

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. 1200-4-3 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 Rule 1200-04-07. In response to this and other comments, we have made changes to the antidegradation statement (in 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 rationale 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 1200-4-3-.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 1200-4-3-.03(1) will now say: “the criteria for the use of Domestic Water Supply are the following.”

D. SPECIFIC COMMENTS: 1200-4-3-.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 1200-4-3-.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: 1200-4-3-.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: 1200-4-3-.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 [1200-4-3-.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/NutrientCriteriaWorkplan Rev.pdf](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 subcoregions, 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" [1200-4-3-.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 phrase “except as authorized under 1200-4-3-.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 [1200-4-3-.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: 1200-4-3-.03(4), Criteria for Water Uses, Recreation

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

Response: Our recreational turbidity criterion in 1200-4-3-.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 than 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: 1200-4-3-.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: 1200-4-3-.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: 1200-4-3-.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."

1200-4-3-.06(2)(a) says that "unavailable parameters exist where water quality is at, or fails to meet, the water quality criteria in rule 1200-4-3-.03."

1200-4-3-.06(3)(a) says that "available parameters exist where water quality is better than the water quality criteria in rule 1200-4-3-.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 subparagraphs (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 1200-4-3-.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” [1200-4-3-.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: 1200-4-3-.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 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 1200-4-03-.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 1200-4-3-.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 Chapter 1200-4-3-.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. Chapter 1200-4-3-.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: 1200-4-3-.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 1200-4-3-.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 or fish and aquatic life criteria, rather than using the conjunction and, 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. 1200-4-3-.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 1200-4-3-.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 minimus 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. 1200-4-3-.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 1200-4-3-.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. 1200-4-3-.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 1200-4-3-.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 [1200-4-3.06(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, 1200-4-3-.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 [1200-4-3.06(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. 1200-4-3-.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. 1200-4-3-.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 1200-4-3-.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 paragraph (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, 1200-4-3-.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 alternatives 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 1200-4-3-.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 1200-4-3-.06(2) & (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 1200-4-3-.06(2) & (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 1200-4-3-.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 1200-4-3-.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 1200-4-3-.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 1200-4-3-.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 1200-4-3-.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 1200-4-3-.06(5)(b), water withdrawals are not mentioned.

Response: This is an oversight that we will correct.

N. SPECIFIC COMMENTS: 1200-4-4, 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 1200-4-4 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 1200-4-4 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 1200-4-4:

Proposed stream to add	Tributary to: (listed trout stream)	Page of CH 1200-4-4
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 1200-4-4
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 1200-4-4 as either trout streams or naturally reproducing trout streams. 1200-4-3-.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 1200-4-4:

Response: These streams are tributaries to streams that are already listed in 1200-4-4 as either trout streams or naturally reproducing trout streams. 1200-4-3-.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 1200-4-4:

Proposed stream to add	Tributary to:	Placement in CH 1200-4-4	Page of CH 1200-4-4
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 1200-4-4 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 1200-4-4	Page of CH 1200-4-4
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.