
DEPARTMENT OF ENVIRONMENTAL PROTECTION

LAND USE MANAGEMENT

WATER MONITORING AND STANDARDS

Surface Water Quality Standards

Adopted Amendments: N.J.A. C. 7:7A-1.4

Adopted Readoption with Amendments: N.J.A.C. 7:9B

Adopted Amendments: N.J.A.C. 7:14A-1.2 and 13

Proposed:	April 20, 2009
Adopted:	
Filed:	
Authority:	N.J.S.A. 58:10A-1 *et seq.*, 58:11A-1 *et seq.*, N.J.S.A. 13:1D-1 *et seq.*
DEP Docket Number:	07-09-03/454
Effective Date:	
Expiration Date:	

The Department of Environmental Protection (Department) is readopting the Surface Water Quality Standards (SWQS) at N.J.A.C. 7:9B with amendments, proposed on April 20, 2009 at 41 N.J.R. 1565(a) with the exception of amendments proposed on phosphorus criteria at N.J.A.C. 7:9B-1.14(d)5. The Department is also adopting amendments to N.J.A.C. 7:7A -1.4 and 7:14A-1.2 and 13.

As part of the proposal to readopt the rules, the Department proposed to address nutrient concerns through utilization of an assessment method that would evaluate the existing narrative nutrient criterion in a specific waterbody in order to determine how the phosphorus criteria should be applied. The assessment method addresses situations where a waterbody meets the applicable numeric phosphorus criterion, but still has aquatic growth problems (for example,

algae), as well as those situations where a waterbody is above the numeric phosphorus criterion, but does not actually exhibit any problems. The approach would allow the Department to perform a case-specific examination of water conditions and impose a numeric phosphorus criterion appropriate for the particular waterbody. The Department received comments regarding proposed amendments to phosphorus criteria during the public comment period that ended on June 19, 2009, as summarized below. Several commenters generally opposed the narrative criterion asserting that would weaken protection for surface water bodies. However, many of these commenters also requested that the Department expand the application of the nutrient policies at N.J.A.C. 7:9B-1.5(g) to coastal waters and adopt a narrative criterion for these waters. Other commenters generally supported the Department's approach to evaluate a waterbody's biological response to nutrients. However, many of these commenters raised concerns with the rule as proposed.

The Department carefully considered the comments and determined that it would be appropriate to expand the scope of the nutrient policies at N.J.A.C. 7:9B-1.5(g) to coastal waters and to revise the proposed amendments to the phosphorus criteria at N.J.A.C. 7:9B-1.14(d)5. However, the Department additionally determined that the changes would be too substantive to make on adoption and should be subject to additional opportunity for public comment. The Department is proposing amendments to accomplish these changes elsewhere in this issue of the New Jersey Register (See 41 N.J.R. ----). The Department is adopting the proposed amendments to the nutrient policies at N.J.A.C. 7:9B-1.5(g) with non-substantive changes, but is not adopting the proposed amendments to the phosphorus criteria at N.J.A.C. 7:9B-1.14(d)5. The existing phosphorus criteria at N.J.A.C. 7:9B-1.14(d)5 will remain in effect until the amendments proposed elsewhere in this issue of the New Jersey Register (See 41 N.J.R. ----) are adopted.

This rule adoption can be viewed or downloaded from the Department's web site at http://www.state.nj.us/dep.

Summary of Hearing Officer's Recommendations and Agency Response:

The Department held a public hearing on the proposed readoption with amendments on June 4, 2009 at the Department's headquarters building in Trenton. Debra Hammond, Chief of the Bureau of Water Quality Standards and Assessment served as the hearing officer. The hearing officer recommended that the Department adopt the proposed rules with the changes explained in the responses to comments below. The Department accepts the hearing officer's recommendation.

The record of the public hearing is available for inspection in accordance with applicable law by contacting:

NJ Department of Environmental Protection
Office of Legal Affairs
Attn. DEP Docket Number 07-09-03/454
401 East State Street, 4th Floor
P.O. Box 402
Trenton, New Jersey 08625-0402

Summary of Public Comments and Agency Responses:

The Department accepted comments on the proposal through June 19, 2009. The following people submitted written and/or oral comments. The number(s) in parenthesis after each comment corresponds to the number identifying the commenters below:

1.	Barry, Beth Styler	Musconetcong Watershed Association
2.	Cosgrove, James F. Jr.	OMNI Environmental
3.	Benson Chiles	On behalf of Coastal Ocean Coalition
4.	Gulbinsky, Ellen	Association of Environmental Authorities
5.	Hess, Cheryl A.	Conectiv Energy
6.	Kaliss, Edward T.	
7.	Kushner, Ross	Pequannock River Coalition
8.	Kyde, Marion M.	Delaware River Greenway Partnership
9.	LeMense, Julia	Eastern Environmental Law Center on

		behalf of: Association of Environmental Commissions American Littoral Society Clean Ocean Action Delaware Riverkeeper Environment New Jersey Hackensack Riverkeeper New Jersey Audubon Society NY/NJ Baykeeper Pequannock River Coalition Sierra Club-New Jersey
10.	Mans, Deborah	NY/NJ Baykeeper
11.	Murray, Elise and Tom	
12.	O'Conner, Richard P.	
13.	Pisauro, Micheal	New Jersey Environmental Lobby
14.	Robert-Lawler, Nancy	Musconetcong Watershed Association
15.	Rosenthal, James L.	
16.	Schorr, Ben	
17.	Sheehan, William	The Hackensack Riverkeeper
18.	Tittel, Jeff	Sierra Club
19.	Touhey, Timothy	NJBA
20.	Van Rossum, Maya K.	The Delaware Riverkeeper
21.	Varro, Tom	Sussex County MUA
22.	Zerbe, Faith	Delaware Riverkeeper

DEFINITIONS N.J.A.C. 7:9B-1.4

1. COMMENT: The Department proposed to delete the term "flow-through bioassay" because the term is no longer used in the Surface Water Quality Standards (SWQS). However, while the Department is authorized to use Whole-Effluent Toxicity (WET) testing, because the proposed

WET testing does not assess either non-point or unregulated point sources that impact water quality and aquatic life, takes place prior to chlorination for NJPDES permits and does not access toxicity from chlorine producing oxidants or the resulting cumulative affects and interactions with other contaminants (see Comment 42 by this commenter), the Department should retain the option of using bioassays if such toxicity tests would be more appropriate, based on the Department's discretion. As bioassays would continue to be utilized in appropriate circumstances, the definition for "flow-through bioassay" should be retained. (9)

RESPONSE TO COMMENT 1: The Department deleted the term "flow-through bioassay" because this term is not used in the SWQS. "Flow-through bioassay" is defined in the New Jersey Pollutant Elimination System (NJPDES) rules at N.J.A.C. 7:14A-1.2 as a type of toxicity test in which the test solutions flow into and out of the test chambers on a once-through basis for the duration of the test in accordance with the Regulations Governing the Certification of Laboratories and Environmental Measurements, N.J.A.C. 7:18. Toxicity tests evaluate the impact of wastewater discharges on the receiving water and are more appropriately incorporated into the NJPDES rules. In addition, to removing the term "flow-through bioassay" from the SWQS, the Department updated provisions at N.J.A.C. 7:9B-1.5(f) to reflect the change in terminology from bioassays to Whole-Effluent Toxicity testing and recodified the updated requirements from N.J.A.C. 7:9B-1.5(f) to N.J.A.C. 7:14A-13.6(d).

2. COMMENT: The Department should not delete the definition for "bioconcentration" in N.J.A.C. 7:9B-1.4. The existing provisions in the standards allow the Department to assess toxic substances. Limited Federal testing by National Oceanic and Atmospheric Administration (NOAA) and the United States Environmental Protection Agency (USEPA), as well as the State's fish tissue analyses, indicates bioaccumulation of contaminants is occurring in New Jersey coastal waters. The Department should be taking steps to identify and characterize problem regions in more detail, identify sources, and reduce pollution loadings, not undermining its own potential for evaluating aquatic life. (9)

RESPONSE TO COMMENT 2: The Department deleted the definition of "bioconcentration" from N.J.A.C. 7:9B-1.4 because the term is not used in the SWQS. The USEPA now recommends the use of bioaccumulation instead of bioconcentration for estimating potential human exposure to contaminants via the consumption of contaminated fish and shellfish. See *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* (2000). "Bioaccumulation" refers to the uptake and retention of a chemical by an aquatic organism from all surrounding media (for example, water, food, sediment), while "bioconcentration" refers to the uptake and retention of a chemical by an aquatic organism from water only. For some chemicals, like mercury and PCBs, the magnitude of bioaccumulation by aquatic organisms can be substantially greater than the magnitude of bioconcentration. Thus, an assessment of bioconcentration alone would underestimate the extent of accumulation in aquatic biota for these chemicals. Bioaccumulation is defined in the SWQS. Therefore, the change in terminology is appropriate and allows the Department to protect the State's waters from pollutants that bioaccumulate through the food chain.

3. COMMENT: The Department should define lake as something larger than many of the minor impoundments that it currently regulates as such. (2)

RESPONSE TO COMMENT 3: The Department's SWQS currently has a definition for "Lake, pond, or reservoir" at N.J.A.C. 7:9B-1.4. The current definition of this term excludes many minor impoundments, which are in fact, stormwater retention/detention basins. The Department does not believe it is necessary to separately define "Lake".

4. COMMENT: The Department should define "manmade wastewater discharges". (2)

RESPONSE TO COMMENT 4: The term "manmade wastewater discharges" is only used in the context of "nondegradation waters" which are defined at N.J.A.C. 7:9B-1.4 as FW1 waters. FW1 waters are listed at N.J.A.C. 7:9B-1.15(j). These include selected waters which are to be maintained in their natural state of quality and are located within State Parks, State Forests,

Wildlife Management Areas and other holdings. The rule at N.J.A.C. 7:9B-1.5(d)2i states that the Department shall not approve any activity which, alone or in combination with any other activities, might cause changes, other than toward natural water quality in these nondegradation waters. Because of this policy and how it is implemented, the Department does not believe that the term "manmade wastewater discharges" needs to be defined. These types of discharges could not comply with the requirement that the discharge would only cause changes toward natural water quality.

5. COMMENT: The term "natural conditions" should be defined or the term should be removed from N.J.A.C. 7:9B. Inclusion of "natural condition" waivers in water quality standards regulations creates a host of potential legal and programmatic problems. Natural conditions should not include dams and impoundments that might lead to a stream not attaining its designated use. Human activities, such as development, land use changes, dam flow changes, and water withdrawal, can and have changed base-flow conditions as well as groundwater levels in New Jersey according to the United States Geological Survey (USGS). Attributing human-caused, low-flow conditions to natural conditions is not acceptable. It is impossible or impractical to determine what truly natural conditions in a long-developed State like New Jersey would be. Is the Department going to determine what these waters were like before human settlement? Determining "natural conditions" seems merely an attempt to allow more pollution without coming out and saying, "you can pollute more." (9, 10, 17, 20, 22)

RESPONSE TO COMMENT 5: "Natural flow" and "natural water quality" are defined in the SWQS at N.J.A.C. 7:9B-1.4. Natural flow means the water flow that would exist in a waterway without the addition of flow from artificial origins. Natural water quality means the water quality that would exist in a waterway or a waterbody without the addition of water or waterborne substances from artificial origins. The Department uses the term "natural conditions" in the SWQS to reflect both natural flow and natural water quality. Since the objective of the SWQS is to maintain the natural flow and natural water quality to protect the native biota, the addition of pollutants from a discharge, low flow conditions resulting from

excessive water withdrawals or dams are not natural conditions. The SWQS at N.J.A.C. 7:9B-1.5(c)1 acknowledge that there may be circumstances where the natural water quality or natural flow does not meet the existing criteria at N.J.A.C. 7:9B-1.14. In these instances, the natural water quality replaces the criteria established at N.J.A.C. 7:9B-1.14. Where the Department determines that criteria at N.J.A.C. 7:9B-1.14 should be adjusted for an area larger than a specific site to reflect natural conditions, the Department will amend the criteria to reflect this special condition. An example of this is contained in the amendments the Department is adopting at this time, which incorporate a new pH criteria that reflects natural water quality.

The SWQS also acknowledge that there may be circumstances where the designated uses are not attainable due to natural conditions. This reflects the concept of broadly establishing designated uses with limited or no information on the natural flow and natural water quality. As an example, the Department designated primary contact recreation as a use in all lakes. A lake located within a wildlife management area may have a bacterial quality that exceeds the criteria for primary contact recreation due to the high density of wildlife. In this case, the natural water quality precludes the attainment of the designated use.

The consideration of natural conditions is not a means to allow for more pollution, rather it is an acknowledgement that site-specific factors must be taken into consideration in setting both the designated uses and the criteria to protect the designated uses.

6. COMMENT: The proposed definition of "Shellfish waters" is unduly narrow and results in the possibility of downlisting certain waterbodies without going through the mandatory reclassification process required by the Clean Water Act and the SWQS. Whether shellfish can be harvested for human consumption, however, is not the same as the ability of a waterbody to support shellfish. Furthermore, it appears that certain waters are deemed to be "Prohibited," as defined in N.J.A.C. 7:12, if a sanitary test has not been conducted in a certain period of years. N.J.A.C. 7:12-1.4(a)(5). As such, those waterbodies will not be eligible for classification as Shellfish waters under the SWQS even though they have not been examined for purposes of

determining existing or designated uses. Shellfish have a tremendously important habitat value to estuaries – beyond and distinct from their desirability as a food source and economic engine. For example, some of the Barnegat Bay research indicates that the well-known nutrient problems are creating ecological conditions that contributed to the disappearance of the clams and oysters. This loss has a trophic, cascading effect, creating a vicious cycle because the absence of filter feeders exacerbates the nutrient response problems caused by phytoplankton. Ideally, the Department should be striving for a SWQS standard that recognizes and manages simply for the protection and restoration of shellfish populations, separate from the idea of "shellfishing waters," which implies harvest connections. This might be as "simple" as recognition and classification of appropriate waters as "shellfish waters," denoting the presence or potential presence of shellfish populations.

At minimum, the proposed definition should be modified to reflect that human consumption standards are not controlling-possibly. This could be accomplished by adding the following to the end of the proposed definition: " . . . as well as waterbodies that historically supported shellfish harvesting, but are currently listed as Prohibited, and those waters that currently support, have historically supported, or have the potential to support shellfish populations." A change of this type would encompass existing or designated uses that have become impaired with the passage of time, and which the Department has an affirmative duty to restore. (9)

RESPONSE TO COMMENT 6: The definition of "shellfish waters" at N.J.A.C 7:9B-1.4, does not change the scope or extent of protection afforded these waters. As stated in the summary of the proposal, "The Department is proposing to amend the definition of "shellfish waters" to be consistent with the definition used in the Shellfish Growing Water Classification rules, N.J.A.C. 7:12, and to ensure that the exact locations of these waters are identified."

In accordance with the Shellfish Growing Water Classification rules, N.J.A.C. 7:12, "shellfish waters" include all waters classified as approved, seasonally approved, special

restricted, seasonal special restricted, or prohibited for shellfish harvest. These waters are reevaluated annually, based on sanitary quality, to correctly identify the shellfish harvest status. These classifications are different from the stream classifications identified in the SWQS.

The commenter's concerns relate to two different designated uses - shellfish consumption and aquatic life use. All waters classified by the Department at N.J.A.C. 7:12 including prohibited waters, are defined as "shellfish waters" in both the existing and the readopted SWQS. The SWQS identify shellfish harvesting as one of their designated uses of saline estuary 1 (SE1) and saline coastal (SC) waters which protects the shellfish for human consumption. The aquatic life use is another use designated for these waters that includes "maintenance, migration, and propagation of the natural and established biota." Thus, the aquatic life use designated for SE1 and SC waters protects the shellfish while the "shellfish waters" in the SWQS protect for shellfish harvesting use, which protects the shellfish for human consumption.

SE2 waters are also designated for the aquatic life use, which would protect shellfish, but not for shellfish harvesting for consumption. SE3 waters in the NY-NJ Harbor Estuary are currently designated for maintenance and migration of aquatic life but are not designated for shellfish harvesting for consumption.

7. COMMENT: The definition for "Site-specific criteria" should be revised to clarify that any such criterion must provide protection for existing and designated uses that equal or exceed the existing Statewide criterion. (9)

RESPONSE TO COMMENT 7: The existing Statewide criteria listed at N.J.A.C. 7:9B-1.14 were developed using the USEPA methodology from the *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (Guidelines) (USEPA, 1985) found at http://www.epa.gov/waterscience/criteria/ and are consistent with the USEPA recommended 304(a) aquatic life criteria. According to the

Guidelines, toxicity data representing the following aquatic families must be used to derive an acute or a chronic value:

Freshwater:

1. A species representing the family Salmonidae from the class Osteichthyes;
2. A species representing a commercially or recreationally important warm water habitat, in the class Osteichthyes;
3. A species representing a family from the phylum Chordata;
4 A species representing a planktonic crustacian;
5. A species representing a benthic crustacian;
6. A species representing an insect;
7. A species representing a family from a phylum other than Arthropoda or Chordata; and
8. a species representing a family in any order of insect or any phylum not already represented.

Saltwater:

1. Two species, each representing different families in the phylum Chordata;
2. A species representing a family from a phylum other than Arthropoda or Chordata;
3. A species representing either a Mysidae or Penaeidae family;
4. Three species representing families other than Chordata with possible inclusion of either Mysidae or a Penaeidae whichever was not already used; and
5. A species representing any other family.

Using the available toxicity information, a geometric mean is calculated for each species as the species mean acute value (SMAV). A geometric mean of all the available SMAVs for a genus is calculated as genus mean acute value (GMAV). GMAV for all the available genera are ranked from highest to lowest. A final acute value (FAV) is calculated from the lowest four GMAVs following the derivation outlined in the Guidelines (USEPA, 1985). The final acute criterion or the criterion maximum concentration (CMC) is one-half of the FAV. The criteria

may be further refined if a SMAV from flow-through tests for a commercially or recreationally important species is lower than the calculated FAV. In that case, SMAV is used as the FAV.

