint Creek	23
Little Paint Creek	Paint Creek	23
Tobes Creek	Pigeon River	23
Sinking Creek	Watauga River	25
Buffalo Creek	Watauga River	25
Dry Creek	Buffalo Creek	25
Furnace Branch	Stony Creek	26
Hodge Branch	Stony Creek	26
Lindy Camp Branch	Stony Creek	26
Pole Branch	N. Fork Stony Cr	26
Little Doe River	Doe River	26
McKinney Branch	Simerly Creek	26
Unnamed trib. at Tiger Cr	Tiger Creek	26

Bill Creek	Tiger Creek	26
Fall Branch	Tiger Creek	26
Unnamed tribs. of Tiger Cr	Tiger Creek	26
Unnamed tribs. of Roaring Creek	Roaring Creek	26
Lacy Trap Branch	Laurel Fork	26
Leonard Branch	Laurel Fork	26

Proposed stream to add	Tributary to: (listed trout stream)	Page of CH 1200-04-04
Moreland Branch	Laurel Fork	26
Bunton Branch	Laurel Fork	26
Cook Branch	Laurel Fork	26
Camp Ten Branch	Laurel Fork	26
Hays Branch	Laurel Fork	26
All unnamed tribs. upstream of Moreland Br.	Laurel Fork	26
Heaton Creek	Doe River	26
Toms Branch	Doe River	26
Five Poplar Branch	Doe River	26
Middle Branch	Doe River	26
R. Prong Middle Br.	Middle Branch	26
Panther Branch	Doe River	26
Little Cove Creek	Cove Creek	26
Duck Branch	Doe River	26
Doll Branch	Shell Creek	26
Morgan Branch	Buck Creek	26
Bear Branch	Buck Creek	26
State Line Branch	Buck Creek	26
Morgan Branch	Little Laurel Branch	26
Trivett Branch	Elk River	26
Slabtown Branch	Doe Creek	26
Bulldog Creek	Roan Creek	27
Drake Branch	Roan Creek	27
Steve Phillippi Branch	Corn Creek	27
Cress Branch	Corn Creek	27
Roaring Creek	Forge Creek	27
Fall Branch	Roaring Creek	27
Unnamed trib. at Forge Cr.	Forge Creek	27
Valley Creek	Laurel Creek	27
Tank Hollow	Beaverdam Creek	28
Flat Springs Branch	Beaverdam Creek	28
Marshall Branch	Beaverdam Creek	28
Heaberlin Branch	Beaverdam Creek	28
Green Mountain Branch	Beaverdam Creek	28
Buck Ridge Branch	Beaverdam Creek	28
Owens Branch	Laurel Creek	28
Kate Branch	Gentry Creek	28
Gilbert Branch	Gentry Creek	28
Atchison Branch	Gentry Creek	28
Hoot Owl Hollow	Gentry Creek	28
Cut Laurel Branch	Gentry Creek	28

Response: These streams are tributaries to streams that are already listed in Chapter 1200-04-04 as either trout streams or naturally reproducing trout streams. Rule 1200-04-03-.03(3)(a)2 states: "Tributaries to trout streams or naturally reproducing trout streams should be considered to be trout streams or naturally reproducing trout streams, unless demonstrated otherwise." In order to keep this regulation at a manageable length, we would prefer to not name all these streams by name, since they will automatically receive protection as a tributary.

Comment N-8. The Tennessee Wildlife Resources Agency recommends adding the following trout streams and naturally reproducing trout streams to Chapter 1200-04-04:

Response: These streams are tributaries to streams that are already listed in Chapter 1200-04-04 as either trout streams or naturally reproducing trout streams. Rule 1200-04-03-.03(3)(a)2 states: "Tributaries to trout streams or naturally reproducing trout streams should be considered to be trout streams or naturally reproducing trout streams, unless demonstrated otherwise." In order to keep this regulation at a manageable length, we would prefer to not name all these streams by name, since they will automatically receive protection as a tributary.

Comment N-9. The Tennessee Wildlife Resources Agency recommends adding the following trout streams and naturally reproducing trout streams to Chapter 1200-04-04:

Proposed stream to add	Tributary to:	Placement in CH 1200-04-04	Page of CH 1200-04-04
Dry Creek	Nolichucky River	Before Broadshoal Ck	22
Ramsey Creek	Dry Creek	Under Dry Creek	22
Briar Creek	Dry Creek	After Ramsey Creek	22
Straight Creek	Dry Creek	After Briar Creek	22
Bumpus Cove Creek	Nolichucky River	After Dry Creek	22
Painter Creek	Nolichucky River	After Cassi Creek	22

Response: These streams are not tributaries to streams that are already listed in Chapter 1200-04-04 as either trout streams or naturally reproducing trout streams. We have made these additions.

Comment N-10. The Tennessee Wildlife Resources Agency recommends reordering the following trout streams and naturally reproducing trout streams in 1200-4-4 so that they are in the proper hydrologic sequence:

Proposed stream to change	Tributary to:	Placement in CH 1200-04-04	Page of CH 1200-04-04
Laurel Fork (and tribs.)	Doe River	Under Doe River (first)	26
Hampton Creek	Doe River	Before Sugar Hollow Creek	26
L. Prong Hampton Ck.	Hampton Creek	Under Hampton Creek	26
Buck Creek	Doe River	After Georges Creek	26
Shell Creek	Buck Creek	Under Buck Creek	26

Response: We have made these revisions.

2012 Triennial Review of Water Quality Standards

Summary of Supplemental Public Comments and Responses

(Note: In November, 2011, at the request of the Water Quality Control Board, the previously revised water quality standards were again put on public notice and an additional review period was undertaken in the winter of 2011 and early spring of 2012. The following are responses to new public comments made during this review period. Some reviewers repeated comments previously made and should refer to the fall 2011 response document.

Additionally, our response to the comments made in regard to 1200-04-03-.05(9), the section specific to wet weather conveyance determinations, is that because that portion of the regulation was previously approved by the board in 2010 and no changes to it were proposed, any changes would be outside the scope of this rulemaking.

In some instances, public comments have been summarized in order to group similar observations by multiple reviewers.)

A. TABLE OF CONTENTS

Comment A-1. *The Table of Contents does not match the section headings.*

Response: We will make the following revisions to the table of contents. We will add the word "Control" in 1200-04-03-.01. We will delete the word "Tennessee" in 1200-04-03-.06. In 1200-04-03-.08, we will add "Ground Water." We will delete the word "Petition" in 1200-04-03-.09 and replace it with the word "Application". We will change 1200-04-03-.10 to "Point of Classification Change." We will change 1200-04-03-.11 to "Appeals." We will delete 1200-04-03-.12 in its entirety.

Comment A-2. *The Tennessee Water Quality Control Board is now the Tennessee Board of Water Quality, Oil and Gas.*

Response: We will make this revision throughout the document.

B. 1200-04-03-.02, General Considerations

Comment B-1. *Language in 1200-04-03-.02 states that "all Waters of the State are classified for more than one use" and provides a listing of those uses in Paragraph (2). Since wet weather conveyances have uses and criteria that apply to them, Paragraph (2) should be modified to reflect this.*

Response: The language regarding uses in the regulation in Rule 1200-04-03-.02 creates some confusion between the idea of classified uses and uses in general. Wet weather conveyances have few uses because by definition they are unsuitable for most of them. Wet weather conveyances do not support significant amounts of aquatic life and are unsuitable as drinking or industrial water supply, or irrigation. In fact, Chapter 1200-04-04, which establishes the designated uses of surface waters, doesn't mention wet weather conveyances, except to make it clear that they are not included in the "catch-all" category. We believe that it would be difficult to construct a legal argument that the water in a wet weather conveyance is formally classified in any way.