Following the same methodology, the Department may develop New Jersey-specific criteria when sufficient toxicity studies are available for species known to inhabit New Jersey waters. Criteria developed using New Jersey species is appropriately protective for New Jersey waters and may be more or less stringent than the statewide criteria depending on the available data.

New Jersey adopted a site-specific copper criteria at N.J.A.C. 7:9B-1.14(g) for the waters of the New York-New Jersey Harbor based on harbor-specific species (See 28 N.J.R. 3782(b), August 5, 1996). These criteria were determined by the USEPA to be criteria that realistically represent the ecology and the resident aquatic community of the harbor complex and were approved in 1996.

Site-specific criteria are developed to better protect the resident biological community by selecting toxicity studies for species representing the waterbody. As explained in the proposal summary at 41 N.J.R. 1566, the site-specific criteria are alternative criteria established in place of statewide criteria for a specific waterbody(ies) using site-specific species. A site-specific criterion may be more or less stringent than the statewide criteria based on the availability of toxicity data of resident species. Therefore, it is not appropriate to require that site-specific criteria be equal or more stringent than the existing statewide criterion.

8. COMMENT: The addition of the terms “Site-specific criteria” and “Watershed-specific translators” is well-conceived and provides for better integration with Total Maximum Daily Load (TMDL) efforts. However, the use of the word “translator” within this context will be confused with metals translators that are contained within the SWQS. The term “watershed-specific nutrient criteria” would be a better choice. (2)

RESPONSE TO COMMENT 8: The Department acknowledges the commenter's support. The metal translators are now recodified at N.J.A.C. 7:14A-13.6(c) and will not be part of N.J.A.C. 7:9B. Therefore, there should not be any confusion in using the term "watershed-specific translators".

9. COMMENT: The proposed definition of "Watershed-specific translators" is problematic because it inappropriately limits the creation of translators to the TMDL process and only for phosphorus. (9)

RESPONSE TO COMMENT 9: "Watershed-specific translators" are numeric translators established to demonstrate compliance with the narrative nutrient criteria. The commenter correctly notes that watershed-specific translators may only be established as part of a TMDL evaluation pursuant to N.J.A.C. 7:15-6.3. Through the development of a TMDL, the Department expects to generate additional information and tools, such as water quality models that can better predict and correlate the biological responses changes in nutrient concentrations. Watershed-specific translators may be an alternative numeric criterion for phosphorus to replace the existing criteria at N.J.A.C. 7:9B-1.14(d)5, an appropriate averaging period, a numeric criteria for a new parameter such as Chlorophyll *a*, or a combination of parameters (such as, Chlorophyll *a* and dissolved oxygen).

WASTEWATER REUSE - N.J.A.C. 7:9B-1.5(a)8

10. COMMENT: The commenter supports the concept of reclaimed water for beneficial reuse and has long advocated that the Department should consider the recycling of treated wastewater for uses such as irrigation, commercial and industrial applications to preserve the water supply. This is a particularly important approach for towns within the Department-designated "critical water supply areas." (19)

RESPONSE TO COMMENT 10: The Department acknowledges the commenter's support for wastewater reuse and agrees that beneficial reuse can preserve potable water supplies by using

treated wastewater rather than drinking water for irrigation, commercial, and industrial applications.

11. COMMENT: The Department must be more proactive and protective in implementing the beneficial reuse of water from reclaimed water. Simply "encouraging" reuse at N.J.A.C. 7:9B-1.5(a)8 in these amendments is not adequate and will not result in increased reuse without incentives or regulatory requirements. Beneficial reuse should be required if the Department is sincere about being proactive on this issue. (9)

12. COMMENT: While the Department may in fact desire to encourage wastewater reuse, this policy has no apparent relevance to the SWQS. Rather, it belongs in the Water Quality Management Planning (WQMP) rules and the NJPDES rules. (2)

RESPONSE TO COMMENTS 11 AND 12: The Department has determined that it is appropriate to establish a policy in the Surface Water Quality Standards to reduce the export of freshwaters in order to support meeting future water supply demands and to protect natural resources. The Surface Water Quality Standards include a number of general policies that are implemented by other Department programs (such as NJPDES, and Stormwater Management Program). The addition of a policy encouraging wastewater reuse is consistent with this approach.

The Department has adopted amendments to the WQMP rules, N.J.A.C. 7:15, in 2008 that specifically require (at N.J.A.C. 7:15-5.25(d)) that a proposed new or expanded domestic or industrial treatment works with discharge to surface water evaluate, as part of an antidegradation analysis, the feasibility of reclaiming wastewater for beneficial reuse, in accordance with the Department's "*Technical Manual for Reclaimed Water for Beneficial Reuse*," as amended or supplemented (http://www.nj.gov/dep/dwq/). The wastewater management plan and/or amendment authorizing the new or expanding discharge will require the facility to implement reclaimed water for beneficial reuse (RWBR) to the extent determined to be feasible. The

Department, through its existing NJPDES permitting authority (N.J.A.C. 7:14A-2.15), will issue a NJPDES permit which authorizes the use and any restrictions associated with the RWBR program.

In addition, the Department's Water Supply Allocation Permits rules at N.J.A.C. 7.19-2.2(g), require applicants for diversions for non-potable purposes to analyze the availability of lower quality water rather than using potable water.

The Department has increasingly advocated RWBR as a drought mitigation strategy and as a long-term water supply management tool, particularly for highly consumptive, non-potable purposes. To that end, RWBR has become an integral component of the Department's goal of matching water quality with the intended purpose of the use, thus reserving the highest quality sources for drinking water. During the 2002 drought event, the Department approved more than 70 temporary reuse authorizations under administrative orders issued during the water emergency. This allowed utilities and municipalities to reuse water for activities such as street sweeping, sanitary sewer jetting, and roadside corridor maintenance. Reuse is gaining momentum as approximately 1.75 billion gallons were utilized in 2005, 2.6 billion gallons were utilized on 2007, and 2.99 billion gallons were utilized on 2008. In September 2009, the Cape May County Municipal Utilities Authority's RWBR demonstration project began diverting up to 300,000 gallons per day of secondary effluent to a new tertiary (denitrifying) treatment train that meets requirements for Unrestricted Public Access quality RWBR. The County expects to use RWBR for washdown water for animal cages and to flush public toilets at the County Zoo, to irrigate the County Complex and County Recreational Complex, for miscellaneous uses at the County Animal Shelter and County College, and as scrubber water for the County Composting facility's odor control system. This project will save drinking water and reduce demand on the aquifers underlying Cape May County.

13. COMMENT: The rule proposal requires that a proposed new or expanded domestic treatment works evaluate the feasibility of reclaiming wastewater for beneficial reuse as part of

an anti-degradation analysis to the extent feasible. The preamble to the rule indicates that amendments to N.J.A.C. 7:15, in 2008, specifically require such analyses. Moreover, the Water Quality Management Planning rules (N.J.A.C. 7:15-5.25(d)3), present a hierarchy for wastewater treatment and disposal alternatives that must be evaluated as part of the antidegradation analysis. The rule proposal further specifies its intent to reduce the export of freshwater out of basin in support of meeting water supply needs and natural resource protection. Thus, it is apparent that the intent is for the beneficial reuse to recharge groundwater or serve as potable water.

This feasibility evaluation may result in significant treatment upgrade requirements for municipal treatment facilities. Pursuant to N.J.A.C. 7:15, discharges to groundwater must maintain existing groundwater quality, estimated at 2 mg nitrate-nitrogen/L, and achieve an effluent limit of 6 mg/L nitrate to protect the groundwater quality criterion for nitrate (10 mg/L). Reclaimed Water for Beneficial Reuse, when land applied, must meet a daily maximum of 10 mg/L (nitrate plus ammonia). In contrast, municipal wastewaters typically have total nitrogen (nitrate plus ammonia) levels of 20 – 25 mg/L. Most facilities providing secondary and tertiary (nitrification) treatment are not equipped to reduce total nitrogen (nitrate). Analysis of the feasibility of beneficial reuse, as required by the rule proposal, would require extensive facility upgrades to provide biological nutrient removal (BNR) that is not economically feasible relative to the current cost of water, $4/1000 gallons, referenced in the Technical Manual. The Department should clarify that Total Nitrogen (TN) removal may not be required for reuse where analyses otherwise confirm that groundwater requirements will be met at the point of compliance. (4)

RESPONSE TO COMMENT 13: The amendments to the WQMP rules, N.J.A.C. 7:15, adopted in 2008 specifically require that a proposed new or expanded domestic or industrial treatment works with discharge to surface water evaluate the feasibility of reclaiming wastewater for beneficial reuse as part of an antidegradation analysis consistent with the Surface Water Quality Standards (see N.J.A.C. 7:15-5.25). This analysis identifies whether wastewater can replace potable water used for an existing non-potable or consumptive use (See Response to

Comment 39). There is no intent to utilize the RWBR for potable purposes or ground water recharge at this time.

As explained in the Department's "*Technical Manual for Reclaimed Water for Beneficial Reuse*," as amended or supplemented (see http://www.nj.gov/dep/dwq/), (Technical Manual) the level of wastewater treatment required depends upon the nature of the project and the potential for public exposure. Advanced wastewater treatment is not required unless the project is likely to expose the public to treated wastewater, such as spray irrigation on golf courses and recreational fields.

The Department has established an effluent standard of 10.0 mg/L for total nitrogen for all types of RWBR except those involving industrial operations such as cooling water and washing operations. The total nitrogen value of 10.0 mg/L complies with the Ground Water Quality Standards N.J.A.C 7:9C, and Safe Drinking Water Act Regulations (SDWA), N.J.A.C 7:10. The Department may establish a less stringent total nitrogen limit as described in the Technical Manual. The facility is required to provide additional site-specific information as part of the engineering report to ensure that the less stringent total nitrogen effluent limit is protective of the environment.

14. COMMENT: The Department's policy is that advanced treatment is required and the increase in flow must be accounted for. However, no credit is provided where beneficial reuse is utilized for wastewater discharge. The Department should provide credit in discharge flow and explain how it is encouraging beneficial reuse. (19)

RESPONSE TO COMMENT 14: As indicated in Response to Comment 13, advanced treatment is not required. However, each facility implementing RWBR must account for all incoming wastewater flow and receive a NJPDES permit that authorizes the facility to discharge to surface or ground water to address situations such as seasonal irrigation or times when the facility closes or otherwise reduces its need for RWBR. It is unclear what type of credit the

commenter is seeking. The Department does provide a "credit" in discharge flow to those new and expanding facilities that agree to implement RWBR to offset the need to discharge additional pollutants. However, N.J.A.C. 7:14A-2.15(a) states that "the implementation of a RWBR program at a facility will not be a basis for the Department to allow that facility to expand its sewer service area or capacity to accept additional wastewater."

15. COMMENT: The proposed policy at N.J.A.C. 7:9B-1.5(a)8 should be revised to include a reference to "wastewater management needs". (19)

RESPONSE TO COMMENT 15: The Department does not agree that "wastewater management needs" should be included in this policy. While the use of reclaimed water for beneficial reuse may allow an expansion of an existing permitted discharge, the goal is to help preserve the highest quality water for drinking water supplies and to protect natural resources.

16. COMMENT: Successful implementation of RWBR policy will require adequate data on the effluent to be reused, include robust testing requirements for metals, nutrients and toxic chemicals (including pharmaceuticals). This is especially true for those chemicals that have a tendency to bioaccumulate, biomagnify, or those that do not follow a traditional dose/response curve, for example, endocrine disrupters that are more harmful at extremely low levels and which often escape detection due the detection limits or simply the lack of testing protocols. Further, limitations or conditions will be needed for several important contaminants, and a public notice and comment period should be provided on reuse projects. (9)

17. COMMENT: Water reuse is not beneficial and there are several problems in the proposed standards. Particularly, the standards do not look at the impact that the buildup of nutrients, pharmacologicals, or household and industrial chemicals, especially from pump and treat systems, will have on the aquifer. These chemicals will end up in sewer plant discharges and, because of reuse, will be put back into the environment. Because there is a connection between ground water and surface water, there will be an impact to surface water as well. (18)

RESPONSE TO COMMENTS 16 AND 17: The Department authorizes all applications to beneficially reuse wastewater through the New Jersey Pollutant Discharge Elimination System program and individual permits. All NJPDES permits are subject to public notice and comment. In order to provide guidance to the dischargers with the beneficial reuse, the Department has published a "*Technical Manual for Reclaimed Water for Beneficial Reuse*" (http://www.nj.gov/dep/dwq/) which includes the application requirements, effluent limitations and operational requirements.

Concerns were raised that RWBR would impact water quality because of the presence of pharmaceuticals, industrial and household chemicals and endocrine disrupters in wastewater. These newly recognized contaminants, known as "emerging contaminants", are produced industrially, yet are dispersed to the environment from domestic, commercial, and industrial uses. Additionally, they are present at very low levels and, rather than using USEPA approved analytical methods, which is used for other pollutants, they are typically analyzed using research methods. In addition, there is a lack of information establishing the thresholds for adverse effects for each specific contaminant. This information is necessary to develop water quality standards that can be used by the Department to establish water quality-based effluent limitations.

USEPA has determined that a new methodology is needed to develop aquatic life criteria to address the effects of these contaminants which alter the normal function of hormones. In 2008, USEPA published *Aquatic Life Criteria for Contaminants of Emerging Concern: General Challenges and Recommendations* describing technical issues and recommendations for developing aquatic life criteria. USEPA's Office of Water asked the Science Advisory Board (SAB) for advice on the scientific merit of this document. The SAB has provided comments to USEPA. USEPA plans to issue a technical support document on deriving aquatic life criteria for the health effects currently not addressed based on the SAB comments and recommendations. This document will be subject to public comment. Once USEPA finalizes the guidance for the

development of aquatic life criteria, the Department should have the tools necessary to protect the aquatic community from undesirable effects from these emerging contaminants.

Until such time as a methodology is finalized to develop criteria that protect aquatic life and human health from emerging contaminants, the Department is taking other measures, such as pollution prevention and pollution minimization measures, to prevent any adverse effects that these emerging contaminants may bring about. For example, the Department has initiated actions to reduce the levels of PCBs and mercury (see Response to Comments 120 through 122), substances known to bioaccumulate in fish tissues, through the NJPDES program. These efforts are expected to improve all wastewater, not just wastewater considered for beneficial reuse. The Department has also established effluent standards for total nitrogen as explained in Response to Comment 13 above. The Department is also involved in several research projects to document the occurrence and concentration of synthetic organic contaminants, such as pharmaceuticals in raw and finished water supplies, to develop analytical methods and to evaluate the effectiveness of treatment for these compounds. The Department is also participating in discussions at the national level to determine the appropriate methods to sample and analyze the proper way to establish potable water and wastewater standards, as well as the appropriate methods to treat wastewater and potable water for these contaminants. USEPA has developed a website to provide the public with information on improving science, improving public understanding, identifying partnership and stewardship opportunities, and taking regulatory action when appropriate. For more information, visit http://www.epa.gov/waterscience/ppcp.

The Department has determined that, even with the undetermined impact associated with emerging contaminants, it is still appropriate to establish a policy in the Surface Water Quality Standards to reduce the export of freshwaters, to support meeting future water supply demands and to protect natural resources.

18. COMMENT: Water reuse will lead to more overdevelopment and more impervious cover, in turn allowing less ground water into aquifers and increasing pollutants in our streams. Due to water reuse in Las Vegas, the aquifer is 20 mg/L nitrogen and can never be used. Reusing water

in areas with potable wells will lead to accumulation of nutrients and other harmful chemicals that could severely impact water quality. Once an aquifer is polluted, it can never be fixed, so we must take precautions to protect aquifers. The water reuse policy should be withdrawn and revised in a way that will be more protective to the environment, public health, and aquatic life. (18)

RESPONSE TO COMMENT 18: The intent for implementing water reuse is to conserve the State's water supply and to ensure its availability for population growth and during times of drought. N.J.A.C. 7:14A-2.15(a) provides that, "the implementation of a RWBR program at a facility will not be a basis for the Department to allow that facility to expand its sewer service area or capacity to accept additional wastewater." Therefore, implementing a RWBR program at a facility is not a basis for authorizing a facility to expand its sewer service area or increase capacity to accept additional wastewater' thereby preventing inappropriate development and growth.

19. COMMENT: The Department should ensure that beneficial reuse does not result in the lowering of water quality and that that the SWQS are met in nearby waterways that are in close proximity to where beneficial reuse occurs. (9)

RESPONSE TO COMMENT 19: Beneficial reuse applications are authorized through the NJPDES permit program. The permits include operational restrictions to ensure that water quality standards are met and that there is not an unauthorized discharge to surface waters which could lower water quality or cause exceedences of water quality standards in nearby waterways.

20. COMMENT: It is unlikely that RWBR would be feasible for most non-contact cooling water applications. In that regard, the quantity of water required for non-contact cooling is likely to substantially exceed the quantity that could be often delivered to remote power plant sites through pipelines (and the latter would, of course, have to be separate from potable water supply). Aside from the absence of infrastructure to deliver reclaimed wastewater (and the

considerable cost to construct and maintain such infrastructure), non-contact cooling water must be available on a continuous basis when an electric power generator is operating, and it is unlikely that reclaimed water would meet that requirement. In short, RWBR will generally not be feasible for once-through non-contact cooling water uses. (5)

RESPONSE TO COMMENT 20: The Department does not agree that the RWBR is not feasible for non-contact cooling water applications. There may be significant costs associated with implementing a RWBR program where the treatment plant and the power plant are a considerable distance from each other, thus making the project infeasible. However, in situations where RWBR is feasible, implementation can provide substantial benefits by reducing the use of treated potable water for non-contact cooling water (see Response to Comments 11 and 12). There are two power plants in New Jersey that are currently utilizing RWBR as non-contact cooling water and another power plant in the construction phase has also received approval.