However, wet weather conveyances do have criteria that apply to them, but only those consistent with the goal that they be "protective of humans and wildlife that come in contact..."

Since we believe that wet weather conveyances are waterways to which some criteria apply, but no designated uses, we do not agree with the suggestion that some mention of wet weather conveyances should be added to Paragraph (2). Paragraph (6) already discusses wet weather conveyances in more detail.

Comment B-2. *The Biotic Ligand Model (BLM) should be cited as an alternative to the Water Effects Ratio (WER) for copper in Rule 1200-04-03-.02(9)(a).*

Response: Tennessee's regulation contains two sub-paragraphs [Rule 1200-04-03-.02(9)(a) and (b)] dealing with site specific criteria studies. Subparagraph (9)(a) provides information regarding water effect ratio (WER) studies. Successfully completed WER studies can result in the modification of the statewide numeric criteria based on the characteristics of ambient water and as a result, do not have to be promulgated as a criteria revision.

Subparagraph (9)(b) states that other types of site-specific studies may be used to alter criteria, but the results of these studies must be promulgated in order to be effective. It additionally states that other appropriate methods beyond the ones cited may be employed to develop site-specific criteria.

Colorado looked into the use of BLM studies and it is our understanding that they declined to allow this approach based on a concern that the BLM studies yield highly variable results that instantaneous ambient conditions can generate.

Until the technical issues with BLM are resolved, it is premature to consider it as an alternative to the WER. See also the Response to Comment D-7 regarding the use of the BLM in the copper criterion for fish and aquatic life.

C. 1200-04-03-.03(1), Criteria for Water Uses, Domestic Water Supply

***Comment C-1.** *Since the other numeric criteria tables indicate which substances are bioaccumulative, the domestic water supply protection criteria table should also.*

Response: These criteria have a different basis than the ones in the other tables referenced. These criteria are not designed to protect human health, *per se*, but rather, to prevent substances from being at concentrations that would place a burden for additional treatment on a domestic water supplier. This is because we do not anticipate or encourage consumption of water directly from streams without treatment.

***Comment C-2.** *Criteria table (j) cites 2,4 Dichlorophenoxyacetic. This should be 2,4 Dichlorophenoxyacetic Acid.*

Response: We agree and will make this revision.

D. 1200-04-03-.03(3), Criteria for Water Uses, Fish and Aquatic Life

Comment D-1. *The fish and aquatic life numeric criteria should include frequency and duration info specific to the application of CMC and CCC levels.*

Response: In this rulemaking we are proposing to add the word frequency to rule 1200-04-03-.05(5). This provision instructs us to consider the frequency, magnitude and duration of deviations from the criteria in determining whether or not they have been violated.

Comment D-2. *TDEC is to be commended for adopting new numeric criteria and should continue to work on numeric goals for parameters like suspended solids.*

Response: As stated consistently in the past, we are dependent on EPA for assistance in the development of most numeric criteria and there is no national recommendation for suspended solids. EPA proposed a numeric performance standard for suspended solids in stormwater, which they later withdrew. Even in the absence of a numeric criterion, our ecoregion reference data can be used to establish regional biological integrity and habitat goals which can be used to identify silt impaired streams.

Comment D-3. *Tennessee should adopt EPA's aluminum national criteria.*

Response: Aluminum is not a priority pollutant. Tennessee currently regulates it by way of the narrative "Toxic Substances" criterion. EPA has acknowledged problems with the current recommended numeric national criteria for aluminum. For example, the chronic value is appropriate for situations where both the stream pH and hardness are below 6.6 and 10, respectively. However, relatively few streams have these specific conditions. As pH and hardness increase, aluminum is less toxic. Additionally, EPA also correctly states that many high quality streams have aluminum levels that exceed 87 ug/L.

For these reasons, we will not recommend adopting the national criterion at this time. If EPA refines their criterion to address the foregoing concerns, we will likely adopt it in a future triennial review.

***Comment D-4.** *The columns in the numeric criteria tables should be called "Average" and "Maximum" instead of CCC and CMC as it currently does. This would be simpler and the public would understand what it means.*

Response: We agree that this approach would be simpler, but we're not sure it would be as accurate. The CCC column, also commonly called the chronic criteria, is based on the concentration of a pollutant causing toxicity in 4 day exposure tests. So technically, these criteria are not based on average levels over time. It is the nature of water quality standards that at times in order to be accurate, criteria must be expressed in ways that are less simple.

***Comment D-5.** *Certain FAL metals criteria are based on formulas which consider hardness and suspended solids levels. This is too complicated for most people. The criteria should be presented as numbers rather than by formula.*

Response: See the previous response. It is important to remember that the formula is the criterion for these substances, rather than numbers derived from the formula. Division staff will assist anyone having trouble with the formula.

***Comment D-6.** *Tennessee's current copper criterion only takes hardness into account.*

Response: This is incorrect. We use both hardness and total suspended solids to implement the criterion for assessment and permitting purposes. Rule 1200-04-03-.02(8) describes the translation process. We have revised the footnote in the fish and aquatic life table to include paragraph (8) as well as (9) in the citation of Rule 1200-04-03-.02.

***Comment D-7.** *Tennessee should adopt the Biotic Ligand Model (BLM) to replace the current copper criterion. This is the approach recommended by EPA.*

Response: The commenter is correct that EPA has recommended adoption of the BLM in place of the historic hardness-based criterion. The BLM greatly expands the number of parameters potentially altering the toxicity of copper that factor into the determination of the criterion.

According to EPA's 2007 copper criteria document:

> The BLM requires ten input parameters to calculate a freshwater copper criterion (a saltwater BLM is not yet available): temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. The BLM is used to derive the criteria rather than as a post-derivation adjustment as was the case with the hardness-based criteria. This allows the BLM-based criteria to be customized to the particular water under consideration.

The department has the following concerns regarding the potential adoption of the BLM:

- Resources. In order to run the model, additional ambient data are needed. Many of these parameters, such as calcium and magnesium, are not commonly monitored. Additionally, samples would have to be filtered, probably in the field, in order to determine dissolved organic carbon levels. Filtering of samples, particularly where particulate material or algae levels are high, is a very time-consuming activity.

- Impact on water quality assessment. Obviously, criteria are not just used to set permit limits. They are also used to assess ambient water quality in Tennessee streams. Currently, we only need hardness and suspended solids levels to determine whether or not copper concentrations violate criteria. If we adopted the BLM, we would need a suite of additional parameters to apply the criterion to ambient data. This would have both a resource (lab costs) and efficiency (assessment staff time) impacts at a time when budgets and staff resources are already stressed.

- Impact on regulated community. Adoption of the BLM would likely necessitate requiring copper dischargers to collect additional effluent and ambient data. We have not gauged their reaction to this

change.

- Very few other states have adopted the BLM in any form. According to information provided by the International Copper Association, only one state (South Carolina) has adopted the BLM as a criterion, although they also retained the hardness-based criterion. Eight additional states – Maryland, Missouri, New Hampshire, New Jersey, New Mexico, North Carolina, Pennsylvania, and Texas – cite the BLM, not as a copper criterion, but as an alternative site-specific criterion method. All other states, like Tennessee, retain the hardness-based criterion.

- Timing. This comment was not formally made during the first round of comments in late 2009 – early 2010. (The initial contact regarding this issue was made in late 2010.) If we adopted the BLM, we would be doing so without allowing the public an opportunity to offer comments.

For all these reasons, we prefer to wait until the next triennial review to consider this change.

***Comment D-8.** *The Biotic Ligand Model (BLM) could be used to develop TMDLs for copper.*

Response: We will keep this in mind. However, with the exception of impacted streams within and downstream of the Copper Basin, we have no streams identified as impacted by copper that have not already had a TMDL developed. The TMDL approach is not considered appropriate streams in for the Copper Basin because of the legacy nature of the contaminants. Additionally, alternate control strategies have already been developed for this area.

***Comment D-9.** *The existing biological integrity criterion says that comparison to reference streams in the same ecoregion is appropriate. This passage should be modified to indicate that comparisons to upstream or pre-construction conditions are also appropriate.*

Response: Comparison to reference streams is our preferred approach. Pre-construction or upstream conditions are unlikely to reflect reference conditions and may even be impaired. However, the rules specifically state that other scientifically-defensible methods may be used in evaluating streams biologically.

***Comment D-10.** *Biological integrity in post-construction streams might be improved over previous conditions, but still not comparable to reference conditions. Similarly, upstream/downstream comparison should be allowed. Physical alterations may improve streams.*

Response: Rule 1200-04-03-.03(3)(m) and (n) establishes the clean water goals for biological integrity and habitat in streams. It is important that this goal be based on unimpaired conditions. Pre-construction or upstream conditions may be impaired. Physical alterations that truly improve streams would not run afoul of any of Tennessee's clean water regulations, since such projects would avoid causing degradation.

E. 1200-04-03-.03(4), Criteria for Water Uses, Recreation

Comment E-1. *The numeric recreational criteria should include frequency and duration info specific to the application of Water and Organisms and Organisms Only levels.*

Response: See response D-1.

F. 1200-04-03-.04, Definitions

Comment F-1. *This section should define habitat alteration.*

Response: The criterion for habitat provides examples of activities that alter habitat, which we consider more useful than a definition.

Comment F-2. *This section should define "best available instrumentation or laboratory analyses."*

Response: This phrase refers to the most precise instrument or laboratory method for the analysis of each parameter. Because this will differ from test to test and instrument to instrument, there's no single definition.

Comment F-3. *This section should define "normal water conditions."*

Response: The phrase "normal water conditions" is only used once in these rules [1200-04-03-.05(5)] and is used just to give a background statement, not the language of a criterion or a definition critical to a criterion. As such, we see no practical value in a definition.

Comment F-4. *This section should define "measurable degradation."*

Response: Our definition was proposed in this rulemaking in 1200-04-03-.04(11).

Comment F-5. *This section should define "discharge."*

Response: Discharge is defined in the permitting regulation (1200-04-05) which is the appropriate place for it.

Comment F-6. *"HUC" should be defined.*

Response: We searched the document to find a place this term was used in the regulation, but didn't find one. HUC is hydrologic unit code.

Comment F-7. *In Rule 1200-04-03-.04(3) you put the concept of "non-temporary" alterations within the definition of degradation. This is awkward wording.*

Response: We will delete "non-temporary" and add the phrase "except those alterations of a short duration."

Comment F-8. *An impact of short duration might significantly impact a stream. How would this concept be applied?*

Response: Even if short in duration, degradation that causes criteria to be violated and uses impacted cannot be authorized.

A real-life example of the application of this concept in an ONRW occurred a few years ago. Significant flooding along the eastern side in the Great Smoky Mountains National Park seriously damaged the Little River Road, which had to be closed. Emergency repairs were needed, which required a permit. Since the Little River is an ONRW, a strict, no-degradation policy might have made restoring the road impossible, since some habitat degradation was necessary to stabilize the site. However, since the alterations were of short duration and would not harm uses, the work could be authorized.

This discretion is needed and has been accepted in concept by EPA. Generally, we are speaking of an alteration lasting hours or days, not months or years. Also, chronic or acute toxicity will not be authorized.

Comment F-9. *How is assimilative capacity calculated in Rule 1200-04-03-.04(4)(a)1? What data are used and whose responsibility is it to perform the calculations? Detailed procedures would be helpful.*

Response: The assimilative capacity of a stream for a given pollutant can be expressed as the amount of that pollutant that could be added at low flow without causing the criterion for that substance to be violated. So the low flow calculations for the stream, the in-stream (background) concentration of the substance, plus the

proposed discharge volume are critical factors. In the proposed rule language, the applicant or their consultant must determine the amount of degradation their activity would cause. These calculations are later confirmed by the department. Detailed permitting procedures are not appropriate for inclusion in water quality standards. Additionally, EPA guidance is available.

Comment F-10. *Rule 1200-04-03-.04(4)(a)3 uses the term "segment." This should be defined.*

Response: There is no single definition of this term. It is dependent on the circumstances in which it is applied. For example, the relevant segment depends on the nature of the activity and the extent of its impact on the stream. The rationale section of individual permits will explain the stream segment(s) being considered.

Comment F-11. *Rule 1200-04-03-.04(4)(a)3 refers to "scientific basis," "insignificant," and "insignificant effect." These terms should be explained and defined.*

Response: In this paragraph, these terms have their generally accepted meanings rather than specific or technical ones. The rationale section of individual permits will explain the basis for the conclusions regarding significance.

Comment F-12. *Rule 1200-04-03-.04(4)(b) refers to gauging the effects of impacts "individually and cumulatively." These terms should be explained and defined.*

Response: In approving a *de minimis* level of degradation, the department must ensure that the effect is not only *de minimis* individually, but also that multiple authorizations of small amounts of degradation has not caused the cumulative cap to be exceeded.

Comment F-13. *The regulation has not defined the "in-system" mitigation mentioned in Rule 1200-04-03-.04(4)(b). TDEC has previously stated that it is the 12 digit HUC, but it should be defined as being within the 6 or 8 digit HUC.*

Response: As the commenter noted, we've stated previously that under normal conditions, mitigation that takes place within the same 12 digit HUC area will be considered "in-system." One exception is in Outstanding National Resource Waters (ONRWs) where mitigation would be required to take place in the ONRW. We will revise the definition to reflect the ONRW provision.

It is important to remember that in streams with available parameters or ETWs, degradation can still be authorized if mitigation is not in-system. However, out of system mitigation will not be considered *de minimis* in effect, and therefore, economic and social necessity will have to be established.

Comment F-14. *Any type of compensatory mitigation should be considered to make degradation de minimis.*

Response: In order to make the resource loss very small (*de minimis*) in a specific stream, the mitigation must happen nearby (in-system), not many miles away. Out of system mitigation is entirely appropriate in many settings, but it is not *de minimis* in effect.