METHODS DOCUMENT - N.J.A.C. 7:9B-1.5(a)9

21. COMMENT: Ultimately, the water quality standards are the basis for determining whether a waterbody is impaired by a pollutant and therefore, included on the State's section 303(d) list (sublist 5). The Methods Document is not a substitute for the water quality standards and the language of the proposal should make this clear. (9)

22. COMMENT: The use of the Integrated Water Quality Monitoring and Assessment Methods Document is required to identify whether waterbodies meet water quality standards. The new policy at N.J.A.C. 7:9B-1.5(a)9 will allow the Methods Document to be amended in the future, which will essentially amend the regulations without going through appropriate public notification and adoption procedures. (2)

RESPONSE TO COMMENTS 21 AND 22: Since 2001, USEPA has recommended that states integrate their Section 305(b) reporting requirements with their Section 303(d) reporting requirements by generating an Integrated Water Quality Monitoring and Assessment Report

(Integrated Report). The biennial Statewide Water Quality Inventory Report (the 305(b) Report) includes an evaluation of the overall water quality and support of designated uses, as well as an evaluation of strategies to maintain and improve water quality. The biennial List of Water Quality Limited Waters, or "303(d) List," identifies waters that are not attaining designated uses because they do not meet surface water quality standards despite the implementation of technology-based effluent limits.

New Jersey has developed the Integrated Water Quality Monitoring and Assessment Methods (Methods Document) as recommended by USEPA. The Methods Document provides an objective and scientifically sound assessment methodology, including a description of the data the Department will use to assess attainment of the designated uses; the quality assurance aspects of the data; a detailed description of the methods used to evaluate designated use attainment; and the rationale for identifying a waterbody as impaired.

The Methods Document is revised, as needed, public comment is sought, as required pursuant to N.J.A.C. 7:15-6.2, prior to developing the Draft List of Water Quality Limited Waters. This provides the public and the USEPA with an opportunity to evaluate the methods used to collect, analyze, and interpret data before the Department proposes the List of Water Quality Limited Waters. The Department reviews the comments received and revises the Methods Document as appropriate before proposing the Draft List of Water Quality Limited Waters as an amendment to the Statewide Water Quality Management Plan pursuant to N.J.A.C. 7:15-6.2. The Department will publish a summary of public comments on the draft Methods Document along with agency responses in the notice of the proposed amendment to the Statewide Water Quality Management Plan for the List of Water Quality Limited Waters. The final Methods Document and the final List of Water Quality Limited Waters are published as appendices to the final Integrated Report at http://www.state.nj.us/dep/wms/bwqsa/generalinfo.htm and adopted as an amendment to the Statewide Water Quality Management Plan.

The Methods Document does not revise water quality standards specified in N.J.A.C. 7:9B, but does provide information to understand how assessment decisions are made. To clarify that the Methods Document is not used to develop standards, the Department is revising N.J.A.C. 7:9B-1.5(c)9 on adoption to read as follows: The Department uses the Integrated Water Quality Monitoring and Assessment Methods developed pursuant to N.J.A.C. 7:15-6.2 to evaluate water quality data and identify waters where water quality does not meet the Surface Water Quality Standards at N.J.A.C. 7:9B as required by Section 303(d) and 305(b) of the Federal Clean Water Act.

N.J.A.C. 7:9B-1.5(c)6

23. COMMENT: It is not appropriate to set all stream human health criteria in the SWQS equal to the drinking water criteria. Furthermore, even when such an approach is appropriate, it is only acceptable if the Safe Drinking Water Act Regulations (SDWA) rule proposal not only identifies the Maximum Contaminant Level (MCL) changes that will result in updates to the SWQS, but also proposes what those new SWQS criteria would be. This also holds true for MCL changes that may be incorporated into the Ground Water Quality Standards (GWQS) criteria through a notice of administrative change. The actual changes to the SWQS or GWQS criteria that would result from the new MCL should be included in the SDWA rule proposal. Furthermore, an additional notice under the heading of SWQS should also be published, indicating that a proposed change to the SDWA rules will affect criteria in the SWQS. (2)

RESPONSE TO COMMENT 23: Human health water quality criteria are developed to protect water quality for designated uses, such as public potable water supply and consumption of fish. As indicated at 41 N.J.R. 1567, the Department will revise an existing human health criterion at N.J.A.C. 7:9B-1.14 when a new or revised MCL in the SDWA at N.J.A.C. 7:10 is promulgated for that parameter. This approach ensures that the Department's water-related standards are based upon the same risk assessment. The basis and background for the risk assessment used to establish or revise the MCL is part of the proposal to amend SDWA rules. The Department will publish a notice in the same issue of the New Jersey Register in which the SDWA rule proposal

appears indicating that the SDWA proposal will result in changes to the SWQS, if adopted. This additional notice will ensure that those impacted by the potential change to the SWQS will have an opportunity to comment on the SDWA rule proposal. Once the Department adopts the SDWA rule with the new MCL, the Department will publish a separate notice in the New Jersey Register to indicate that the revised SWQS criteria have been modified based upon the toxicity factors used to establish the MCL.

ANTIDEGRADATION – N.J.A.C. 7:9B-1.5(d)

24. COMMENT: The inclusion of Threatened or Endangered Species as an existing use which is subject to antidegradation and which must be maintained is supported. (13)

25. COMMENT: The Department is applauded for integrating protections for threatened and endangered species into protected existing uses. However, the language should be strengthened from "maintenance" to an increase in numbers of these species that are declining in number. When listed species are of concern, the Department should aim higher than mere maintenance and attempt measures intended to restore populations to sustainable levels. If additional protections are needed to help increase numbers to sustainable populations, language in the SWQS should reflect that. (10, 17, 20, 22)

26. COMMENT: The express recognition that the presence of threatened and endangered species is an existing use that must be protected is applauded. This is a step in the right direction, but in fact it does not go far enough. The limitation to "presence" is unduly narrow and completely ignores the fact that some species are only intermittent or ephemeral users of waterbodies, whether it is in connection with breeding, feeding, rearing young, or other activities. This provision should be expanded to all wildlife, not just those that are threatened with or in danger of extinction. Threatened or endangered status is not, nor should it be, required for wildlife to receive protection as either a designated or existing use. While the protection of our most imperiled species in important, it is myopic and does not go far enough to carry out the purposes of the Clean Water Act (CWA). (9)

RESPONSE TO COMMENTS 24 THROUGH 26: The Department acknowledges the commenters' support. The new policy at N.J.A.C. 7:9B-1.5(d)2 satisfies one of the findings of United States Fish and Wildlife Service' (USFWS) Biological Opinion Document *(Biological opinion on the effects of the U.S. Environmental Protection Agency's approval of the state of New Jersey's surface water quality standards on the bald eagle, peregrine falcon, and dwarf wedgemussel.* U.S. Department of the Interior, Fish & Wildlife Service, New Jersey Field Office, Pleasantville, New Jersey. 1996). The Biological Opinion Document specifically required that the New Jersey antidegradation policy be amended to recognize threatened and endangered species as an "existing use" that must be protected. A copy of this document can be obtained from the Department's website at http://www.state.nj.us/dep/wms/bwqsa/. Non-threatened and endangered species are also protected as an existing use in accordance with the N.J.A.C. 7:9B-1.5(d)1 which indicates existing uses shall be maintained and protected. This policy is applicable to all waters and all existing uses.

The Department agrees with the commenter who questioned the qualifier "as appropriate" for propagation at N.J.A.C. 7:9B-1.5(d)2. The term "as appropriate" was intended to reflect that threatened and endangered species may be present in an area, but may propagate only in areas with particular conditions. The intention was to express that, while propagation may not be an issue in all areas containing threatened and endangered species, if it is present in the area, it is a use that is required to be maintained. However, the Department agrees that this qualifier is unnecessary and is deleting the words "as appropriate" from N.J.A.C. 7:9B-1.5(d)2, upon adoption.

Regarding the commenter's suggestion on strengthening the language from "maintenance" to an increase in numbers of these species that are declining in number, the Department's duty under the Clean Water Act is to establish and implement water quality standards. The Department has other programs, such as the Division of Fish and Wildlife's Land Owner Incentive Program (LIP), which work to increase the population of endangered species.

See http://www.nj.gov/dep/fgw/ensp/lip_prog.htm. The LIP is one partnership that can provide private landowners interested in conserving threatened and endangered species on their property with financial and technical assistance. It is the goal of LIP to work with private landowners to protect important habitats.

27. COMMENT: The State must identify waterbodies for which the existing Water Quality-Based Effluent Limits (WQBELs) are not stringent enough to implement the standard that ensures the propagation of fish and wildlife. (9)

28. COMMENT: The State is obligated to identify those waterbodies where thermal controls on discharges "are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife." A great deal of time and energy went into the determination document that established criteria that would be protective of wildlife. (9)

RESPONSE TO COMMENTS 27 AND 28: Section 303(d) of the Federal Clean Water Act (33 U.S.C. 1313(d)), requires states to produce a list of waters that are not meeting surface water quality standards despite the implementation of technology-based effluent limits and, thus, require the development of total maximum daily loads (TMDLs). As indicated above in Response to Comments 21 and 22, the Department's Integrated Water Quality Monitoring and Assessment Methods Document is used to evaluate and identify waters where water quality does not support the designated uses. The Department must identify the pollutant causing non-attainment of the designated use. Waters and the pollutants causing non-attainment are listed on the "List of Water Quality Limited Waters" also known as the "303(d) List". The 303(d) List is part of the State's Integrated Water Quality Monitoring and Assessment Report (Integrated Report). New Jersey's 2008 Integrated Report is available at www.state.nj.us/dep/wms. The Department identified 595 waterbodies on its 2008 Integrated List which do no support the aquatic life use. Temperature was identified as the cause of non-attainment in 69 of these waterbodies. Where temperature causes non-attainment of the aquatic life use, the Department

will determine whether the temperature exceedances are due to natural conditions, regulated point sources, stormwater, habitat/canopy changes, or other sources.

29. COMMENT: The Department proposes a policy to state that the "maintenance, migration, and, as appropriate, propagation of threatened or endangered species" is an existing use that must be maintained. It is unclear when propagation would not be appropriate for a threatened or endangered species, and therefore what the value of the "as appropriate" qualifier. However, N.J.A.C. 7:9B-1.12 already lists the uses for various surface water classifications. These include "maintenance, migration, and propagation of the natural and established biota" and "maintenance of wildlife." Threatened and endangered species are merely "biota" and "wildlife" that happen to be rare in population. Criteria to protect biota and wildlife would include any of those that happen to be designated as threatened or endangered. Adding a policy that specifically lists threatened or endangered species as a use to be protected has the potential to add another burden of proof to anti-degradation analyses, and implies that the criteria established by the Department may not be protective of threatened or endangered species. (2)

30. COMMENT: The protection of wildlife is mandated because it is an existing use, rather than a designated use. In keeping with this goal of protecting existing uses, one fundamental purpose of the antidegradation policy is to require a public, scientifically-based demonstration of compliance with this requirement. (9)

RESPONSE TO COMMENTS 29 AND 30: The designated uses specified at N.J.A.C. 7:9B-1.12 for FW1, PL, FW2, SE1 and SC include maintenance, migration and propagation of the natural and established biota. Designated uses specify the goal for the use, whereas, the new policy at N.J.A.C. 7:9B-1.5(d)2 is intended to protect threatened and endangered species as an existing use. The Department does not believe that establishing threatened and endangered species as an existing use imposes an additional burden when a new or expanded discharge is proposed. The water quality criteria are designed to protect existing and designated uses. However, other protective measures are established to restrict unacceptable impacts on waters

inhabited by threatened and endangered species, such as upgrading the waters to Category One as well as prohibiting mixing zones at N.J.A.C. 7:9B-1.5(h)5iv. As the analysis done through the Water Quality Management Planning process and the NJPDES permitting process will assure that the increased discharge from a new or expanded facility does not result in measurable change in water quality and that the existing use by the identified Threatened and Endangered species will be maintained.

31. COMMENT: The inclusion of threatened or endangered species as an existing use is of concern because the presence of these species would require buffers. However, the Department does not provide the general public information on the location of the in-stream threatened or endangered species habitat. For example, if there are mussels in the waterbody, it is unclear why stream segments that are downstream from the habitat as well as areas and land use downstream of the habitat need to be protected by 300-foot buffers and the Category One designation, particularly if the mussels would not move downstream. The Department should clarify the scientific assurance that the general public would have on the location and the need for buffers. (19)

RESPONSE TO COMMENT 31: The Department documentation of the location data (documented occurrences) for all tracked species, including aquatic species such as freshwater mussels, is part of the Natural Heritage Database. These documented occurrences are the foundation for the Landscape Project maps. In May 2008, the Department updated the Landscape Project (Version 3.0 Highlands). This new version includes freshwater mussels, but is limited to the Highlands Region. The Department is in the process of updating the Landscape Project for the rest of the State.

Based on the location of the threatened or endangered species, the SWQS describe the boundaries of the stream segment that is designated as Category One. 300-foot buffers are not imposed on the downstream segments from the habitat as asserted by the commenter. 300-foot buffers are imposed on stream segments adjacent to all Category One waters and their upstream

tributaries within the same sub-watershed or HUC 14. These buffers are established under the Stormwater Management rules (N.J.A.C. 7:8) and the Flood Hazard Area Control Act rules (N.J.A.C. 7:13) and are implemented as best management practices (BMPs) to meet the Category One antidegradation standard.

32. COMMENT: The antidegradation policy is at the core of any effort by the states and the Federal government to restore, protect, and maintain water quality. The proposed rule continues to apparently authorize certain discharges to escape antidegradation review. The Department must require an antidegradation analysis before any action can be taken that adversely affects water quality, from new and existing discharges, to approval of stormwater plans that may allow increased nonpoint sources of pollutants. (9)

RESPONSE TO COMMENT 32: The requirement to conduct an antidegradation analysis is based on an application to increase the quantity of pollutants discharged by a new or expanded facility regulated by the NJPDES program. The issuance of a NJPDES permit renewal for an existing facility cannot authorize any additional pollutant loading and therefore, does not trigger an antidegradation analysis. (see Response to Comment 39). Nonpoint source discharges are not amenable to an antidegradation analysis. Under the Stormwater Management Rules at N.J.A.C. 7:8, nonpoint sources of pollution are required to implement best management practices (BMP). Additional measures are necessary to protect the State's waterbodies designated as Category One. Particularly, Special Water Resource Protection Areas (buffers) are required as a new BMP to protect water quality in Category One waters. The buffers would be imposed adjacent to all Category One waters and upstream tributaries of Category One waters within the same sub-watershed.

33. COMMENT: The proposal does not protect or restore water quality for waters of the State, and, as such, violates the terms of the Clean Water Act, 33 U.S.C. § 1251-1387 (CWA), and the New Jersey Water Pollution Control Act, N.J.S.A. § 58:10A-1 *et seq.* (Water Pollution Control Act). The proposed amendments not only fail to protect water quality, as required by the Federal

antidegradation policy, but are also at odds with another fundamental goal of the CWA and the Water Pollution Control Act. Congress enacted the Clean Water Act to not only maintain existing water quality, but to *restore* water quality. Similarly, the Water Pollution Control Act also requires the Department to restore and maintain waters of the State. This failure on the part of the Department to recognize these fundamental goals of the CWA infects many different sections of the proposal, not the least of which is the antidegradation section. (9)

RESPONSE TO COMMENT 33: The Clean Water Act has many tools to restore, protect and enhance water quality. The SWQS include antidegradation policies to protect all high quality waters, even those not designated as Category One, from a lowering of water quality. However, while no lowering in water quality can be authorized to a Category One waterbody, some lowering may be authorized in a Category Two waterbody to accommodate necessary development.

In compliance with Section 303 of the CWA, the Department is responsible for monitoring and assessing compliance with water quality standards. Waters which do not meet existing water quality criteria are impaired and listed on the State's List of Impaired Waters (303(d) List). These assessment results are presented in the Integrated Report.

The antidegradation policies are designed to protect waterbodies from degradation as a result of new and/or expanded discharges. Category One designation is not an appropriate tool to restore water quality where there are impairments. Waterbodies listed as impaired are to be restored through the development of Total Maximum Daily Loads (TMDL). Through the TMDL process, the Department identifies the sources of the pollutants and reductions necessary to achieve the water quality criteria. This process involves both point sources and nonpoint sources. The SWQS and the amendments that are being adopted at this time are fully in compliance with the Federal and State laws. In addition, these rules are subject to USEPA review and approval under the CWA; the rules being readopted reflect provisions, including the antidegradation policy, that have received that review and approval.

34. COMMENT: The antidegradation policy described in the proposed rule provides that the Department "shall not approve any activity which, alone or in combination with any other activities, might cause changes, other than toward natural water quality, in the existing surface water quality characteristics". This language should not supersede the provisions for regulatory mixing zones which specifically provide that water quality criteria may be exceeded within an approved mixing zone. (5)

RESPONSE TO COMMENT 34: As indicated by the commenter, the antidegradation policy at N.J.A.C. 7:9B-1.5(d)2i, for nondegradation waters classified as FW1 waters, provides that the Department shall not approve any activity which, alone or in combination with any other activities, might cause changes, other than toward natural water quality, in the existing surface water quality characteristics. In addition, the definition for FW1 waters at N.J.A.C. 7:9B-1.4 indicates that these waters are not subjected to any man-made wastewater discharges or increases in runoff from anthropogenic activities. Therefore, no discharges and no regulatory mixing zones are allowed in FW1 waters.

35. COMMENT: How is "irreversibility" measured? Over what time period, and how long would a change be allowed to persist before it is considered irreversible? An exception should be expressly made, at the very least for Outstanding National Resource Waters (ONRW) (including FW1 and PL waters) and also for Category One waters, since the types of changes to which the section refers would arguably be measurable or calculable and possibly predictable. The lowering of water quality can only be accomplished as long as existing and designated uses are maintained. Even then, it can only be accomplished for certain waters, as ONRW/nondegradation waters, by their very nature, cannot be degraded. (9)

RESPONSE TO COMMENT 35: The overall antidegradation policy is expressed at adopted N.J.A.C. 7:9B-1.5(d)1. The Department does not need to evaluate whether a new or expanded discharge causes irreversible changes in water quality because the specific policies applicable to

Category One, Category Two, nondegradation and Pinelands waters establish the allowable changes in water quality, where any change is allowed. For example, the policy for Category One waters is "no measureable change" in water quality. If the proposed change will lower water quality, it cannot be approved even if the change in water quality could be reversible. In Category Two waters, the Department can authorize a lowering of water quality, but must ensure that the water quality criteria are met and designated uses maintained. These provisions of the antidegradation policy preclude irreversible changes. However, N.J.A.C. 7:9B-1.8 and 1.9 establish provisions that allow the Department to authorize some degradation in water quality provided that the existing uses are protected. The Department must reevaluate these modified effluent limits each time a NJPDES permit is issued.

36. COMMENT: The proposed amendments to N.J.A.C 7:9B and N.J.A.C. 7:14A do not address the transfer of raw water from one waterway or waterbody to another waterbody. The Department readopted the same language contained in N.J.A.C. 7:9B-1.5(d)(8) in a re-codified section of the Statement of Policy (N.J.A.C. 7:9B-1.5(d)(1)vi). Does the Department currently treat such transfers as tributaries to the waterway or waterbody receiving the transfer? Permittees discharging to the transferred waterway/waterbody may be required to increase treatment to address water quality concerns in the receiving waters. The Department should replace "tributary" with "discharge, requiring a NJPDES permit," at N.J.A.C. 7:9B-1.5(d)8.(4)

37. COMMENT: Why is the term "raw water" used in N.J.A.C. 7:9B-1.5(d)1vi? Is the purpose behind this provision to avoid and evade NJPDES requirements for interbasin transfers? It is scientifically unsupported, in any way, to *de facto* announce that the target and receiving waterbodies bear a tributary/mainstem relationship to one another without any other information to support that decision or decree. What if the transfer results in the lowering of water quality? Is the Department making a policy finding that the public purpose reasons associated with water transfer outweigh water quality concerns? Where is the support for this finding? What did the Department consider in making this finding? (9)

RESPONSE TO COMMENTS 36 AND 37: It would not be appropriate to make the suggested change to modify N.J.A.C. 7:9B-1.5(d)8 (new N.J.A.C. 7:9B-1.5(d)1vi) to replace "tributary" with "discharge, requiring a NJPDES permit". The Department is authorized by USEPA to implement the National Pollutant Discharge Elimination System (NPDES) program in New Jersey. USEPA's NPDES regulations at 40 C.F.R. 122.3(i) exclude water transfers from NPDES permits. This is an area of active litigation in Federal Courts. The Department is monitoring that litigation closely. Based on the outcome of the litigation and any resulting changes to USEPA regulations, the Department will make a determination about the need for any future changes to the NJPDES program.

The New Jersey Water Supply Master Plan identifies several major surface water systems throughout the State. The waters purveyors that operate these systems may have one or more of the following: a run-of-the-river reservoir system, (a reservoir created by constructing a dam across a river), a surface water intake (which pumps water from a river to a reservoir for storage), or a surface water intake that directly diverts water from a river to the water treatment facility. All diverted surface waters are treated prior to distribution. Raw water, as was described at N.J.A.C. 7:9B-1.5(d)8, means water pumped from a waterbody without any treatment. The Department determined that the qualifier "raw" is not necessary in this policy and, therefore, is deleting the word "raw" upon adoption.

38. COMMENT: It is inappropriate to provide that designated uses do not need to be met based upon economics at N.J.A.C. 7:9B-1.5(d)(1). The CWA provides that designated uses must be met by the implementation of the requirements of § 301 and 306. The requirement of economically feasible only comes into play with the requirement that best management practices be used for non-point sources. Therefore, this provision should be removed. (13)

RESPONSE TO COMMENT 38: The Department has adopted antidegradation policies to protect existing and designated uses. Water quality criteria have been adopted at levels that protect the designated uses. Therefore, the Department imposes water quality-based effluent

limitations in NJPDES permits that protect water quality and ensure that the designated uses are maintained. In Outstanding National Resource Waters (PL and FW1), the Department may not authorize a new or expanded discharge. In Category One waters, the Department may only authorize a new or expanded discharge that does not change the existing water quality. Therefore, accommodating important economic or social development analysis cannot be considered in FW1, PL or Category One waters. The Department may only consider economic or social development analysis when reviewing a NJPDES permit application for a new or expanded discharge in Category Two waters. NJPDES permits may include water quality-based effluent limitations that lower the existing water quality, but these limits must ensure that the water quality criteria are met and the designated uses are protected.

In accordance with Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d), states are required to identify waters that do not meet the water quality criteria even after installation of pollution control technologies (required under CWA §301 and 306). These waters are identified as water quality limited waters and are placed on the 303(d) list. States are then required to develop TMDLs for these water quality limited waters. (See Response to Comments 27 and 28)

39. COMMENT: In proposed N.J.A.C. 7:9B-1.5(d)1iv, the Department states that where water quality presently exceeds levels necessary to support designated uses, such water quality shall be maintained and protected unless the Department finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the Department's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development.

In order to increase capacity of treatment plants, the WQMP rules at N.J.A.C. 7:15-5.25(d)3iv require the applicant to make certain demonstrations as provided for in the SWQS to essentially justify the modifications for social or economic purposes. The Water Quality Management Planning rules contain and are the significant part of the "continuous planning process" that the Department, Counties, and municipalities undertake.

Given that such detailed planning is undertaken to define sewer service areas after environmentally sensitive areas are extracted, the Department should not require any other justification in order to gain additional capacity to meet wastewater needs of defined growth areas. The Department must define the basis for requiring this social and economic demonstration beyond the WMP analyses and specifically define exactly what is "important, necessary and justifiable social and economic development". (19)

RESPONSE TO COMMENT 39: Antidegradation analysis is not required from existing facilities, unless the facilities request to increase the permitted load, because renewal of a permit for an existing discharge at the same permitted load does not result in a lowering of water quality or any impact to existing uses. The antidegradtion implementation provisions are established in the Water Quality Management Planning rules at N.J.A.C. 7:15-5.25(d)3. The Water Quality Management Planning rules establish a hierarchy for wastewater treatment and disposal alternatives that must be evaluated as part of the antidegradation analysis. The applicant for a new or expanded discharge must evaluate reclaimed water for beneficial uses and implement beneficial reuse to the extent feasible. The second alternative is to evaluate increasing flow and improving the quality of treatment at the facility to maintain the current pollutant load authorized in the existing NJPDES permit. To the extent that the pollutant load increase cannot be avoided, the Department shall impose water quality-based effluent limits calculated based on a Department approved water quality study to maintain the existing water quality. If the facility cannot comply with water quality-based effluent limits, the applicant must adjust the sewer service area such that the wastewater generated by the facility does not exceed the permitted capacity, unless the facility discharges to a Category Two stream and makes a successful demonstration pursuant to N.J.A.C. 7:9B-1.9(a) that a lowering in quality is justified. These requirements are designed to assist in determining if the project supports important, necessary and justifiable social and economic development. The USEPA's 'Interim Economic Guidance for Water Quality Standards' (http://www.epa.gov/waterscience/standards/econworkbook/) is useful in determining the relative economic consequences of various development proposals and

their relationship to water quality standards. Therefore, new or expanded discharges that receive planning approval are not required to complete any additional analysis to demonstrate that the project supports "important, necessary and justifiable social and economic development".

40. COMMENT: The USEPA has amended its antidegradation regulations and specifically removed the Tier 1, 2 and 3 criteria. However, the Department's proposal makes no reference to this. The Department should provide a detailed explanation of why it has not amended its regulations to eliminate the restrictions on Category Two waters and explain how the proposed antidegradation requirements do not go beyond the Federal antidegradation rules. (19)

RESPONSE TO COMMENT 40: The USEPA Water Quality Standards regulations at 40 C.F.R. 131.12 and the Water Quality Standards Handbook (See http://www.epa.gov/waterscience/standards/handbook/) describe Tier 1, 2, and 3 antidegradation levels. New Jersey also has three levels of antidegradation protection in its Surface Water Quality Standards similar to the USEPA's policies. The most protective tier of antidegradation designation is Outstanding National Resource Waters (ONRW) which include surface waters classified as FW1 and PL. These waters are set aside for posterity because of their unique significance. The Department cannot approve any activity which might alter existing water quality in these waters. This is equal to the Federal Tier 3.

The second tier of antidegradation designation is Category One (C1). Category One waters are designated through rulemaking for protection from measurable changes in water quality because of their Exceptional Ecological Significance, Exceptional Water Supply, Exceptional Recreation, and Exceptional Fisheries to protect and maintain their water quality, aesthetic value, and ecological integrity. When compared to the Federal Tiers, New Jersey's Category One designation is considered equivalent to Tier 2½. USEPA has acknowledged that New Jersey and other states have developed antidegradation programs that provide additional protections for "high quality waters". USEPA considers these additional protections to be Tier 2½ level of protection and found them to be consistent with the Federal program (Advanced

Notice of Proposed Rulemaking on the Water Quality Standards Regulation. Fed. Reg. 63:36743, July 7, 1998)

Waters not designated in the SWQS as ONRW (FW1 or PL) or C1 are designated as Category Two (C2). Similar to Category One, existing water quality is maintained in Category Two waters. In Category Two waters where water quality exceeds the current criteria, water quality may not be degraded unless in can be proven to be "necessary" for important social and economic development. Category Two waters are equal to Federal Tier 2.

The Federal Tier 1 is the bottom line designation, and it states that in no case may a state allow existing uses of waters to be harmed. None of the waters in New Jersey are designated equal to Federal Tier 1 level.

As indicated in the Federal Standards Analysis at 41 N.J.R. 1581 (April 20, 2009), New Jersey's antidegradation policies are consistent with and do not impose restrictions more stringent than those allowed under the Federal water quality standards regulations. Therefore, New Jersey's antidegradation requirements do not go beyond the Federal antidegradation rules.

41. COMMENT: The proposed changes with respect to Pinelands waters are a notable improvement, but the policy is worded in such a manner as to potentially cause confusion. Ultimately, the SWQS govern and must be met. Simply because the Pinelands Commission issues a waiver under the CMP for a project that would result in a new or expanded discharge, that waiver does not constitute an antidegradation analysis under the SWQS. Additionally, any of the grandfathered discharges should be subject to an antidegradation analysis at such time as they seek renewal of existing NJPDES permits. (9)

RESPONSE TO COMMENT 41: The Department agrees with the commenter that the Pinelands Commission waiver does not constitute an antidegradation analysis. The Pinelands Commission required, at N.J.A.C. 7:50-6.84, all facilities with a discharge to surface waters to

cease discharge unless there is no practical alternative available to allow the facility to cease its discharge. The six remaining facilities listed in the summary of the proposal at 41 N.J.R. 1568, have received waivers to continue discharging at their existing permitted levels. A new or expanded discharge would have to be included in the applicable wastewater management plan which could only occur after the facility completed an antidegradation analysis. Renewal of an existing facility without any increase in loading is not required to conduct an antidegradation analysis, see Response to Comment 39 for more information.

BIOASSAY AND BIOMONITORING POLICIES - N.J.A.C. 7:9B-1.5(f)

42. COMMENT: Deletion of bioassay and biomonitoring provisions at N.J.A.C. 7:9B-1.5(f) undermines the purpose of the policy at N.J.A.C. 7:9B-1.5(a)4 that indicates, "Toxic substances in waters of the State shall not be at levels that are toxic to humans or the aquatic biota, or that bioaccumulate in the aquatic biota so as to render them unfit for human consumption" and is not justified. The WET testing requirements must be added to this section, not replace bioassay and biomonitoring policies. Without these provisions, the Department will not have the necessary authority to evaluate whether toxins are accumulating and impacting the environment. Surface waters are affected by unregulated point sources and non-point sources of pollution in addition to New Jersey Pollutant Discharge Elimination System (NJPDES) regulated point sources. The proposed WET testing does not assess either non-point or unregulated point sources that impact water quality and aquatic life. In addition, WET testing takes place prior to chlorination for NJPDES permits and does not access toxicity from chlorine producing oxidants or resulting cumulative affects and interactions with other contaminants. Again, deletion of bioassay and biomonitoring policies is not justified. The Clean Water Act mandates that New Jersey comply and fulfill the Act's purpose of "restoring, and maintaining the chemical, physical, and biological integrity" of the State's waters. The Department cannot adequately ensure the restoration and maintenance of waters without bioassays and biomonitoring testing. (9)

RESPONSE TO COMMENT 42: The Department proposed to delete the bioassay and biomonitoring provisions at N.J.A.C. 7:9B-1.5(f) and replace it with a policy that indicates

Whole Effluent Toxicity Requirements shall be established for NJPDES point sources in accordance with N.J.A.C. 7:14A-13.6(d). The Whole Effluent Toxicity Requirements will continue to be implemented through the NJPDES program. The Department has adequate authority to evaluate whether pollutants are present at levels that are toxic to humans or the aquatic biota, or that bioaccumulate in the aquatic biota so as to render them unfit for human consumption. The Department collects and analyzes fish tissue to determine whether the levels present render the fish unfit for human consumption. Whole-effluent toxicity testing is designed to simulate the impact of a discharge on the survival, growth, and reproduction of the aquatic community. WET testing is not designed to evaluate the bioaccumulative impacts. Fish tissue monitoring is more appropriate to evaluate the bioaccumulative effects.

The commenter also expressed concern that allowing NJPDES facilities to conduct whole-effluent toxicity testing prior to chlorination would not assess the toxicity impacts due to chlorination. This is not the case. While the NJPDES rules at N.J.A.C. 7:14A-13.16(a)6 would allow a permittee to conduct WET testing prior to chlorination, the permittee must first demonstrate that the discharge meets the water quality-based effluent limit for Chlorine Produced Oxidants (CPO). Water quality-based effluent limitations are developed to ensure that the discharge will not cause a violation of the aquatic life criteria for chlorine produced oxidants at N.J.A.C. 7:9B-1.14(f)7. The permittee is still required to monitor its effluent quality for compliance with their CPO limit as well as conducting WET testing, either pre or post chlorination. Therefore, chlorination should not result in toxic impacts.

NUTRIENT POLICY AND CRITERIA - N.J.A.C. 7:9B-1.5(g) and 1.14

43. COMMENT: The Department proposes language to specify that water quality-based effluent limits (WQBELs) for nutrients must be based on a wasteload allocation through a TMDL or the numeric phosphorus criteria where the Department has already made a determination that the narrative criterion are not satisfied. The reorganization of the language succeeds in making the narrative nutrient criteria clearer to understand. This clarification is appreciated. (2)

44. COMMENT: The Department proposes to require a determination that the narrative nutrient criteria are not satisfied before the numeric phosphorus criteria become applicable. In other words, there must be a documented problem before a solution is imposed. This proposed change is extremely important and well reflects the lessons learned over the last 10 years. The Department is applauded for boldly addressing the shortcomings of its existing numeric criteria by proposing to make them applicable only after a nutrient impairment has already been documented. (2)

45. COMMENT: The Department's development of rigorous, scientifically-based nutrient criteria, which includes both numeric and narrative surface water quality criteria based upon the "weight of evidence" approach is supported. The establishment of such criteria will address long-standing issues with water quality impairment due to nutrients, particularly phosphorous. Further, reliance on scientific data to determine water quality is appropriate, in light of historic arguments that simply rely on general concern for water quality without adequate and reliable justification for the inhibition of growth in the State. (19)

46. COMMENT: The commenter applauds the strides the Department has made with respect to phosphorous. (9)

47. COMMENT: Nutrient loads can impact streams and reservoirs. This will result in eutrofication and secondary impacts of die off from treating waters with high levels of bacteria and algae, creating chlorine by-products that are carcinogenic. The key to protecting our water is to limit nutrients. (18)

48. COMMENT: Using a narrative criterion for phosphorus is a weakening of the rule's protections because it is an averaging, not a protective standard for discharge. The standard of 0.1 mg/L is not protective enough, especially for streams that are impaired. The standard should

be 0.04 mg/L unless the stream is impaired, in which case the standard should be 0.01 mg/L. These standards are also recommended by the USEPA. (18)

49. COMMENT: Weaker water quality standards should not be allowed to go into effect for New Jersey streams. Strong numeric criteria for nutrients are preferred. Excess nutrients worsen habitat for fish and the other river/bay inhabitants and can result in undesirable algae blooms. (6, 8, 11, 12, 15)

50. COMMENT: N.J.A.C. 7:9B-1.14(d)5i is extremely difficult to read and understand. The Department should instead use the following alternative: "Concentrations shall not render the waters unsuitable for the existing or designated uses, as described in nutrient policy at N.J.A.C. 7:9B-1.5(g)2; otherwise, if the Department determines that nutrient policy at N.J.A.C. 7:9B-1.5(g)2 is violated, the numeric criteria in ii or iii below apply." For clarity, the Department should add that site-specific criteria and watershed-specific nutrient criteria replace the numeric criteria in N.J.A.C. 7:9B-1.14(d)5ii and iii at new N.J.A.C. 7:9B-1.14(d)5iv. (2)

RESPONSE TO COMMENTS 43 THROUGH 50: Beginning in 1998, USEPA recommended in a series of policy memoranda that states accelerate the development and adoption of numeric nutrient water quality standards. USEPA also initiated efforts to develop ecoregion criteria that states could use. These policy memoranda and other related guidance documents were designed to implement the national policy. These documents did not constitute a determination that new or revised nutrient water quality standards were necessary in a particular or site-specific context to meet the requirements of the Clean Water Act. States could adopt water quality standards based on these ecoregion criteria recommendations or another scientifically defensible approach.