Comment F-15. *The department's definition of in-system mitigation is different than other agencies like the Corps of Engineers and the Tennessee Stream Mitigation Program.*

Response: We do not think there is any inconsistency here. "In-system" is employed for the sole purpose of establishing what level of mitigated degradation can be considered *de minimis* under the antidegradation policy. The Tennessee Stream Mitigation Program manages money placed in mitigation banks to replace lost resource values. These lost resource values are more than *de minimis*.

Comment F-16. *Why is there a different interpretation of "in-system" in Outstanding National Resource Waters (ONRWs)?*

Response: Because ONRWs are intended to receive the highest level of protection under the antidegradation policy, in order to be considered *de minimis* any mitigation must occur in the ORNW. Of course, avoidance and minimization of degradation in an ONRW would be the preferred approach rather than mitigation.

Comment F-17. *Rule 1200-04-03-.04(11) refers to "sufficient magnitude." This term should be explained and defined.*

Response: In this paragraph, this term is used in its generally accepted meaning rather than a specific or technical one. The rationale section of individual permits will explain the basis for the conclusions.

Comment F-18. *Rule 1200-04-03-.04(12) about mixing zones refers to effluent becoming "dispersed and mixed." These terms should be explained and defined.*

Response: In this paragraph, these terms are used in their generally accepted meanings rather than specific or technical ones. The rationale section of individual permits will explain the basis for the conclusions.

Comment F-19. *The department is not consistent with the use of the term "measurable" because it has not been applied to habitat alterations.*

Response: In previous promulgated versions of the antidegradation policy, the concept of using a measurable amount of habitat alteration to determine whether or not degradation was *de minimis* was in the rule. In practice, this was a very difficult to implement. Habitat in a single spot can be measured, however, "total" habitat in a waterbody segment is difficult to quantify. For that reason, we went away from the idea of measuring habitat and moved toward the better idea that habitat alterations can only be *de minimis* if appropriate avoidance, minimization, and in-system mitigation is employed.

Comment F-20. *Please specify how you will determine whether degradation is measurable or not. Will Required Reporting Limits (RRLs) be used for this purpose?*

Response: We intend for this determination to be based on the method detection level, which may be different that the RRL. Additionally, for field instruments (DO, temperature, etc.) we will use the published accuracy information for that equipment.

Comment F-21. *In Rule 1200-04-03-.04(16), the term "parameter" has been defined so that some criteria will not be considered parameters for the purpose of applying the unavailable parameters provisions. Obvious examples are habitat and biological integrity.*

Response: The commenter is correct. Our long-standing position is that some criteria are for condition indices which are useful for assessing water quality, but are not parameters in the antidegradation sense. However, each of these indices is composed of parameters. For example, sediment deposition is one of the components of the condition index known as "habitat." Sediment deposition can be directly measured and is therefore a parameter.

Comment F-22. *In the definitions of "parameter" and "response variable," the word measurable is used. Might this cause confusion since that term is also defined?*

Response: We agree with this comment. We will revise these definitions so that they say "A parameter that can be measured…" and "not directly measured" instead of "A measurable parameter" and "not directly measurable."

Comment F-23. *Rule 1200-04-03-.04(16) about parameters refers to "criteria." These terms should be explained and defined.*

Response: The term "criteria" is introduced in Rule 1200-04-03-.02, General Considerations. The revised introductory wording in the paragraph for each of the uses of the waters in Rule 1200-04-03-.03, also now makes clear that each of the subparagraphs is a criterion.

Comment F-24. *Rule 1200-04-03-.04(16) about parameters refers to properties of "water." This should be "water and sediment."*

Response: The term "water" sets the context and is not intended to suggest that chemicals in sediment, fish flesh, or any other medium associated with waters aren't properly considered parameters also.

Comment F-25. *In Rule 1200-04-03-.04(21), the proposed definition for "response variable" says that it is a measurable parameter. If it's a parameter, why not call it "response parameter?"*

Response: Variable has a broader meaning than how we defined parameter. It simply means any characteristic in an experiment or analysis that can change. We defined parameter more narrowly, with the need to have a workable approach to applying the antidegradation policy in mind.

We don't think that response variables are always parameters. Within the context of the antidegradation policy - specifically, the provisions for protection of streams with unavailable parameters - it is important to make a distinction between pollutants and the effects they cause.

The classic example of the need to differentiate between pollutants and response variables is dissolved oxygen. Dissolved oxygen is a parameter, but it's not a pollutant. There's a criterion for DO, but it is the lack of oxygen that causes problems, not the presence of it. So if a stream was impaired due to low DO, we would not want to say that the stream was unavailable for oxygen.

What the regulation needs to say is that the stream is unavailable for the pollutant(s) causing the low oxygen levels, such as BOD or nutrients.

We agree with the commenter that the use of the word "parameter" in the definition for "response variable" confuses the issue. Since, as we've established, not all response variables are parameters, we will change the definition as follows. Additionally, we will reword to avoid confusion over the meaning of "measurable":

> 21. Response Variable – a **characteristic of water quality** that **can be measured and** changes as a result of an alteration of habitat, water withdrawal, or discharge of pollutants, as distinguished from **the agents** that cause changes in aquatic systems. (Emphasis added to illustrate wording changes.)

Comment F-26. *The department has proposed to differentiate between parameters that change as a result of the actions of a pollutant, and those parameters that are pollutants. How will this response variable provision be implemented in impaired waters where the causal variable is not known?*

Response: The scenario described is one that happens rarely, and when it does, the unknown causal variable is usually a toxicant. In these cases, discharge permits would be written to prohibit whole effluent toxicity at low flow conditions. The discharger might also be asked to isolate the most likely pollutant and once identified, it would be specifically limited in their permit.

Comment F-27. *A definition for "Required Reporting Level" should be provided.*

Response: The meaning and purpose of RRLs is already provided in Rule 1200-04-03-.05(8).

G. SPECIFIC COMMENTS: 1200-4-3-.05, Interpretation of Criteria

COMMENT G-1. *Changing the name of the table in Rule 1200-04-03-.05(8) from Method Detection Levels to Required Reporting Levels may change how the table is interpreted.*

RESPONSE: We believe the changed name is more consistent with how the table should be used.

COMMENT G-2. *EPA says ML (method reporting levels) are 3.18 times the method detection levels.*

RESPONSE: Our Required Reporting Levels are not the same as EPA's method reporting levels and there is no mathematical relationship between our RRLs and method detection levels.

COMMENT G-3. *Some of the RRLs (required reporting levels) in permits are unreasonably low. (List provided by the commenter.)*

RESPONSE: RRLs are an important tool in protecting water quality by assuring that permittees utilize appropriate analytical techniques.

It is important to note that according to Rule 1200-04-03-.05(8), not all substances limited in a permit are subject to RRLs. The regulation currently states: "In instances where permit limits established through implementation of these criteria *are below analytical capabilities*, compliance will be demonstrated..."(emphasis added). So the requirement for RRLs is triggered by the permit limit, not the criterion, since almost all dischargers get some dilution credit for the receiving stream. It would not make sense to require a very low detection level when the permit limit is much higher.

One of the RRLs brought to our attention by the commenter was anthracene. The commenter is correct that the RRL is challenging at 0.73 ug/L. However, the lowest numeric criterion for anthracene is 8300 ug/L, so a permittee would <u>never</u> be required to meet the RRL, according to the regulation.

A metal mentioned by the commenter was zinc, with an RRL of 1.0 ug/L. The fish and aquatic life criterion for zinc is hardness dependent, but at a hardness of 100 mg/L, the criterion would be 120 ug/L, so again, even in a zero flow stream, no permittee would be required to reach the RRL.

Acrolein and acrylonitrile were identified as substances with challenging RRLs (1 ug/L). As pointed out by a commenter, at low detection levels, these compounds are unstable and results can be uncertain. We looked at our permitting database and found no instance in which permit limits have been given in Tennessee for these compounds.

Additionally, the commenter should remember that acrolein and acrylonitrile are recreational criteria, the flow basis for permit limits would be a 30Q5. Thus, it is unlikely that a permittee would have permit limits at or below the RRL.

COMMENT G-4. *The commenter is concerned that RRLs will go down.*

RESPONSE: We've proposed no changes to the actual Required Reporting Levels.

COMMENT G-5. *The sentence "The methods, equipment, and general nature of the interference shall be provided" could be misinterpreted to mean that Method Detection Levels are required.*

RESPONSE: If method detection techniques must be used to meet RRLs, then it is the permittee's obligation to do so. But again, angst over RRLs such as zinc - which a permittee would never be asked to report at those levels - is unnecessary.

COMMENT G-6. *Some substances are ubiquitous, such as PCBs, mercury, and zinc. Interferences due to these substances are common. It is an unreasonable burden for permittees to be required to document this each time.*

RESPONSE: The department reviews a great deal of data collected at monitoring stations across the state. While we concede that zinc is often detected in the water column, PCBs and mercury are not. Of course, this is good, since at current method detection levels, if PCBs and mercury are detected, criteria are typically violated.

We have an important responsibility to ensure that permittees use proper techniques to give ourselves the best possible chance to determine whether or not permit limits and criteria have been met. Documenting the nature of interference when it occurs does not seem to be an unreasonable burden, since the alternative might result in less than serious efforts to achieve detection levels and in extreme cases, might provide a handy smokescreen for permit violations.

Additionally, in cases where there has been established a repetitive interference, it would seem to us that it is not difficult to report the exact same explanation multiple times.

COMMENT G-7. *The permittee should be allowed to keep the documentation of interferences on file rather that submitting it to the department.*

RESPONSE: This is information we need and the commenter's suggestion places an unreasonable burden on the department. If the rationale is submitted automatically, we won't have to go looking for it each time.

H. 1200-04-03-.06, Tennessee Antidegradation Statement

Comment H-1. *It's difficult to review the proposed WQS changes because the department didn't differentiate between language that was changed vs. language that was simply moved.*

Response: We don't disagree with the comment, but the public review period has ended. We will help any reviewer with their understanding of our proposal, but will give further consideration for implementation of this suggestion in the next triennial review.

Comment H-2. *The proposed changes in the terminology of the antidegradation policy, along with the definitions offered in support, are vague and confusing. They should be dropped in favor of going back to existing regulatory language.*

Response: The commenter has not offered any specific suggestions for rewording the definitions and terms to make them less confusing. At every step of the review process, the department has explained the rationale for the changes proposed. Going back to the old language will not resolve important implementation issues. However, we re-reviewed all of the provisions of the antidegradation rule and the definitions and made changes to make several provisions clearer or more precise.

Comment H-3. *The antidegradation policy is complicated and it is hard to understand what activities can be allowed and which cannot.*

Response: We agree the implementation of the antidegradation policy can be complex. We re-reviewed all of the provisions of the antidegradation rule and the definitions and made changes to make several provisions clearer or more precise. Division staff can always be contacted directly for additional information or clarification.

Comment H-4. *Since the antidegradation policy applies to permitting [Rule 1200-04-03-.06(1)(b)], the aspects of the policy about complete applications and the proposed revisions should be made part of the permit regulations (Rule 1200-04-05-.05).*

Response: We see the commenter's logic, but feel that the provisions of the antidegradation policy need to be kept together rather than parsed out to other regulations. The antidegradation policy and its implementation procedure are part of the water quality standards, according to the Clean Water Act. Additionally, Chapter 5 of the regulations is specific to NPDES permits. The antidegradation policy application requirements also apply to habitat and water withdrawal permits, which are not NPDES permits.

Comment H-5. *Can applicants assume that general permits do not require an antidegradation review [Rule 1200-04-03-.06(1)(b)]?*

Response: Only those general permits public noticed as representing *de minimis* for degradation can automatically be presumed to be free from antidegradation review.

Comment H-6. *The general permits for the aquatic resource alteration program will need to be revised to be consistent with the antidegradation policy?*

Response: When general permits are being renewed, they will need to be public noticed as representing a *de minimis* level of degradation, if that determination can be appropriately made.

Comment H-7. *The definition in Rule 1200-.04-.03-.04(4)(a)1 states that new domestic sources cannot be considered de minimis. Thus, new domestic sources would always be required to do alternatives analysis. However, the application process in the antidegradation rules does not seem to fully reflect this.*

Response: Rule 1200-04-03-.06(1)(b)2, 3 and 4 specifically mention the alternatives analysis requirements for new domestic discharges. However, we understand this comment and will additionally modify the following additional sections:

Rule 1200-04-03-.06(1)(b)1 - **For activities other than new domestic wastewater discharges,** a complete application will include...(emphasis added to illustrate new language)

Rule 1200-04-03-.06(1)(d)1(i) - "**unless the activity... is a new domestic discharge**"....(emphasis added to illustrate new language)

Comment H-8. *The process identified in Rule 1200-04-03-.06(1)(b) sets the applicant up for failure. The regulation does not provide enough information and guidance to ensure the applicant can provide the needed information.*

Response: We understand this concern but do not agree with the commenter that applicants will be unable to comply. The changes in the rule make it clearer what is expected without significant change to the requirements. In the past, the requirements were less clear and the department often had to request additional information after the application had already been submitted. The General Assembly has made it clear in legislation that increased speed in the permit process is a primary concern.

It will greatly speed the issuance of permit decisions, while not lessening the protection for the environment when applications are as complete as possible prior to submittal to the department. Guidance regarding the NPDES application is found in other available documents.

Comment H-9. *A flow chart of the application process identified in Rule 1200-04-03-.06(1)(b), (c), and (d) would be helpful.*

Response: We agree but think that the department's website or guidance documents would be a better place for this to appear than in the regulation.

Comment H-10. *An implementation schedule needs to be added to the process identified in Rule 1200-04-03-.06(1)(b), (c), and (d) so that applications already being processed would not unduly be held up.*

Response: When the board promulgates a new rule there is a required waiting period before it becomes effective, which would serve the purpose envisioned by the commenter. But to be clear, if an application was already submitted prior to the date the rule changes are effective, it will be reviewed under the old rule. After that, new applications would need to provide all the required information before they could be accepted as complete. (There is no penalty for submitting an incomplete application – the applicant simply has to provide the additional information.)

Comment H-11. *In Rule 1200-04-03-.06(1)(b)1, the applicant must state how much degradation will be caused by their activity. Other states have a single standard for degradation. Tennessee adds "de minimis" and "measurable." This imposes an unnecessary burden on applicants.*

Response: The commenter did not specify which other states Tennessee was being compared to, but perhaps these states do not allow degradation in any amounts. Other states do use the concepts of de minimis and measurable. Defining these smaller amounts of degradation makes them allowable under certain limited scenarios. A single definition of degradation could only result in the antidegradation policy being more restrictive and the denial of more applications. We do not consider this appropriate where the amount of degradation is extremely small.