As directed by the USEPA, the Department has developed a Nutrient Criteria Enhancement Plan that identifies actions needed to develop nutrient criteria for all waterbody types, including coastal and estuarine waterbodies. USEPA Region 2 approved the Department's

plan on June 18, 2009. In the Nutrient Criteria Enhancement Plan, the Department explains that it plans to establish numeric translators for the narrative nutrient criteria and develop, where appropriate, numeric criteria.

Biotic responses to nutrients are highly dependent on the physical and chemical characteristics of a water system. Therefore, it is necessary to select appropriate response indicators based on the classification of the waterbody, such as fresh or saline waters. Focusing on response variables instead of casual variables (nutrient concentrations) provides a more accurate assessment of designated use conditions. For example, waterbodies with different canopy cover, water color, bottom substrate, or depth will not show the same biological responses from nutrient enrichment. Streams with light limitation caused by high canopy cover and darker water color will show less algal growth than streams without a canopy cover and clearer water. By evaluating response indicators, the Department will be able to better identify waters where nutrients cause impairment. This will also allow the Department to better identify waters where nutrient levels may be below the existing numeric phosphorus criteria, but other characteristics of the waterbody result in adverse impacts from nutrient enrichment. Focusing on response indicators will improve management decisions for controlling nutrients and properly utilize valuable resources by implementing restoration and prevention activities where appropriate. The Department's approach allows it to incorporate recent knowledge gained from data and research developments for New Jersey while incorporating already proven, scientific technical guidance from USEPA. The Department's plan to use appropriate response indicators is a scientifically sound approach to identify nutrient impacts and is consistent with the USEPA's recommendations.

The USEPA published guidance describing basic analytical approaches that could be used to derive nutrient criteria including: (1) The reference condition approach, (2) stressor-response analysis, and (3) mechanistic modeling. The USEPA developed ecoregion criteria for total phosphorus, total nitrogen, chlorophyll *a* and turbidity for lakes and ponds, and for rivers and streams using the "reference condition" approach. Since New Jersey is included in four

ecoregions, the USEPA recommended criteria for total phosphorus ranged from 0.036 mg/L to 0.01 mg/L. Because many states are currently pursuing the use of empirically-derived stressor-response relationships as the basis for developing numeric nutrient endpoints for water quality standards, on August 17, 2009, USEPA issued a final draft of the guidance "Empirical Approaches for Nutrient Criteria Derivation". This document was presented to the public on September 9-11, 2009 in Washington D.C. The Department is developing nutrient criteria based on biological and water-quality indicators that reflect documented cause and response relationships and use impairment consistent with the USEPA's draft guidance.

The Department's approach to use narrative criterion to assess whether nutrients cause a problem is not less protective. In fact, this approach enables the Department to address nutrient impairment in waters where the phosphorus concentration is less than the numeric phosphorus criteria. This is also a reasonable approach to evaluate and control nutrients while a better supportable numeric criteria is developed.

Many commenters supported the concept of determining whether phosphorus caused undesirable biological responses in a specific waterbody, while others viewed this approach as less protective. As indicated above, the Department believes that it is necessary to evaluate phosphorus on a waterbody-specific basis because implementing a single numeric criterion may under-protect some waters and result in overly restrictive requirements in others. Therefore, the use of an assessment method to evaluate the biological response to nutrients is critical to ensure that controls are required in the right locations.

The Department has determined that revisions are needed to clarify when the numeric phosphorus criteria are applicable. The Department has concluded that these changes are substantive and would benefit from additional public comment. Accordingly, the amendments to the phosphorus criteria proposed on April 20, 2009 are not adopted and the existing phosphorus criteria at N.J.A.C. 7:9B-1.14(d)5 remain in effect. The Department is proposing amendments to the nutrient policy and criteria elsewhere in this issue of New Jersey Register (See 41 N.J.R. ---).

The Department is re-proposing phosphorus numeric criteria for both non-tidal streams and lakes to indicate that the numeric criteria apply until the Department determines that phosphorus concentration do not cause undesirable conditions described in the narrative criterion for nutrients. In addition, the Department considered a comment that the narrative criterion for nutrients should apply to other stream classifications and not just FW water. The Department has evaluated the existing narrative criterion and determined that it could apply to SE and SC waters.

The Department has developed an appropriate narrative criterion assessment method using response indicators with numeric thresholds for wadeable/non-tidal streams. Where the Department does not have the information available to evaluate the narrative criterion for rivers and streams, the numeric criteria will still be used to identify impaired waters and to regulate wastewater discharges. This change, when adopted, will be incorporated into the 2010 Integrated Monitoring and Assessment Methods Document to clarify that, where the Department does not have the information to evaluate the narrative criterion, but does have phosphorus measurements that exceed the criterion, the Department will identify these waters as impaired for phosphorus.

51. COMMENT: The proposed Nutrient Policy is objectionable because it elevates the narrative criterion over the numeric criteria for phosphorous. Moving away from the numeric criterion is inefficient and problematic because it also runs contrary to the goals of the Clean Water Act to restore, protect and maintain water quality. This move by the Department leaves no margin of safety for waterbodies impaired by nutrients, because, once the effects are seen, it will be too late. The methods for determining whether a proposed discharge has a reasonable potential to cause, or contributes to an excursion or potential excursion above a narrative criterion, essentially require the creation of a numeric criterion. Furthermore, there is no ability to create interim limits for nutrients when they are expressed as narrative criterion. (9)

RESPONSE TO COMMENT 51: As described in Response to Comments 43 through 50, the Department is retaining the existing phosphorus criteria at N.J.A.C. 7:9B-1.14(d)5 until the newly proposed amendments, published elsewhere in this issue of New Jersey Register (41 N.J.R. ----) are adopted. The use of narrative criterion with numeric thresholds designed to address site-specific impacts is a reasonable approach to evaluate whether nutrients cause undesirable biological responses. However, as indicated by the commenter, evaluating whether a discharge causes or has reasonable potential to cause an exceedence of the narrative criterion is more complicated. The Department has developed an approach to evaluate the narrative criterion to determine whether effluent limitations are necessary. The Department can impose interim or final effluent limits as follows. For existing facilities, where the narrative criterion is not met, the Department will use the numeric phosphorus criterion to develop water quality-based effluent limitation for phosphorus. The Department will require the applicant for a new or expanding facility to collect the data necessary to assess compliance with the narrative criterion, if that information is not already available. An applicant for a new or expanded discharge will additionally be required to collect water quality data necessary to determine water quality-based effluent limitations required to comply with the antidegradation policy. The Department cannot authorize the expanding facility to increase the load of phosphorus discharged, if a water quality-based effluent limitation as described above has been imposed. In addition, new and expanding facilities must comply with the antidegradation policy, which may also restrict the discharge of phosphorus. For additional information on antidegradation, see the Response to Comment 40.

52. COMMENT: The failure to set nitrogen standards to protect the ecological integrity of streams and rivers is causing a serious problem with eutrophication, especially in Barnegat Bay. These standards must be protective of aquatic life. New Jersey's failure to adopt nitrogen standards is not only causing problems in coastal areas and creating dead zones in estuaries, but is affecting the entire State's drinking water. Barnegat Bay has become New Jersey's largest stormwater basin. (18)

53. COMMENT: Nitrogen loading is a problem in the Delaware Bay watershed, and in New Jersey's coastal lagoon estuaries, coastal waters, back bays, and the Hudson River Estuary. This proposal ignores this problem. Nitrogen is very dynamic and its different forms, as well as total nitrogen, need to be considered. Dissolved Inorganic Nitrogen alone is insufficient. The Department should adopt a narrative criterion for nitrogen with numeric translators that will allow to assess and monitor impacts. (9)

54. COMMENT: The proposed Nutrient Policy is incomplete because it should apply to all waterbodies including SE and SC and because it fails to consider nutrients other than phosphorous. The imposition of TMDL-study based requirements related to the development of policies and criteria for all nutrients may hinder the development of criteria for SE and SC waters. Little progress has been made on arresting nitrogen pollution, in general. TMDLs are not immediately necessary for all limited segments, or the TMDL development is slowed by higher priority TMDLs. It appears that no progress will be made until the formal TMDL development process begins. Meanwhile, researchers are amassing vast amounts of data that demonstrate the SE and SC waters are impaired for other nutrients, such as nitrogen, and developing the necessary bioindicators to make those impairment determinations. However, that information is not being used to determine attainment of existing or designated uses for those coastal and estuarine waterbodies. Instead, the Department continues to rely on admittedly inapplicable proxies, such as grab samples of DO in Barnegat Bay. (9)

55. COMMENT: It is possible that in Delaware Bay, the establishment of a numeric criterion for nitrogen is more appropriate at this time, and that the coastal lagunal estuaries would benefit from a narrative criterion for Total Nitrogen (and possibly also individual forms: nitrate, nitrite, dissolved organic nitrogen and particulate organic nitrogen), for estuarine and marine waters, with numeric translators. (9)

56. COMMENT: The Department states that it is doing research and may later have criteria for other nutrients. It is our understanding that the USEPA has already completed a substantial

amount of research on other nutrients. In fact, there is extensive information on the USEPA and NOAA websites relating to other nutrients and the criteria for those nutrients. USEPA, *Nutrient Water Quality Criteria*, available at http://epa.gov/waterscience/criteria/nutrient/index.htm; NOAA 2007, Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change; NOAA, The Assessment of Estuarine Trophic Status (ASSETS). In light of the information that is already available, please explain why the Department believes any additional time and State resources are needed to develop comprehensive nutrient criteria. Please explain why the Department does not adopt USEPA's criteria for the remaining nutrients until the Department can complete the research it proposes and implement more stringent criteria, if necessary. (9)

RESPONSE TO COMMENTS 52 THROUGH 56: As indicated by the commenters, estuaries and ocean waters have been studied by both USEPA and NOAA. However, neither agency has recommended numeric nutrient criteria. USEPA acknowledged in its Nutrient Criteria Technical Guidance Manual Estuarine and Coastal Marine Waters (EPA-822-B-01-003 October 2001) that it was not possible to recommend a single national criterion applicable to all estuaries. Natural enrichment varies throughout the geographic and geological regions of the country, and these subdivisions must be considered in the development of appropriate nutrient criteria. The USEPA indicated that the approach taken to develop ecoregion criteria based on reference conditions is not feasible for estuaries. Estuarine and coastal marine waters tend to be far more unique, and development of individual waterbody criteria, rather than for classes of waterbodies (such as glacial temperate lakes), is a more appropriate response. On August 17, 2009, USEPA issued a final draft of the guidance "Empirical Approaches for Nutrient Criteria Derivation". This document was presented to the public on September 9-11, 2009 in Washington D.C. It is expected this guidance will allow the Department to expand and improve on its Nutrient Enhancement Plan to develop nutrient criteria for all waters of the State.

As indicated by the commenter, both the USEPA and NOAA have developed assessment methods to evaluate nutrient impacts in estuaries. These assessments are based on different indicators. The USEPA's National Coastal Assessment bases its assessment on dissolved

inorganic nitrogen, dissolved inorganic phosphorus, water clarity, chlorophyll *a*, and dissolved oxygen, while NOAA's National Estuarine Eutrophication Assessment assigns an eutrophic condition level based on chlorophyll *a*, macroalgal abundance, dissolved oxygen, nuisance/toxic blooms, and loss of submerged aquatic vegetation.

The Department's strategy for developing nutrient criteria in coastal waters is described in the New Jersey Nutrient Criteria Enhancement Plan (Nutrient Plan), which is published on the Department's Web site at http://www.state.nj.us/dep/wms/bwqsa/. The Department's approach for developing nutrient criteria based on biological and water-quality indicators that reflect documented cause and response relationships as well as use impairment, is consistent with USEPA's draft guidance. The Nutrient Plan explains that nutrient criteria development requires an understanding of the complex relationships between nutrient over-enrichment, various response variables, and documented impacts on attainment of designated and existing uses of New Jersey waters. The Nutrient Plan describes the process already underway for developing new assessment methodologies and criteria needed to address nutrient-related impairment of New Jersey's coastal waters.

The first step in the nutrient criteria development process is the development of a method for the waterbody type (rivers, lakes, estuaries, oceans) to evaluate nutrient-related use impairment. Narrative and numeric nutrient criteria can then be developed that address the specific cause of nutrient-related impairment in that type of waterbody.

The Department intends to apply this same basic approach in developing nutrient criteria and assessment methods for all New Jersey waters. The factors used may be different to reflect the cause/response variables at play in the different aquatic ecosystems, but the scientific process used to identify these relationships will be the same:

- Collect/compile sufficient chemical and biological data to be able to make statistical correlations;

- Assess the strength of the cause/effect relationships;
- Analyze the data;
- Evaluate stressor-response relationships;
- Select a biological indicator specific to the ecology of the waterbody type and develop a biological index for assessment purposes;
- Assess aquatic life use and identify the cause of use impairment (such as, nutrients or other).
- Evaluate stressor-response criteria

To that end, the following studies are underway or will begin in the near future to support nutrient criteria development and address nutrient-related use impairment in coastal waters:

Estuarine waters -Barnegat and Delaware Bays:

The Department is working with Rutgers, USEPA Region 2, USEPA Office of Research and Development, and NOAA to evaluate existing indicators, such as chlorophyll *a*, macroalgal abundance, dissolved oxygen, submerged aquatic vegetation, and nuisance/toxic algal blooms, and establish New Jersey-specific benthic indicators to assess aquatic life use in New Jersey's shallow coastal bays. These benthic indicators will also help identify aquatic life use impairments that are nutrient related. Existing data on benthic communities in the near-shore ocean waters and estuaries of New Jersey has been compiled and additional data has been collected. However, additional research is needed to develop cause/response indicators to determine if nutrients are the cause of any use impairment found in these waters. The Department has also begun collecting real-time diurnal dissolved oxygen (DO) data, in partnership with Monmouth University and the Barnegat Bay Estuary Program. This study will improve understanding of the dissolved oxygen conditions and impacts in the estuary. In addition, the Department has applied for a USEPA grant to collect sediment cores from the tidal region of Barnegat Bay. The sediment coring objective is to confirm historical nutrient loading and associated ecosystem level responses in relation to land use changes and anthropogenic nutrient loadings.

The Delaware River Basin Commission is heading up a multi-state/regional effort to address the impact of nutrients in the Delaware Estuary/Bay from the tidal rivers flowing to the Delaware River Estuary through the development of nutrient criteria. The Department is participating in the nutrient criteria development project initiated by the Delaware River Basin Commission for the Delaware River Watershed.

Marine Waters:

The Department is working with Rutgers, USEPA Region 2, USEPA Office of Research and Development, and NOAA to develop indicators of ecosystem health for the benthic communities in near-shore ocean (marine) waters. The Department identified the ocean waters as impaired for dissolved oxygen in 2002 based on USEPA grab samples collected via helicopter through the coastal monitoring program. These low DO conditions are brought about by thermal stratification that occurs during the quiescent periods of the summer and early fall. Storms and the onset of autumn bring about surface to bottom mixing resulting in a breakup of these low DO conditions until the onset of warmer temperatures in June. The impacts to benthic aquatic life and the possible anthropogenic contributions to these benthic conditions are currently unknown. In order to address this information deficiency, the Department is developing a benthic aquatic life indicator to better understand marine aquatic life communities and the impact of low dissolved oxygen conditions. As part of the process to develop the benthic aquatic life indicator, in the summer of 2007 sampling was conducted of benthic aquatic life in near-shore ocean waters. The Department recently receiving USEPA funding to purchase a water sampling glider for continuous DO monitoring. In the near future, the Department expects to reassess aquatic life use in near-shore ocean waters based on correlations between the benthic aquatic life indicator and continuous DO data.

The Department did not propose to extend the existing nutrient policies to coastal waters. However, the Department has determined that the existing narrative nutrient criteria and the nutrient policies at N.J.A.C. 7:9B-1.5(g)3 and 5 could be applicable to SE/SC waters. Therefore, the Department is proposing amendments to N.J.A.C. 7:9B-1.5(g)1 to make the policy applicable to all types of waters. This change will enable the Department to evaluate the impact of nutrients

on other types of waters once an appropriate assessment method is developed. As part of this rulemaking effort, the Department developed an assessment method for nutrients in freshwater wadeable streams and included this new method in the 2010 Integrated Water Quality Monitoring and Assessment Methods Document which was published for public comment on May 4, 2009. (See 41 N.J.R. 2055(a)). As indicated above, an assessment method for the near-shore ocean waters and coastal bays is currently under development which will be incorporate into future Integrated Water Quality Monitoring and Assessment Method Documents. The public will be provided an opportunity to review and comment on the assessment method before the Department uses it to evaluate the narrative criterion in other waters in accordance with N.J.A.C. 7:15-6.2.

57. COMMENT: Did the Department conduct a thorough analysis for all nutrients? If not, why not? Most waters in the U.S. are impaired for nutrients, so it is surprising that the Department thinks nothing more needs to be done. For example, the proposal ignores other nutrients (C, Si, Fe, etc.). Carbon is a macronutrient and is a limiting nutrient in coastal waters. Silicon and iron are micronutrients that can be also limiting for certain phytoplankton species. (9)

RESPONSE TO COMMENT 57: The Department plans to focus on phosphorus in freshwaters and nitrogen is saline waters to control over-enrichment of the State's waters. Carbon is an essential element but is not considered a macro or micro nutrient. Macronutrients are the driving mechanism for eutrophic conditions with micronutrients playing a comparatively less significant role. Although micronutrients can be a limiting factor in certain circumstances, their impact is inconsequential when compared to the impacts of phosphorus and nitrogen. Furthermore, USEPA has not evaluated or recommended criteria for micronutrients or carbon.