Comment H-12. *To satisfy Rule 1200-04-03-.06(1)(b)1, the applicant must state how much degradation will be caused by its activity. The methods for determining "de minimis" and "measurable" are very different. This imposes an unnecessary burden on applicants. What if the degradation is both measurable and de minimis?*

Response: It might help to think in terms of incremental amounts of degradation. Any lowering of water quality (adding pollutants or removing habitat) without actually violating water quality standards is degradation.

De minimis is an amount of water quality lowering that is small, but can be measured. In some situations, a de minimis amount of degradation can be allowed, but not in all scenarios.

Degradation that is unmeasurable is so small that we can't, through modeling or direct chemical analysis, tell whether or not it is there. Without the ability to make this distinction, theoretically, even adding a molecule of a pollutant to the large river could be prohibited.

The analysis required by these steps is not new. Under the prior rules, the department would do it. These changes allow the applicant to state its position on these issues. The alternative to these concepts would likely be a blanket prohibition of new or expanded discharges into impaired or pristine streams, even if the actual impact from them would be minimal.

Comment H-13. *How does the department envision that applicants will communicate the level of degradation associated with their proposed activity as required in Rule 1200-04-03-.06(1)(b)1?*

Response: The applicant must project the level of degradation associated with their proposed activity and state whether the degradation will be either unmeasurable, *de minimis*, or more than *de minimis*. A rationale must be provided to explain how the applicant arrived at this conclusion.

In the specific case of habitat alterations, the applicant's determination will most likely be that the degradation would be either more than de minimis, or can be rendered de minimis by either avoidance, minimization, or in-system mitigation (within the same 12 digit HUC, or in the case of ONRWs, generally within the ONRW). This is because we are not aware of a method of measuring changes in assimilative capacity due to habitat alterations.

Comment H-14. *Rule 1200-04-03-.06(1)(b)1 refers to application forms. What are these forms and where does the applicant get them? Are they available for review?*

Response: These are the standard federal application forms for NPDES permits. A link to these forms is provided on the department's website under Summary of Permits (http://www.tn.gov/environment/water.shtml). Any comments regarding these federal forms should be directed to EPA.

Comment H-15. *Rule 1200-04-03-.06(1)(b)1 and 3 explains how the alternatives analysis required in part 2 will be done. For this reason, it should be subordinate to part 2 instead of separate.*

Response: We agree that the paragraphs could have been ordered that way, but believe that since part 3 has subparts, there are advantages to formatting the way it currently is. Nor would it be parallel with the other subparts of part 2, if part 3 were put under part 2.

Comment H-16. *Rule 1200-04-03-.06(1)(b)2 requires the evaluation of all alternatives in order to determine which ones are "feasible". This evaluation should be limited to reasonable alternatives.*

Response: We agree and added the word "reasonable."

Comment H-17. *Rule 1200-04-03-.06(1)(b)3 needs detailed procedures on how alternative analysis submissions will be evaluated by the department.*

Response: We agree that evaluation procedures are important, but think they would be better placed in policy or SOP documents.

Comment H-18. *Rule 1200-04-03-.06(1)(b)3(iii) suggests that avoidance of stream relocations is an alternative that avoids degradation. This should be deleted as stream relocations do not degrade habitat.*

Response: We cannot agree that all stream relocations do not degrade habitat. Remember. Degradation is any decrease in water quality, not the level of decrease that would violate water quality standards. The amount of degradation, if any, of a stream relocation depends on both the design and the implementation of the relocation. Avoiding or minimizing a stream relocation is an alternative that will lessen degradation, since even in the best relocations there are at least the temporary impacts until constructed areas stabilize and vegetation matures. The provision suggesting that the footprint of a project might be altered to avoid degradation is valid and the application should demonstrate that this alternative has been considered, even if ultimately ruled-out as infeasible.

Comment H-19. *Why must the department in Rule 1200-04-03-.06(1)(d) redo calculations regarding the level of degradation submitted by the applicant? Isn't this a duplication of efforts? Knowing the department will check the calculations will remove the applicant's incentive to do a good job.*

Response: Our goal is to provide for a thorough, but streamlined, application review process. In most cases, we will simply check the calculations and the rationale. Only where we find errors will the calculations be redone. We would not be doing our due diligence to simply assume that the permittee's calculations are correct.

We disagree that the fact of having applications reviewed lessens the incentive to submit quality work. We believe that applicants, their consultants, and the public all expect permit applications to be reviewed and understand that checking calculations is part of that process.

Comment H-20. *What basis in Rule 1200-04-03-.06(1)(d) would the department use to overrule the applicant's conclusions regarding the level of degradation to be caused by an activity?*

Response: The ultimate basis would be that the conclusions are incorrect. The reasons for that could be many, including, calculation errors, use of assumptions that do not fit the situation, lack of scientific or factual support for assertions, or incorrect input for a model.

Comment H-21. *In Rule 1200-04-03-.06(1)(d)1 the revisions state that the antidegradation review can be concluded if the degradation is found to be unmeasurable. However, a previous passage states that municipal*

discharges can never be de minimis. Is this consistent? Also, what about substances with criteria below method detection levels or that are bioaccumulative? What about Outstanding National Resource Waters?

Response: The commenter is correct. We will modify and clarify the first sentence to create sub-categories:

> In the case of discharges, if the department determines that no measurable degradation will occur as a result of the activity, no further review under this rule (1200-04-03-.06) is required regardless of the antidegradation classification of the receiving stream, **unless the activity:**
>
> **(1) is a new domestic wastewater discharge, or**
>
> **(2) introduces a parameter identified as bioaccumulative, or**
>
> **(3) introduces a parameter with a criterion below the current method detection level for that substance, or**
>
> **(4) is proposed to occur in an ONRW.**
>
> (emphasis added to illustrate new language)

Further, we will modify (d)(2) as follows:

> In the case of withdrawals **from waters other than ONRWs that require permits** ...(emphasis added to illustrate new language)

Comment H-22. *Rule 1200-04-03-.06(1)(e) requires the department to determine the antidegradation status of the receiving stream. The department should have a comprehensive monitoring program so that applicants are not required to wait while a determination of water quality is made. Other states have done this.*

Response: The department maintains a network of 5000 monitoring stations and in many streams, current water quality condition is known. However, with over 60,000 miles of indexed streams, it is not reasonable or realistic to think that we could maintain current assessments of that much water. We do not know of any other states that have done so.

The commenter is reminded that under the statute commonly referred to as the "Permittee's Bill of Rights," very challenging time-schedules have been placed on the department for permit issuance. Of course, applicants can assist in, and dramatically hasten, the permit review process by submitting complete and accurate application information, something the new antidegradation policy revisions attempt to ensure.

Comment H-23. *If the department does not know the antidegradation status of a stream where an activity is proposed, it should be presumed to have available conditions [Rule 1200-04-03-.06(1)(e)]. If the stream has not been previously identified as an ETW, it should be presumed to not be one.*

Response: Our implementation procedure requires a determination of the antidegradation status of the stream where an activity is proposed. To make this determination by presumption invites legal challenges. It is unlikely that EPA would approve such an approach.

Comment H-24. *The department maintains that it must make a determination regarding the conditions of a stream in order to apply the antidegradation policy and that these water quality conditions must not be presumed [Rule 1200-04-03-.06(1)(e)], yet the department frequently assumes impacts in unassessed streams.*

Response: We think the commenter is referring to situations in which an assessment of impairment is made on a stream, then tributaries that have not been monitored are included within the assessment unit as impaired. This works the other way as well – sometimes tributaries that have not been monitored are assessed as fully supporting if the mainstem stream is fine.

When a stream is assessed, we not only look at the data that have been collected, but also at notes and photographs that have been made by staff about the watershed as a whole. Additionally, we have immediate access to high quality aerial photographs. Where we find evidence that small tributary streams have similar characteristics to the mainstem that has been monitored, we are confident in including them in the assessment, either good or bad.

Comment H-25. *If a stream has not been listed on the most current 303(d) List, the department should presume that it has available parameters [Rule 1200-04-03-.06(1)(e)].*

Response: See the previous response. The 303(d) is simply an every two year compilation of assessment results that is helpful in prioritizing TMDL efforts. The 303(d) list carries no additional regulatory authority and more current water quality assessment information is often available. We must regulate streams based in the condition of the stream at the time of the application, rather than on its 303(d) listing status.

Comment H-26. *If a stream has not been assessed prior to the receipt of an application, it should be presumed to have available parameters in Rule 1200-04-03-.06(1)(e).*

Response: See the previous responses.

Comment H-27. *An applicant should be able to go to the department's website and determine if a stream has been identified as ETW, impaired, or habitat altered [Rule 1200-04-03-.06(1)(e)].*

Response: To a certain extent, they already can. http://www.tn.gov/environment/

- Compilation of known ETWs: http://environment-online.state.tn.us:8080/pls/enf_reports/f?p=9034:34304:1041537674797901
- Online GIS-based mapping of assessment information: http://tnmap.tn.gov/wpc/default.aspx?resetSession=true

While the above are good resources, it's important to remember that the absence of a stream from the web compilations may not mean that it isn't an ETW or impaired, just that it hasn't been assessed yet.

Comment H-28. *The basis for the identification of a stream or wetland as an ETW or the assessment of a stream or wetland as impaired or habitat altered [Rule 1200-04-03-.06(1)(e)] should be made available to applicants upon request. Where this basis cannot be provided, in-system mitigation should not be expected.*

Response: We agree.

Comment H-29. *If a stream has been found not to support a use such as fish and aquatic life protection, and has unavailable parameters [Rule 1200-04-03-.06(2)], increased degradation should not be allowed for <u>any</u> parameter that might have any detrimental effect on that use (in this case, aquatic life).*

Response: Except in a narrow range of circumstances, the antidegradation policy does not prohibit degradation. The policy says that where degradation is in the public interest, it can be allowed provided that the concentrations of that substance are not currently violating water quality standards. Significant degradation cannot be authorized in Outstanding National Resource Waters.

The commenter's suggestion that additions of any substance – even if that substance is not currently violating water quality standards – should be prohibited in impaired waters is unworkable and contrary to the spirit of water quality regulation. Under this approach, if a stream was impacted by copper, we could not authorize an increased loading of zinc.

EPA addressed this by identifying the parameter-by-parameter approach as an appropriate antidegradation implementation method. According to EPA's *Water Quality Standards Handbook*, the two steps of this approach are:

- Assess each waterbody parameter to identify any pollutant criteria for which water quality is better than required by the criterion's threshold level. (Not all parameters need to be better.)

- For each positive finding, calculate the increment between existing quality and what is established by the criterion as necessary to protect "fishable/swimmable" uses. This increment — termed the "assimilative capacity" of the waterbody — is considered the resource to be protected.

This is the approach we follow. Using the previous example: if the concentrations of zinc in a waterbody were "better than required by the criterion" then zinc has an assimilative capacity that could be assigned if all other requirements are met. Copper would not have an assimilative capacity since its criterion is not being met. The department would appropriately treat the two parameters differently.

The concern behind this comment, which was also made previously in this rulemaking process, is the reason why we have clarified what are criteria and added definitions for "parameter" and "response variable."

Comment H-30. *Why do the provisions for unavailable conditions [Rule 1200-04-03-.06(2)(a)] contain a prohibition against bioaccumulative substances or substances whose criteria are below current method detection levels? If the concentrations will be unmeasurable, can't they be allowed in all cases?*

Response: If a substance has been identified as already impacting a stream, usually the requirement that as long as a new loading is not "measurable" it is allowable, will be appropriately protective. However, in the case of bioaccumulative substances or substances with very low criteria, an additional level of protection is warranted.

We will modify the language in Rule 1200-04-03-.06(1)(d)1 to clarify that bioaccumulative or low criteria substances need additional scrutiny.

Comment H-31. *Rule 1200-04-03-.06(2)(a) references current "method detection levels." Is this the same as required reporting levels?*

Response: No, the method detection level is generally lower and is specific to the instrument and EPA methodology being used.

Comment H-32. *The application of antidegradation to water withdrawals in Rule 1200-04-03-.06(2)(b) should be limited to their potential impacts of habitat or biological integrity. Water withdrawals do not affect chemical concentrations in streams.*

Response: We think that they can in certain circumstances. For example, if we were asked to authorize a water withdrawal upstream of an industrial or municipal discharger, the diversion of water could, at low flow, increase in-stream concentrations of parameters discharged. However, if the concentrations remained the same, there is no degradation and no need to implement the antidegradation policy.

Comment H-33. *The proposed changes in the antidegradation policy in Rule 1200-04-03-.06(2) are matters that have been ruled upon by the Chancery Court of Davidson County in Pickard v. TN Water Quality Control Board.*

Response: The chancellor's ruling in this case was the Court's interpretation of the meaning of the existing regulation promulgated in 2007. This ruling does not bind us to previous regulation language. Also, some aspects of the chancellor's rulings have now been reversed by the Court of Appeals. The triennial review process is intended to allow water quality standards to be revised as we receive new guidance and learn from implementation efforts.

Comment H-34. *If the regulation is revised to clarify that impaired streams are only considered unavailable for the specific pollutant(s) causing the impairment [Rule 1200-04-03-.06(2)], that will appear to be intended to allow the maximum amount of pollution in waterbodies.*

Response: The Act prohibits the department from issuing permits that would allow the condition of pollution. We consider our interpretation of the policy to be based on common sense. Streams are only unavailable for the pollutants specifically causing water quality standards to be violated. We can issue a permit for an activity that would cause degradation, after alternative analysis and determination of public need, of only those parameters that are available.

Comment H-35. *If a stream has available conditions for habitat, the requirement regarding alterations should simply be that the degradation not cause water quality standards to be violated. There should be no requirement that social and economic necessity be determined, especially for transportation projects [Rule 1200-04-03-.06(3)(c)].*

Response: Such a policy would be in direct violation of the Clean Water Act and rules and would ensure federal disapproval of that provision because the federal regulations require analysis of alternatives and consideration of the economic or social justification prior to authorizing degradation, not just prior to criteria violation. Transportation projects already go through intensive financial and environmental review to ensure that they are in the public interest. It seems to us that in many situations, this information would not require much modification to satisfy the economic and social justification of the antidegradation policy.