58. COMMENT: The SWQS for nitrate (N.J.A.C. 7:9B-1.14(d)7) establishes a human health standard of 10 mg/L based on the consumption of drinking water. While such a standard may be appropriate for drinking water from a potable water supply, it is not appropriate for surface

waters that are seldom used for direct consumption. In fact, the 10 mg/L human health standard is based on protecting infants below the age of 6 months and the National Primary Drinking Water Regulations (40 C.F.R. 141.11(d)) give the State discretion to set the maximum contaminant level for nitrate to 20 mg/L in a non-community water system under certain conditions. Allowing an infant to consume untreated surface water would likely be considered criminally negligent conduct as treatment of surface water is required prior to use as potable water. Accordingly, the direct consumption assumption is inappropriate. N.J.A.C. 7:9B should specifically authorize a variance process to allow a less-restrictive discharge for parameters such as nitrate that are regulated solely based on drinking water health concerns. For example, a variance to the 10 mg/L human health criteria should be considered where dilution and/or fate processes reduce the concentration of nitrate in a receiving water below 10 mg/L prior to a drinking water intake. (4)

59. COMMENT: The Department should adopt, where possible, a numeric criterion for nitrogen that is more protective than the 10 mg/L drinking water standard. USEPA's Ecoregion approach provides a numeric criterion for Total Nitrogen and suggests that for Ecoregion XIV, the criterion for total nitrogen should be 0.71 mg/L. A numeric criteria established will also aid in monitoring and enforcement. (9)

RESPONSE TO COMMENTS 58 AND 59: The Department is still evaluating whether it is necessary to establish nitrate criteria in freshwaters to protect aquatic life use in addition to the existing 10 mg/L drinking water nitrate criteria. The Department has adopted water quality criteria to protect the drinking water use including a criterion for nitrate consistent with the Maximum Contaminant Level (MCL) established in the Safe Drinking Water Act Regulations. The Department establishes water quality-based effluent limits where the discharge will cause or reasonable potential to cause the instream concentration of a pollutant to exceed the water quality criteria. A NJPDES permittee subject to a water quality-based effluent limit for nitrate in their NJPDES permit may qualify for a variance in accordance with N.J.A.C. 7:9B-1.8 and 1.9 or petition to modify the designed uses.

60. COMMENT: The response to comments should specifically address the information considered and the basis for the conclusion that the existing phosphorus controls are sufficient. (9)

RESPONSE TO COMMENT 60: The Department assumes that commenter by using the term "existing phosphorus controls" that the commenter is referring to current wastewater treatment. The Department proposed to change the implementation of nutrient policies in freshwaters to evaluate the site-specific factors that may affect the biological response to nutrients so that nutrient controls are required where the levels of phosphorus render the waters unsuitable for their designated uses. Where such a determination is made, the numeric phosphorus criteria will be used to establish individual water quality-based effluent limits and additional wastewater treatment may be necessary. However, the Department is not adopting the proposed changes (see Response to Comments 43 through 50) but reproposing amendments to nutrient policies and criteria elsewhere in this New Jersey Register at 41 N.J.R. ----.

61. COMMENT: The proposed addition of "watershed-specific translators" provides an excellent mechanism to integrate the SWQS with nutrient TMDL efforts. End points developed within a TMDL process to address nutrient impacts can be used without requiring any change to the SWQS criteria. The TMDL public involvement and public comment processes provide ample opportunity for public input on end points, and the proposed "watershed translator" provides an excellent mechanism to integrate with the SWQS. (2)

RESPONSE TO COMMENT 61: The Department acknowledges the commenter's support for this amendment.

62. COMMENT: The Department should express its default total phosphorus (TP) criterion for lakes as an annual average rather than a not-to-exceed criterion. The problem with the 0.05 mg/L not-to-exceed standard is that TMDLs end up being driven by the theoretical concentration

of TP during large storm events. This leads to unrealistic nonpoint source reduction requirements. Furthermore, lakes respond to the long-term nutrient conditions, rather than the transient conditions at any particular time, as acknowledged by the Department in its many lake TMDLs that have been based on annual average phosphorus concentration targets. (2)

63. COMMENT: The Department should specify a longer averaging period for its generic instream TP criterion of 0.1 mg/L. The phosphorus evaluation studies and TMDL studies clearly demonstrate that a summer average flow is justified rather than 7Q10. Instream productivity responds to overall nutrient conditions, not transient concentrations, as reaffirmed by the Department in its recent nutrient TMDL studies. (2)

RESPONSE TO COMMENTS 62 AND 63: The Department has not established an averaging period for phosphorus, either for lakes or streams, at N.J.A.C. 7:9B-1.14(d)5. The averaging period is waterbody specific and is best developed through a TMDL. The Department uses the numeric phosphorus criteria at N.J.A.C. 7:9B-1.14(d)5 to develop phosphorus effluent limitations for NJPDES permits in accordance with N.J.A.C. 7:14A-13. These phosphorus effluent limitations are required to be expressed as a monthly average concentration and loading. The Department believes that N.J.A.C. 7:9B-1.5(g)3 that allows development of watershed-specific translators or site-specific criteria through a TMDL, provides the flexibility to develop load allocations and wasteload allocations using a waterbody-specific averaging period. The watershed-specific translators or site-specific criteria may be expressed as annual average or any other appropriate timeframe (averaging period) in order to meet designated uses.

64. COMMENT: The deletions in N.J.A.C. 7:9B-1.5(g)(6) and of the corresponding definitions are premature. While the Department has derived new standards and methods for phosphorous, it has done nothing with respect to other nutrients, and, as such, these provisions should be left intact until comprehensive plans can be developed, particularly for nitrogen. (9)

RESPONSE TO COMMENT 64: Algal biostimulation assays were intended to determine whether phosphorus was the limiting nutrient in freshwaters and caused excessive algal growth. The narrative nutrient criterion includes a description of the types of biological responses that result from excessive nutrients. Where the narrative nutrient criteria is met, the levels of phosphorus, nitrogen and other nutrient related pollutants are present at levels that do not impair the aquatic life use. Phosphorus is expected to be the limiting nutrient in freshwaters, therefore, where the narrative nutrient criterion is not met, numeric criterion for phosphorus will be implemented. Therefore, the Department has deleted the provision at N.J.A.C. 7:9B-1.5(g)6 that allowed the use of algal biostimulation assay to determine whether phosphorus was the limiting nutrient in a lake, pond, reservoir or stream because this assay is no longer necessary. As indicated in the Response to Comments 43 through 50, the Department is not adopting the proposed amendments to the phosphorus criteria at N.J.A.C. 7:9B-14(d)5, but is reproposing amendments to the nutrient policies and criteria elsewhere in this issue of New Jersey Register at 41 N.J.R. ----.

65. COMMENT: The sentence in N.J.A.C. 7:9B-1.5(g)3 on site-specific criteria ends with a reference to N.J.A.C. 7:9B-1.5(c)6iii, which appears to be incorrect as it deals with metal translators in the existing rules and criteria updates based on SDWA MCLs in the proposed rule. There does not appear to be any need to include the phrase "as specified at …" in this sentence. (2)

RESPONSE TO COMMENT 65: The Department agrees with the commenter and is deleting the phrase "as specified at N.J.A.C. 7:9B-1.5(c)6iii" from N.J.A.C. 7:9B-1.5(g)3 because it is incorrect.

66. COMMENT: There is a reference to N.J.A.C. 7:14A-5.3 at N.J.A.C.7:9B-1.5(g)4, which does not exist. Perhaps the Department intended to reference N.J.A.C. 7:14A-12.7. (2)

RESPONSE TO COMMENT 66: The commenter is correct; as indicated in the summary of proposed changes to this paragraph, it was the Department's intention to reference effluent standards in subchapter 12 of the NJPDES Rules, N.J.A.C. 7:14A-12 (see 41 N.J.R. 1571). Accordingly, the Department is revising the citation on adoption to correct the referenced citation from N.J.A.C. 7:14A-5.3 to N.J.A.C. 7:14A-12.7.

67. COMMENT: The rule proposal indicates that the Department will only require effluent limitations for phosphorus if a receiving water does not meet DO standards "and" it experiences abnormal DO swings "and" the biological metric applicable to the waterbody is impaired. However, the actual language in the proposed rule at N.J.A.C. 7:9B-1.14(d)5i replaces "and" with "or". N.J.A.C. 7:9B-1.14(d)5i should be revised to indicate that biological changes must be accompanied by dissolved oxygen criteria exceedance and excessive dissolved oxygen swing to trigger the criteria in ii and iii of the proposed rule. (4, 21)

RESPONSE TO COMMENT 67: As indicated in Response to Comments 43 through 50 the proposed changes to N.J.A.C. 7:9B-1.14(d)5 are not being adopted at this time. See 41 N.J.R. --- for the reproposed amendments to nutrient policies and criteria. The commenter's concern regarding replacing "and" with "or" is not accurate because the requirements are discussed as part of this rule proposal and the Methods Document. The enhanced assessment method described in the 2010 Integrated Water Quality Monitoring and Assessment Methods Document (Methods Document) uses a weight of evidence approach to evaluate whether phosphorus renders the waters unsuitable. (See (http://www.state.nj.us/dep/wms/bwqsa/). To make this determination, the Department evaluates dissolved oxygen and biological integrity and under certain conditions, periphyton biomass. The Methods Document includes a process to evaluate if phosphorus is the cause of aquatic life impairment, while N.J.A.C. 7:9B-1.5(g)3 describes nutrient-related responses that impair the aquatic life use.

68. COMMENT: The rule proposal should allow for an alternative to imposition of phosphorus criteria if a demonstration can be made that such an alternative will correct the biological

impairment, mitigate the DO impairment, or reduce the DO swing to a level that is not excessive. (4, 21)

RESPONSE TO COMMENT 68: The SWQS establish criteria to protect the designated uses. The SWQS do not specify how to achieve compliance with the criteria but the NJPDES rules, N.J.A.C. 7:14A, in accordance with the National Pollutant Discharge Elimination System (NPDES rules), 40 C.F.R. 122.44(d), require the Department to develop water quality-based effluent limitations based on these criteria and incorporate these limits in NJPDES permits. Facilities discharging to waters that do not meet the narrative criterion will receive water quality-based effluent limits based on the numeric criterion. The type of demonstration suggested by the commenter could not be considered in the development of effluent limits for an individual permit pursuant to NPDES rules. However, alternative mitigation procedures such as riparian restoration could be considered as a way to achieve compliance with a TMDL.

69. COMMENT: The commenter submitted the report "Ocean Water Quality in New Jersey: Redirecting the Management Effort." This report was sponsored by ten statewide and national environmental organizations, and it can be found online at http://www.shore11.org/files/Ocean_Water_Quality_in_New_Jersey_May_2009.pdf. This report defines concerns related to nitrogen and phosphorous standards in New Jersey waterways and the marine environment and is pertinent to the readoption and amendment of Surface Water Quality Standards. (3)

RESPONSE TO COMMENT 69: The Department has reviewed the report provided by the commenter. Many of the points made in the report are beyond the scope of the Surface Water Quality Standards. The report recommended that the Department should incorporate biological indicators into its coastal monitoring program and adopt numeric and narrative water quality criteria for saline waters similar to the approach used in freshwaters.

As required by the USEPA, the Department has developed a New Jersey Nutrient Criteria Enhancement Plan to document actions necessary to develop nutrient criteria in all waters, including the State's estuaries and near-shore ocean waters. See http://www.state.nj.us/dep/wms/bwqsa. The biological indicator for near-shore ocean waters is expected to be finalized in 2010 and a biological indicator for estuaries is expected to be finalized in 2012.

The report recommended that the Department also develop a NJPDES technical manual for nitrogen in estuarine and ocean waters similar to the existing technical manual for phosphorus in freshwaters. The Technical Manual for Phosphorus Evaluations for NJPDES Discharge to Surface Water Permits was issued by the Division of Water Quality to address concerns expressed by NJPDES permittees who received effluent limitations based on the numeric phosphorus criterion to provide the permittee the opportunity to demonstrate that the narrative nutrient criterion was met. The technical manual allows the facility to conduct a water quality study to evaluate whether phosphorus caused objectionable algal densities, nuisance aquatic vegetation, abnormal diurnal fluctuations in dissolved oxygen or pH, changes to the composition of aquatic ecosystems. The Department cannot commit to the development of a technical manual to address surface water discharges for nitrogen until the Department develops a scientifically defensible assessment method with response indicators and thresholds that demonstrate nutrient impact to coastal waters.

The Department's efforts to develop nutrient criteria are focused on the near-shore ocean waters and estuaries draining to the Atlantic Ocean from Sandy Hook to Cape May. As indicated in Response to Comments 52 through 56, the Department anticipates that it will be proposing revisions to N.J.A.C. 7:9B-1.5(g)1 to expand the applicability of the nutrient policies to coastal waters.

MIXING ZONES

70. COMMENT: Mixing zones should be eliminated. While at one time mixing zones were deemed acceptable, USEPA discourages their use. In the alternative, mixing zones should only be allowed in the most extreme of situations. Given the minimum improvement, if any, in our water quality, it is felt that removal of the mixing zones will speed the improvements. Further, the regulations permitting mixing zones do nothing to protect stationary life. Specifically, N.J.A.C. 7:9B-1.5(h)(1)(v) provides only for the protection of free swimming or drifting organisms. Stationary life is not protected even though stationary life is in all likelihood fed upon by transient life. Because of this, in some circumstances bioaccumulation occurs in these transient species.

By permitting mixing zones, the goals of water protection statutes cannot be approached. Mixing zones do nothing to improve the environment for the wildlife in New Jersey or its citizens. A vast majority of the waters designated as swimmable do not meet those goals. The water has not significantly improved in a five-year period of time and the pressures on our waterways are increasing by ever decreasing buffers, and increased urbanization of our land, resulting in increased non-point source pollution. Further, dischargers should be required to measure the discharges into the mixing zones so that the true extent of the impact can be measured and evaluated. Once this data has been collected, the impact on life in the mixing zone can then be analyzed to determine whether the mixing zone has a significant impact on the waterway. (13)

71. COMMENT: What is the justification for allowing such large mixing zones in trout maintenance waters? Where does this limitation come from? Is it justified based on the uses of the waters? Does the Department know/have data that mixing zones of this size will not result in lowering of water quality outside the mixing zone? The Department cannot allow a discharger to kill organisms in the mixing zone – how will this be ensured? (9)

RESPONSE TO COMMENTS 70 AND 71: The Federal Water Quality Standards Regulation, at 40 C.F.R. 131.13, provides that "States may, at their discretion, include in their state

standards, policies generally affecting their application and implementation, such as mixing zones." Mixing zones are areas within a surface waterbody at or near an outfall or discharge location where a facility discharges effluent for the purpose of mixing, dispersing, or dissipating effluent. Regulatory mixing zones provide initial dispersion and dissipation of the wastewater effluent in the receiving water at or near the discharge point, and are established on a case-by-case basis during the development of water quality-based effluent limits in the NJPDES permit pursuant to N.J.A.C. 7:14A. The Department requires the implementation of best management practices to address the discharge of pollutants from nonpoint sources rather than developing water quality-based effluent limits.

The Department has a longstanding policy of authorizing mixing zones in the Surface Water Quality Standards. As part of the 2002 revisions (34 N.J.R. 537(a), January 22, 2002), the Department adopted additional measures to restrict the use of regulatory mixing zones. N.J.A.C. 7:9B-1.5(h) establishes conditions that allow a mixing zone or prohibit the use of a mixing zone. Where a mixing zone is allowed, the discharge must meet the criteria at the edge of the mixing zone.

The Department believes that the mixing zone provisions appropriately restrict the size of heat dissipation areas in trout maintenance waters. Specifically, N.J.A.C. 7:9B-1.5(h)1vii limits the size of the area and volume of a waterbody assigned a regulatory mixing zone to that which will not adversely affect beneficial uses or interfere with biological communities or populations of important species, such as trout.

Traditionally, mixing zones have been limited to small portions of waterbodies in an effort to ensure that adverse impacts are avoided. N.J.A.C. 7:9B-1.5(h)1vii limits the physical dimension of the mixing zone and, therefore, also limits the area and number of stationary organisms that may be impacted by the discharge. Plumes of treated wastewater discharged to New Jersey's waters are either surface discharges or submerged discharges. Surface discharges are not expected to have significant impact on stationary life, as these discharges tend to remain in the water column above these stationary aquatic organisms. Submerged discharges are not

likely to impact stationary life because these discharges are generally at a higher temperature than the receiving waters. The discharge plume rises as it mixes with the receiving water, thus limiting any impact on stationary life on the bottom of the waterbody. In addition, N.J.A.C. 7:9B-1.5(h)5vii, indicates that mixing zones can not be authorized for new discharges of bioaccumulating pollutants.

72. COMMENT: N.J.A.C. 7:9B-1.5(h)(1)(vii)'s focus on important species is misguided on two accounts. First, it does not recognize that the CWA is for the benefit of all of nature. Second, it does not reflect that these unimportant species are the food sources for the important species. By not including the effects on "non-important" species, the chances of bioaccumulation of pollutants in the important species or other wildlife are increased. (13)

RESPONSE TO COMMENT 72: The mixing zone policy establishes when a mixing zone can be authorized and if a mixing zone can be allowed, limits the spatial extent to protect all species. The provision at N.J.A.C. 7:9B-1.5(h)(1)(vii) is an additional safety factor designed to specifically evaluate if the mixing zone could impact commercially and recreationally significant species, as well as Threatened and Endangered species.

73. COMMENT: How does the Department square the provisions in N.J.A.C. 7:14A-13.5(m) with the provisions of the proposal relating to mixing zones? (9)

RESPONSE TO COMMENT 73: The mixing zone provisions in the SWQS and the NJPDES provisions at N.J.A.C. 7:14A-13.5(m) are designed to protect aquatic life use. The use of a regulatory mixing zone for a permittee is authorized under N.J.A.C. 7:9B-1.5(h). N.J.A.C. 7:14A-13.5(m) addresses the development of effluent limits for pollutants present in the process intake water when industrial facilities use river water in their industrial process. One of the conditions in N.J.A.C. 7:14A-13.5(m) requires that "the pollutant shall not accumulate at the outfall location or at the edge of the mixing zone in such a way as to increase the concentration

of the pollutant." N.J.A.C. 7:14A-13.5(m) ensures that where effluent limitations are developed based on pollutants present in the intake water the aquatic community is adequately protected.

WATER QUALITY-BASED EFFLUENT LIMITS – N.J.A.C. 7:9B-1.6

74. COMMENT: The attempt to limit the antidegradation analysis only to new or expanded discharges, at N.J.A.C. 7.9B-1.6(b) violates the fundamental requirement that the Department restore, protect and maintain designated and existing uses. (9)

RESPONSE TO COMMENT 74: The antidegradation policies require that existing and designated uses shall be maintained and protected by maintaining existing water quality better than or equal to water quality criteria. Existing facilities are not required to conduct antidegradation analysis unless the facility requests an increase in permitted load. The renewal of a permit for an existing discharge at the same permitted load does not lower water quality. The NJPDES permit includes effluent limits designed to protect and maintain the existing or designated uses and is, therefore, consistent with the antidegradation policy.

75. COMMENT: The proposal incorporates by reference the generic NJPDES rule chapter citation, making it particularly difficult to weave together the various requirements that the Department now intends to incorporate into its SWQS. At a minimum, the individual code section citations should be referenced in the SWQS, for example, N.J.A.C. 7:14A-13.5, 13.6, or 13.7. (9)

RESPONSE TO COMMENT 75: The Department's rules identify and cross-reference to specific sections, when appropriate. For example, the SWQS rules cross-reference to N.J.A.C. 7:14A-13.6 regarding effluent limitations at N.J.A.C. 7:9B-1.5(e)5 and to N.J.A.C. 7:14A-6.4 regarding compliance schedules at N.J.A.C. 7:9B-1.5(e)6. However, a general citation is more appropriate where several subchapters and requirements of the referenced rule are to be addressed.

76. COMMENT: WQBELs for total dissolved solids (TDS) and nitrate should not be imposed on dischargers to streams with no possibility of being used as a water supply (due to size limitations, for instance). Such WQBELs would require expensive and unnecessary treatment on dischargers to waters that are too small to be used for potable sources. This is an enormous cost issue at a time when utilities are under the same economic pressures the Department is facing. The Department should add a policy stating that WQBELs for TDS and nitrate will only be imposed on dischargers upstream of potable water intakes, and should further state that the point of concern for such WQBEL calculations is the potable intake. (2)

RESPONSE TO COMMENT 76: The SWQS are established to protect high quality waters and to restore impaired waters. The Department acknowledges that only a limited number of FW2 waters are currently used for public potable water supplies. However, in order to protect water quality so that future public potable water supplies could be developed if necessary, the Department chose to designate all FW2 waters for the public potable water supply. As a result, the criteria for nitrate, TDS, as well as the criteria for toxics at N.J.A.C. 7:9B-1.14(f) must be met to protect the drinking water use. In accordance with the National Pollutant Discharge Elimination System, 40 C.F.R. 122.44(d), these criteria are used to develop WQBELs, for TDS and nitrate in NPDES permits. The SWQS provide options for permittees to pursue revisions to their water quality-based effluent limitations. The permittee can apply for a variance in accordance with N.J.A.C. 7:9B-1.8 and 1.9 or petition to modify the designed uses as provided at N.J.A.C. 7:9B-1.10.

77. COMMENT: The proposed amendments to N.J.A.C. 7:9B and N.J.A.C. 7:14A do not address the use of pollutant minimization plans (PMPs) to address parameters, such as mercury and PCBs, which are primarily derived through atmospheric deposition from sources outside of the treatment facility service area. It is appropriate to address these parameters (for example, mercury) via PMPs whenever the primary source of the parameter is beyond the control of the facility (for example, air deposition, ground water), the problem is regional, and secondary treatment does not adequately address the parameter. This same approach has been employed

for mercury in Minnesota and in the northeast states. The regulations concerning establishment of water quality-based effluent limitations at N.J.A.C. 7:9B-1.6 and N.J.A.C. 7:14A should be revised to authorize PMPs in these situations as an appropriate vehicle for implementing water quality-based requirements, where appropriate. (4)

RESPONSE TO COMMENT 77: The Surface Water Quality Standards establish the numeric and narrative conditions that, when attained, will support and protect the existing and designated uses. The use of pollutant minimization plans (PMP) is an appropriate regulatory mechanism to achieve compliance with water quality-based effluent limits imposed in NJPDES permits. Use of PMPs in appropriate circumstances is recognized in the NJPDES rules at N.J.A.C. 7:14A-11.13. However, as provided at N.J.A.C. 7:14A-11.13(d), the use of PMP is limited to control the discharge of PCBs into waters of the State.

PMPs are used to identify sources of pollutants. There are differences between PCBs and Mercury that has led the Department to approach them differently with regard to utilization of PMPs. PCBs are synthetic "legacy" pollutants that are no longer manufactured, at least not intentionally. The PMP approach lends itself well to PCBs where the Department is seeking to identify contributing sources to Publicly Owned Treatment Works (POTWs) or within industrial operations. Mercury on the other hand, is naturally occurring and is still in use. The Department has already identified that dental facilities using mercury amalgam contribute as much as 35 to 45 percent of the mercury entering POTWs. The other major source of mercury is air deposition from air sources and not covered by the NJPDES program. As a result, the Department has established best management practices and regulatory requirements at N.J.A.C. 7:14A-21.12 for owners of dental facilities that generate amalgam waste, including the installation and operation of amalgam separators.

The commenter indicated that Minnesota and the northeast states have used a PMPs approach for mercury. This is a condition of a TMDL and has not been included in their Water Quality Standards. On September 10, 2009, similar to the Northeast States, the Department

established a TMDL for mercury in those watersheds where the source of mercury is air deposition. See *Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide* (http://www.nj.gov/dep/watershedmgt/DOCS/TMDL/tmdl_mercury_huc14s.pdf).

78. COMMENT: N.J.A.C. 7:14A-13.5 pertains to the determination that the Department must make before establishing a WQBEL. N.J.A.C. 7:14A-13.5 appears to be directed at excursions of specific numeric criterion for individual pollutants or parameters, and does not provide any guidance as to determining the reasonable potential to cause an excursion of a narrative criterion. This is an overly narrow set of guidelines and entirely fails to establish the mechanism for determining the need for WQBELs to meet all of the SWQS. It is somewhat in conflict with N.J.A.C. 7:14A-13.7(a), which addresses the determination of WQBELs in the cases of excursions of narrative criterion. (9)

RESPONSE TO COMMENT 78: The requirements of N.J.A.C. 7:14A-13.5 are directed to excursions of any Surface Water Quality Standard, which includes those that are either narrative or numeric in nature.

The provisions of N.J.A.C. 7:14A-13.7(a) are based on those requirements identified at 40 C.F.R. 122.44(d)(1)(vi) and, as indicated in the comment, only provide guidance on circumstances where the "Department has not established a numeric water quality criterion for a specific chemical pollutant but has determined that such a pollutant is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion or potential excursion above a narrative criterion in the Surface Water Quality Standards…" However, as indicated in Section 3.3.8 of the USEPA Technical Support Document For Water Quality-based Toxics Control (EPA/505/2-90-001) ("TSD"), "Although the provisions of 40 C.F.R. 122.44(d)(1)(vi) are presented in the regulation in the context of permit limit development, these same considerations should be applied in characterizing effluents in order to determine whether limits are necessary." The considerations in which the guidance document is

referring to resemble those which are identified at N.J.A.C. 7:14A-13.7(a) which include the calculation of numeric criterion using best available scientific information and in accordance with N.J.A.C. 7:9B-1.6(c)4iii or the use of surrogate parameters for the pollutant of interest. In addition, for a parameter such as WET, the Department has utilized the recommendations of section 2.3.3. of the USEPA's TSD to provide a numeric interpretation of the narrative water quality standard for toxicity identified at N.J.A.C. 7:9B-1.14(d) (see Response to Comments 13-74 through 13-89, 29 N.J.R. 1861 (May 5, 1997)).

The USEPA TSD guidance document has long been utilized by the Department in determining the need for, and calculation of, WQBELs. In addition, the Department believes that the existing regulations at N.J.A.C. 7:14A provide sufficient flexibility in utilizing the recommendations of the USEPA to determine the need for water quality-based effluent limitations based on narrative as well as numeric criterion (refer to N.J.A.C. 7:14A-6.3(a) and 13).

79. COMMENT: The exclusion of site remediation contaminants from the scope of review under N.J.A.C. 7:14A-13.5(m)8 appears to flout the requirement that the Department make the reasonable potential determination under the Clean Water Act. By virtue of the incorporation of this provision by reference into the proposal, the Department renders its proposal unlawful. (9)

RESPONSE TO COMMENT 79: The Department is adopting the proposed provision at N.J.A.C. 7:9B-1.6(a) which states that water quality-based effluent limitations are developed in accordance with N.J.A.C. 7:14A. N.J.A.C. 7:14A-13.5(m) sets forth the procedures which the Department uses to evaluate, on a site-specific basis whether a discharge causes, has the reasonable potential to cause, or contributes to an excursion above the surface water quality standards when the pollutant of concern is found in the intake water for the facility. Under the context of site remediation projects, N.J.A.C. 7:14A-13.5(m)8 indicates that the provisions of the subsection are only applicable to those pollutants that are not subject to remediation. In other words, N.J.A.C. 7:14A-13.5(m)8 provides that, for site remediation projects, no intake credit will

be given for pollutants for which remediation is necessary. Rather, the need for effluent limitations is evaluated consistent with the provisions at N.J.A.C. 7:14A-13.5(a) through (l) and 13.3(c)4. As such, the requirements regarding reasonable potential determinations under the Clean Water Act are fully supported by N.J.A.C. 7:14A-13.5(m)8.

80. COMMENT: A review of the NJPDES rules in the context of the proposal raises a number of questions. Is the cross reference in N.J.A.C. 7:14A-13.5 to N.J.A.C. 7:9B-1.5(c)4 correct? In N.J.A.C. 7:14A-13.7(a)1, is the reference to N.J.A.C. 7:9B-1.6(c)4iii correct? (9)

RESPONSE TO COMMENT 80: The Department acknowledges that the identified cross references are incorrect at N.J.A.C. 7:14A-13.5(c) and N.J.A.C. 7:14A-13.7(a)1. Amendments to these cross references were inadvertently omitted when the NJPDES rules were readopted on January 5, 2009, 41 N.J.R. 142(a). Changes to the NJPDES rule are being made as part of this adoption to correct the cross references at N.J.A.C. 7:14A-13.5(c) to N.J.A.C. 7:9B-1.5(h) and at N.J.A.C. 7:14A-13.7(a)1 to N.J.A.C. 7:9B-1.5(c)5.

81. COMMENT: The Department's continued approval of degradation of waters based upon economic and social criteria is of concern. There is nothing in the rules which sets forth how these economic and social considerations are to be evaluated in N.J.A.C. 7:9B-1.6(b). Without standards in place, this process can be subject to abuse and arbitrary and capricious decisions. (13)

RESPONSE TO COMMENT 81: N.J.A.C. 7:9B-1.6 explains how water quality-based effluent limits are developed for NJPDES permits. N.J.A.C. 7:9B-1.6(b) simply indicates that effluent limits developed for a new or expanded discharge based on the approved antidegradation analysis are a type of water quality-based effluent limit. The requirements for an antidegradation analysis and the process to evaluate social and economic impact are included in the Water Quality Management Planning rules at N.J.A.C. 7:15-5.25. (see Response to Comment 39).

82. COMMENT: N.J.A.C. 7:9B-1.6(d) provides for compliance schedules to meet new permit limits and replaces the old language that limited compliance periods to three years. The preamble discussion acknowledges that certain modifications may require more than five years to complete. The rule proposal should specifically acknowledge that compliance schedules may exceed the life of the permit (for example, five years) to avoid confusion down the road. The USEPA now allows such extended schedules to be placed in permits and this avoids the need to utilize compliance orders. (4)

83. COMMENT: The proposal to allow for five years or more for a facility to come into compliance is not acceptable. As the Department is aware, permits expire after five years. This provision would allow a facility to fail to comply with water quality standards for the entire length of their permit and potentially for longer. Additionally, the proposed rule does not set forth any standard or requirements that a facility must demonstrate prior to receiving a reprieve from meeting water standards. (13)

RESPONSE TO COMMENTS 82 AND 83: The length of compliance schedules provided to NJPDES dischargers to come into compliance with water quality-based effluent limitations is consistent with the policies deemed acceptable by the USEPA in satisfying the goals of the Clean Water Act. The Department must include interim requirements and dates for achieving those requirements in any NJPDES permit with a compliance schedule more than one year. As indicated in the May 10, 2007 memorandum from James A. Hanlon, Director of the Office of Wastewater Management, to Alexis Strauss, Director of the Water Division in EPA Region 9, with subject “Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits”, compliance schedules longer than the permit duration (five years) are allowed. If the Department authorizes a compliance schedule that extends past the expiration date of the permit, the permit must include final effluent limitations to ensure “enforceability of the compliance schedule as required by CWA section 502(17), and the National Pollutant Discharge Elimination System, 40 C.F.R. 122.2 (definition of schedule of compliance)." The allowance of compliance schedules to extend past the expiration date of the permit is further supported in September 29,

2009 correspondence from Jon M. Capacasa, Director of USEPA Region 3 Water Protection Division and Kevin Bricke, Acting Director of USEPA Region 2 Division of Environmental Protection and Planning, to Carol Collier, Executive Director of the Delaware River Basin Commission. In this letter, USEPA recognizes that "the Clean Water Act (CWA) does not limit compliance schedules to the five-year permit term where a longer period is necessary and consistent with the CWA and NPDES Program regulations." As indicated in the summary of the proposal, (see 41 N.J.R. 1576), the length of the compliance schedule is permit-specific and depends on what the facility must actually do to achieve compliance with the new water quality-based effluent limitation. Accordingly, the Department believes that the compliance schedule provisions at N.J.A.C. 7:9B-1.6(d) and N.J.A.C. 7:14A-6.4 provide adequate flexibility in establishing the length of such compliance schedules, which may in fact exceed the five-year duration of the permit, on a site-specific basis.

84. COMMENT: Pursuant to 40 C.F.R. 131.38(e)(8), compliance schedule authorization expressly expired on May 18, 2005, depriving the State with any authority to issue compliance schedules delaying the effective date of such WQBELs. Indeed, the USEPA Federal Register Preamble accompanying the rule stated as much, noting, "USEPA has chosen to promulgate the rule with a sunset provision which states that the authorizing compliance schedule provision will cease or sunset on May 18, 2005." Further, USEPA has not stayed 40 C.F.R. 131.38(e)(8) by the only means it can lawfully do so: notice and comment rulemaking that amends 40 C.F.R. 131.38(e)(8). Without such a rulemaking, 40 C.F.R. 131.38(e)(8) remains the law and it unequivocally ends authorization to issue compliance schedules after May 18, 2000. *See Friends of the Earth, Inc. v. Environmental Protection Agency*, 446 F.3d 140 (D.C. Cir. 2006). (9)

RESPONSE TO COMMENT 84: 40 C.F.R. 131.38 established criteria for priority toxic pollutants for the State of California and is only applicable to the State of California. States may establish compliance schedules in NPDES permits if compliance schedules are authorized in the state's Water Quality Standards pursuant to Section 303(e) of the Federal Clean Water Act. Since the Department had adopted a provision to authorize compliance schedules which is now

recodifed in the Surface Water Quality Standards at N.J.A.C. 7:9B-1.6(d), the Department can include a compliance schedule in NJPDES permits. As indicated in Response to Comments 82 and 83, the USEPA has recently reaffirmed the use of compliance schedules in NJPDES permits in achieving the goals of the CWA.

85. COMMENT: The Clean Water Act mandates that: "there shall be achieved . . . not later than July 1, 1977, any more stringent limitations, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations . . . or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this chapter." CWA 301(b)(1)(C), 33 U.S.C. 1311(b)(1)(C). Despite this unambiguous, 29-year-old statutory deadline for achieving WQBELs, the proposal includes new language purporting to authorize the Department to the use of compliance schedules in permits to allow the permittee time to comply with new effluent limitations. In so doing, the proposal provides an extension for meeting WQBELs that extends far beyond the statutory deadline in CWA section 301(b)(1)(C) for achieving WQBELs.. This approach is blatantly illegal and undermines the letter, goals and purposes of the Clean Water Act. (9)

RESPONSE TO COMMENT 85: In a May 10, 2007 memorandum from James A. Hanlon, Director of the Office of Wastewater Management, USEPA, to Alexis Strauss, Director of the Water Division in EPA Region 9, with subject "Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits", USEPA provides a framework for the use of compliance schedules consistent with the Clean Water Act and its implementing regulations. As indicated in the memorandum, "*In The Matter of Star-Kist Caribe, Inc.*, 3 E.A.D. 172, 175, 177 (1990), the EPA Administrator interpreted section 301(b)(1)(c) of the CWA to mean that 1) after July 1, 1977, permits must require immediate compliance with (i.e. may not contain compliance schedules for) effluent limitations based on water quality standards adopted before July 1, 1977, and 2) compliance schedules are allowed for effluent limitations based on standards adopted after that date only if the State has clearly indicated in its water quality standards or

implementing regulations that it intends to allow them." This framework for the allowance of compliance schedules has been, and continues to be, reflected at N.J.A.C. 7:9B-1.5(e)6. In addition, the Department's use of compliance schedules in implementing the NJPDES program has historically been authorized by N.J.A.C. 7:14A-6.4 and 40 C.F.R. 122.47. Therefore, the Department has concluded that the application of compliance schedules subsequent to July 1, 1977 is consistent with the goals and purposes of the Clean Water Act, as interpreted by the USEPA.