Comment H-36. *Who is responsible for making the determination that degradation is "necessary" in Rule 1200-04-03-.06(3). What criteria will be used?*

Response: When the water board asked multiple agencies and groups to meet to work out an agreement on antidegradation provisions about ten years ago, it was decided by the group that the department would have this responsibility as part of the permit issuance process. This was then approved by the Board in the current language of the rule. The basis for the determination would be review of the alternatives analysis and economic information provided by the applicant. Decisions made by the department would be subject to requests from the applicant or third-parties for review by the board and, thereafter, by the courts.

Comment H-37. *If an applicant has proposed mitigation, they should not be required to demonstrate social and economic necessity as required in Rule 1200-04-03-.06(3)(c). The forms used for this are not appropriate for linear projects.*

Response: The state must make a determination that the degradation is in the public interest, even if mitigation has been proposed, unless in-system mitigation has been used to render the degradation *de minimis*. As the regulation already states, alternate information formats may be used by applicants if the EPA forms are inappropriate.

Comment H-38. *In Rule 1200-04-03-.06(4)(a)1, the regulation refers to "Waters within state or national parks, wildlife refuges, forests, wilderness areas, or natural areas." A colon should be added after the word "national" so that it is clear that both state and federal areas are included for the entire list.*

Response: We think this is already clear.

Comment H-39. *A revisions to Rule 1200-04-03-.06(4)(c) proposes to delete the requirement that the applicant be informed in writing that the stream they intend to alter is an Exception Tennessee Water. Why?*

Response: Rule 1200-04-03-.06(1)(e) establishes the department's responsibility for public notice once an application has been deemed to be complete. Thus, more than just the applicant will be notified. Additionally, Rule 1200-04-03-.06(4)(d)1 provides specific notice requirements for Exceptional Tennessee Waters.

Comment H-40. *The language in Rule 1200-04-03-.06(4)(c)3 that states that "new or increased habitat alterations that would cause degradation..." is awkward.*

Response: The commenter is correct and we will revise the phrase to read "an activity that would cause degradation of habitat..."

Comment H-41: *The requirements for approving degradation in Exceptional Tennessee Waters [Rule 1200-04-03-.06(4)(c)] appear to have been diluted to the point that there is no difference between these requirements and those for waters with available parameters*

Response: We do not agree this is the case. The justification for degrading higher resource value stream must be stronger than with streams with available conditions, but no exceptional values. Additionally, the declaratory order contested case procedures in Rule 1200-04-03-.06(4)(d) are specific to ETWs.

The process for issuing or declining to issue permits must not be prolonged unnecessarily and must comply with existing state laws regarding the rights of permittees.

Comment H-42: *Clarify what the department means by "no discernible effect" under the ONRW protections.*

Response: We will replace this phrase and return to the idea of no "significant" effect.

Comment H-43: *Habitat alterations that represent a de minimis amount of degradation can be allowed in ONRWs, as long as any mitigation occurs within the ONRW. Is it possible that a de minimis amount of physical alteration might cause chemical degradation, which would be prohibited?*

Response: It is possible. We will revise the second part of 1200-04-03-.06(5)(b)2 so that it now reads "no new or increased habitat alteration that would cause degradation of habitat above the level of de minimis or degrade water chemistry for more than a short duration will be authorized."

Regulatory Flexibility Addendum
Pursuant to T.C.A. §§ 4-5-401 through 4-5-404, prior to initiating the rule making process as described in T.C.A. § 4-5-202(a)(3) and T.C.A. § 4-5-202(a), all agencies shall conduct a review of whether a proposed rule or rule affects small businesses.

These rules are federally mandated. Section 303(c) of the federal Clean Water Act, 33 U.S.C. §1313(c) requires states to review and modify their water quality standards at least once every three years.

Impact on Local Governments

Pursuant to T.C.A. §§ 4-5-220 and 4-5-228 "any rule proposed to be promulgated shall state in a simple declarative sentence, without additional comments on the merits of the policy of the rules or regulation, whether the rule or regulation may have a projected impact on local governments." (See Public Chapter Number 1070 (http://state.tn.us/sos/acts/106/pub/pc1070.pdf) of the 2010 Session of the General Assembly)

Most local governments will not be impacted by these rule amendments. However, it is possible that there will be a minor impact on some local governments because of specific situations.

Additional Information Required by Joint Government Operations Committee

All agencies, upon filing a rule, must also submit the following pursuant to T.C.A. § 4-5-226(i)(1).

(A) A brief summary of the rule and a description of all relevant changes in previous regulations effectuated by such rule;

The rules that are being amended set the standards for determining how clean the water in Tennessee must be. The federal Clean Water Act requires that these rules be reviewed and modified at least every three years and that the standards in them meet federal requirements. The major changes being made are:

- Certain numeric standards are changed to reflect changes in federal standards;
- Changes are being made in wording to make it more precise;
- Clarifications are being made in the process of review of applications;
- The permitting process for certain waters is being revised for clarity and to reduce processing time;

The waters identified as trout streams are being updated based on information from TWRA.

(B) A citation to and brief description of any federal law or regulation or any state law or regulation mandating promulgation of such rule or establishing guidelines relevant thereto;

Section 303(c) of the Clean Water Act, 33 U.S.C. §1313(c) mandates the triennial review of these rules and Tenn. Code Ann. Section 69-3-106 directs the board to adopt such rules and has guidelines relevant to them.

(C) Identification of persons, organizations, corporations or governmental entities most directly affected by this rule, and whether those persons, organizations, corporations or governmental entities urge adoption or rejection of this rule;

Clean water goals form the foundation of Tennessee's water quality protection program and are used to assess ambient water quality, calculate discharge permit limits, and establish clean-up goals for impaired waters. All Tennesseans are positively impacted, either directly or indirectly, by the periodic review of these goals. While particular entities may disagree on the specific protection levels, all agree in the need to have goals in regulation.

(D) Identification of any opinions of the attorney general and reporter or any judicial ruling that directly relates to the rule;

Although the Attorney General has issued opinions that relate to the Water Quality Standards, including Opinion No. 09-93, we are not aware of any that relate directly to these amendments.

(E) An estimate of the probable increase or decrease in state and local government revenues and expenditures, if any, resulting from the promulgation of this rule, and assumptions and reasoning upon which the estimate is based. An agency shall not state that the fiscal impact is minimal if the fiscal impact is more than two percent (2%) of the agency's annual budget or five hundred thousand dollars ($500,000), whichever is less;

There should be no increase of decrease in state or local government revenues or expenditures resulting from the promulgation of these amendments.

(F) Identification of the appropriate agency representative or representatives, possessing substantial knowledge and understanding of the rule;

Gregory Denton
Manager Planning and Standards Section
Division of Water Pollution Control

(G) Identification of the appropriate agency representative or representatives who will explain the rule at a scheduled meeting of the committees;

Alan M. Leiserson
Legal Services Director

Office of General Counsel

(H) Office address, telephone number, and email address of the agency representative or representatives who will explain the rule at a scheduled meeting of the committees; and

Office of General Counsel
Tennessee Department of Environment and Conservation
20th Floor L & C Tower
Nashville, Tennessee 37243-1548
(615) 532-0131
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(I) Any additional information relevant to the rule proposed for continuation that the committee requests.

The Department is not aware of any.