CLORINE PRODUCED OXIDANTS - N.J.A.C. 7.9B-1.6(c)

86. COMMENT: The readoption of N.J.A.C. 7.9B-1.6(c) that allows for a high chlorine produced oxidants level is completely unacceptable and must be revised as it does not protect aquatic life or water quality. It is unclear why the Department would allow a maximum concentration of 200 µg/L (micrograms per liter) of chlorine produced oxidants ("CPO") in the effluent of non-contact cooling water when the State's acute and chronic surface water quality criteria is 13 µg/L and 7.5 µg/L, respectively. Please explain the justification for this and include references to scientific studies. (9)

RESPONSE TO COMMENT 86: The requirements of N.J.A.C. 7:9B-1.6(c) are predicated on the Steam Electric Effluent Limitation Guidelines at 40 C.F.R. 423.13(b)(1). As such, this provision is intended for the limited number of Steam Electric facilities within the State of New Jersey. In addition, generally speaking, facilities in New Jersey that are eligible under the Steam Electric Effluent Limitation Guidelines are on large waterbodies with significant dilution credit. Furthermore, for a facility to qualify for the maximum technology-based effluent limitation of 0.2 mg/L at N.J.A.C. 7:9B-1.6(c)3, the facility must also concurrently comply with the requirements of N.J.A.C. 7:9B-1.6(c)1 and 2. More specifically, the "aquatic community of a waterbody must be exposed to one or more point source dischargers of non-contact cooling water that is intermittently chlorinated to control condenser biofouling" and "the total period of such exposure to chlorinated wastewater is two hours per day or less." Because the technology-based limit of 0.2 mg/L is coupled with the operational condition limiting the permittee to chlorination

during only two hours per day, in most cases the technology-based limit is more stringent than any WQBEL since the WQBEL is based on continuous chlorination. The Department requires Steam Electric facilities to minimize the use of chlorine.

87. COMMENT: The Department should prohibit the use of mixing zones for chlorine and require ocean dischargers to meet the SWQS for CPO at the end-of-the-pipe. Chlorine residual can be acutely toxic within minutes of exposure to fish and other aquatic life. This concept is supported by a recent proposal by the State of California to prohibit mixing zones for chlorine residuals, because CPOs are "acutely toxic to aquatic life" and "any amount of chlorine without neutralization prior to discharge into surface waters, bays and estuaries may increase the potential of downstream fish kills and harm to aquatic biota." California is requiring chlorine residual objectives to be met at the end-of-pipe. (9)

RESPONSE TO COMMENT 87: Pursuant to 40 C.F.R. 131.13, states may establish provisions that authorize the use of mixing zones in the development of water quality-based effluent limitations. The Department proposed to readopt the existing mixing zones provisions with a new prohibition for E. coli. For ocean dischargers, the Department prohibits mixing zones for indicators of bacterial quality, including enterococcus, and for new discharges of pollutants that bioaccumulate. These prohibitions are designed to protect public health. Since the criteria for chlorine produced oxidants (CPO) is intended to protect acute and chronic aquatic life impacts, the Department has determined that a prohibition of a mixing zone is not appropriate. The SWQS provide additional protections that restrict the size of the mixing zone, including a restriction on the spatial extent of the approved mixing zone to assure that significant mortality does not occur to free swimming or drifting organisms.

Review of California's proposal cited in the above comment indicates that mixing zones are, in fact, not strictly prohibited for chlorine residuals as the commenter suggests. As identified in the Draft policy entitled *Total Residual Chlorine and Chlorine-Produced Oxidants Policy of California*, dated June 2006 and prepared by the Division of Water Quality of the

California Environmental Protection Agency, "To the extent authorized by the applicable Basin Plan, a permitting authority may grant a mixing zone for a discharge of Total Residual Chlorine (TRC) or CPO. Allowance of a mixing zone is discretionary. If a Regional Water Board grants a mixing zone, the objectives for TRC and CPO shall be met throughout the receiving water except within the mixing zone."

PROCEDURES FOR MODIFYING WATER QUALITY-BASED EFFLUENT LIMITS - N.J.A.C. 7:9B-1.8 and 1.9

88. COMMENT: Although the Department claims there is no change to the method for modifying WQBELs, contained in N.J.A.C. 7:9B-1.8 and 1.9, there appear to be modification provisions buried in the NJPDES rules at N.J.A.C. 7:14A-13.5(k). Please explain how these provisions interact, where they are inconsistent, or why the Department believes them to be consistent. (9)

RESPONSE TO COMMENT 88: These provisions are designed for two very different purposes. N.J.A.C. 7:9B-1.8 and 1.9 describe the process to follow if an applicant wishes to seek a "less stringent" water quality-based effluent limit for a particular parameter. The revised effluent limit would allow the facility to discharge and cause a violation of the applicable criteria, provided N.J.A.C. 7:9B-1.8 and 1.9 are satisfied consistent with 40 C.F.R. 131.10(g). This modification of WQBELs is commonly referred to as a "variance". Additional information regarding variances can be found at N.J.A.C. 7:14A-11.7 through 11.11. N.J.A.C. 7:14A-13.5(k) allows for the removal of an existing WQBEL when the Department has concluded that a discharge does not cause, have reasonable potential to cause or contribute to an excursion above the water quality standards for a specific pollutant or pollutant parameter provided that "the permittee demonstrates to the satisfaction of the Department that a water quality-based limitation is no longer required and that the existing effluent quality is anticipated to be maintained." In contrast to N.J.A.C. 7:9B-1.8 and 1.9, N.J.A.C. 7:14A-13.5(k) continues to ensure that the discharge does not and will not cause a violation of the applicable criteria. Examples under which N.J.A.C. 7:14A-13.5(k) would be applicable include, but are not limited to, situations

where a parameter is no longer contained in a facility's untreated influent or a compound is no longer used in a facility's manufacturing operation.

SURFACE WATER QUALITY CRITERIA - N.J.A.C. 7:9B-1.14

89. COMMENT: Language included at N.J.A.C. 7:9B-1.14(b)(2) is confusing. Reference to "discharges" is problematic because water quality criteria apply to waterbodies, not sources of pollution. As written, this provision could be taken to mean that lowering of water quality of PL waters due to nonpoint sources is irrelevant to determining whether high water quality of PL waters is properly maintained. Also, all water quality criteria should apply, not just ones as of nearly 30 years ago. Water quality-based discharge limits applicable to point sources as of March 1981 should also remain in effect. All such language should be deleted, so as to make clear that attainment of water quality criteria is to be measured against the condition of a waterbody, regardless of what sources of pollutants might affect the water. What is the effect of N.J.A.C. 7:9B-1.14(b)(2)i. and ii? (10, 17, 20, 22)

RESPONSE TO COMMENT 89: The intent of N.J.A.C. 7:9B-1.14(b)2 is to identify the water quality criteria, described as "discharge criteria", used to develop effluent limitations for facilities authorized to discharge to PL waters. Pursuant to N.J.A.C. 7:9B-1.14(b)2i, existing NJPDES facilities authorized to continue discharging to PL waters are assigned effluent limits to meet the nitrate and pH criteria listed at N.J.A.C. 7:9B-1.14(b)1i and ii. The Department revised N.J.A.C. 7:9B-1.14(b)2ii in 1993 (see 36 N.J.R. 5569(a), December 6, 1993) to utilize the updated phosphorus and toxics criteria rather than the water quality criteria established in 1981. N.J.A.C. 7:9B-1.14(b)2ii was revised again in 2006 (see 38 N.J.R. 4449(a), October 16, 2006) to incorporate the use of the new bacterial indicators. The Department uses best management practices to address nonpoint sources of pollution.

90. COMMENT: The USEPA has finalized the freshwater copper Biotic Ligand Model (BLM) and approved its use as appropriate and protective. When the necessary site-specific data are available, the BLM should be used to directly recalculate site-specific metals standards similar to

the Water Effect Ration (WER) procedure. The Department should update its water quality standards to indicate that site-specific standards may be derived through use of an adjustment similar to the WER adjustment provided for metals in the current regulations. In the preamble to the proposed rule (N.J.A.C. 7:9B-1.14(g) Site-specific criteria), the Department recognizes the BLM model for copper but notes that water quality standards will only be revised through formal rulemaking following review and approval of the BLM approach. Such an approach is unnecessary and subject to delay. The Department should update its water quality standards to indicate that site-specific standards may be derived through use of an USEPA-approved BLM model similar to the WER adjustment provided for metals in the current regulations. (4)

RESPONSE TO COMMENT 90: The BLM requires extensive water quality data to develop an appropriate copper criterion applicable to an individual waterbody. Therefore, the Department retained the existing Statewide criteria. The Department indicated (see 41 N.J.R. 1576) that interested parties could collect the water quality data necessary to develop a site-specific copper freshwater criteria utilizing the USEPA recommended Biotic Ligand Model and the Department will review and revise through formal rulemaking a new site-specific copper criteria, where applicable. The SWQS at N.J.A.C. 7:9B-1.5(a)6 indicate that, 'where existing criteria are inadequate to support the existing or designated uses, the criteria shall be changed to support the existing uses.' The Department has the general authority to develop site-specific criteria under this provision and does not feel the need to include options to develop copper criteria using BLM. Site-specific criteria may also be developed through the TMDL process using the BLM method, which will be incorporated in the SWQS at N.J.A.C. 7:9B-1.14(g).

pH – N.J.A.C. 7:9B-1.14(d)4

91. COMMENT: It is well known that pH increases with increasing salinity and that the ocean pH is 8.1. Therefore, the criterion for SE, which has a lower salinity and pH, would be more than protective for SC waters. Other states, such as Massachusetts, have this pH range as part of their criteria for marine and ocean waters. (9)

92. COMMENT: The USEPA is considering the serious problem of ocean acidification during its review of water quality criteria under the Clean Water Act. The commenter supports USEPA's movement in this area and calls on the Department to engage in data and information collection and to adopt stringent water quality criteria that adequately protect marine life from ocean acidification. The Department should strengthen its water quality criteria to ensure the maintenance and protection of ocean life and habitat. (9)

RESPONSE TO COMMENTS 91 AND 92: The Department's adopted pH criteria for SC waters states that "natural conditions shall prevail" rather than a pH range as adopted for other stream classifications. At this time, the USEPA is soliciting additional pertinent data or scientific information that may be useful in addressing ocean acidification. The USEPA has also notified the public of its intent to review the current aquatic life criterion for marine pH to determine if a revision is warranted to protect the marine designated uses of states and territories pursuant to Clean Water Act 304(a)(1) (Fed. Reg. 74:17484, April 15, 2009). Once USEPA completes its review, the Department plans to revise its pH criteria to reflect any new USEPA recommendation.

93. COMMENT: The new pH criterion for freshwaters in areas with acidic soils and/or near the Pinelands is logical. However, the scientific justification was not provided in any detail or with any recent references. What was the extent of pineland coverage prior to human settlement? Also, increased acidity due to atmospheric deposition was not mentioned. How is it known that low pH conditions are due to only soil conditions and not also due to acidic atmospheric deposition, such as identified by the National Atmospheric Deposition Network, which indicates elevated levels of acidic deposition for the Mid-Atlantic and Northeast regions? (9)

RESPONSE TO COMMENT 93: The Department re-evaluated all historic stream pH data up to 2007. Additional monitoring was conducted in 2007 to address spatial gaps in areas where no data was previously collected. The data was then evaluated against various GIS coverages to

identify possible patterns. The work was presented at the 2008 National Water Quality Monitoring Conference in Atlantic City.

There is no known research that has determined the true extent of the Pinelands prior to human settlement. The Department can only rely on the earliest known studies such as Harshberger's (Vegetation of the New Jersey Pine Barrens; An Ecological Investigation, 1916). Although there may well be acidification of New Jersey waters due to atmospheric deposition, studies conducted by USGS have shown both increasing and decreasing trends in stream water pH associated with various anthropogenic effects (Associations Between Water-Quality Trends In New Jersey Streams and Drainage Basin Characteristics, 1975-1986, USGS Water-Resources Investigations Report 96-4119). Upward trends were associated with urban land-use, while decreasing trends were associated with agricultural land-use. In a second trend report, pH levels Statewide were either stable or increasing rather than decreasing. (Trends in Water Quality of New Jersey Streams, Water Years 1986-1995, USGS Water-Resources Investigations Report 98-4204). This suggests that effects from atmospheric deposition may not be as important as anthropogenic sources.

94. COMMENT: The additional pH criteria range for waters outside the Pinelands addresses the obvious problem of streams automatically being in violation of the pH criteria when they flow out of the Pinelands. However, there will still be areas in New Jersey that violate the pH criteria due to natural conditions. For example, Barclay Brook in Monmouth County routinely exhibits pH values under 4.0 standard units (s.u.). The alternate range selected by the Department (4.5 to 7.5) is not wrong, but there will still be exceptions.

In addition, the Department has set the pH criteria range of 4.5 to 7.5 s.u. for all waters listed at N.J.A.C. 7:9B-1.15(c), (e), and (h). Unfortunately, some portions of the waters listed in these tables do not exhibit naturally low pH. For example, (h) lists the Millstone River. While the upper portion on the Millstone River exhibits naturally low pH (above Hightstown), the lower part of the river in Plainsboro and below Carnegie Lake certainly does not exhibit

naturally low pH. If the Department is going to utilize the approach of listing specific streams for different pH criteria, it must carefully evaluate available data (from 303d list and recent TMDL studies) to determine appropriate break points. (2)

RESPONSE TO COMMENT 94: The Department is aware of a number of streams which will undoubtedly exhibit pH levels below 4.5 due to natural conditions. Barclay Brook is one of them. N.J.A.C. 7:9B-1.5(c)1 indicates that natural water quality shall be used in place of the promulgated water quality criteria. The Department does not list streams that exhibit low pH levels, due to natural conditions, as violations in its Water Quality Limited Waters or the 303(d) Listed Waters. Only four percent of all data evaluated (including data from the Millstone and nearby streams) in the coastal plain exhibited pH levels above 7.5. The Department is also aware that there may be few locations with pH levels below 4.5 and above 8.5. The Department intends to utilize all available water quality data to revise pH criteria to reflect site-specific conditions.

95. COMMENT: Given that regulated NJPDES discharges are not permitted to discharge highly acidic effluent, perhaps the low pH criterion should be removed altogether. Alternatively, the Department should add language, similar to the temperature criteria, which states that "no acidic alterations which would cause pH to decrease below" the minimum criterion and "no basic alterations which would cause pH to increase above" the maximum criterion shall be allowed. (2)

RESPONSE TO COMMENT 95: The Department is adopting a pH range applicable to waterbodies in the Lower Delaware River Basin, the Lower Raritan River Basin, and the Atlantic Coastal Basin. This new pH criterion is necessary to protect the aquatic life use in these waters without consideration of any anthropogenic impacts. The applicability of the SWQS is not limited to NJPDES dischargers. The SWQS are also utilized by the Department's Site Remediation Program (N.J.A.C. 7:26E) to ensure discharges flowing to surface water comply with the SWQS. The Land Use Regulation Program, through the Freshwater Wetlands Program

(N.J.A.C. 7:7A), the Coastal Permitting Program Rules (N.J.A.C. 7:7), Coastal Zone Management (N.J.A.C. 7:7E), and the Flood Hazard Area Control Act Rules (N.J.A.C. 7:13), also utilizes the SWQS to establish permit requirements. To protect the designated uses of receiving water bodies, NJPDES dischargers may be required to comply with minimum pH effluent limitations lower than those contained at N.J.A.C. 7:14A-12.2(f) or in the permittee's existing NJPDES permit. While NJPDES dischargers can have a dominant impact in some waters, natural conditions (such as acidifying soils) can also have a significant impact upon in-stream pH. The commenter suggested that the Department add language similar to that included in the temperature criteria at N.J.A.C. 7:9B-1.14(d)11 to address anthropogenic impacts. However, based on the comments received on the temperature criteria, the Department has determined that it is appropriate to delete "No thermal alteration which would cause temperatures to exceed" from the temperature criteria as the criteria are established to specify the levels necessary to protect the uses. See Response to Comment 103.

96. COMMENT: The pH criteria need specificity regarding time scale. Is a daily maximum intended? Observed pH conditions outside the criteria range should only be considered a violation if an alteration is identified, such as an acidic point source or excessive productivity. (2)

RESPONSE TO COMMENT 96: The Department agrees with the commenter that an averaging period is needed for pH for the purpose of evaluating compliance. Generally, water quality assessments are based on instantaneous measurements (grab samples). However, new monitoring capabilities can record pH measurements on a continuous basis. Where continuous monitoring is available, the pH range must be exceeded for a minimum of one hour to be considered as an exceedence of the water quality criteria as indicated in the Methods Document. Where instantaneous measurements (grab samples) are outside the pH range, that measurement will be considered an exceedence of the water quality criteria. Although continuous monitoring data is preferred, both types of data can be used to identify a waterbody as impaired on the List of Water Quality Limited Waters. All waters with pH values outside the acceptable range are

listed on the List of Impaired Waters, not just those waters where a point source or excessive productivity is identified as recommended by the commenter.

97. COMMENT: It is important to note that the Department's proposed alternative pH criteria transcends the FW2 waters to which the proposed amendment would apply and should be considered on a broader basis in the Department's future reevaluation of pH criteria. Moreover, in addition, to addressing the impact of naturally occurring conditions on pH levels, the Department's future reevaluation of pH criteria should address other situations where proposed pH criteria may be unnecessarily restrictive. In such situations, consideration of data on the effects of pH on freshwater and saltwater species using USEPA approved toxicity tests can help to avoid overly restrictive pH criteria. (5)

RESPONSE TO COMMENT 97: The Department does not believe that the proposed criterion is less restrictive, but is more representative of natural conditions of the selected area, and protects native flora and fauna. A less restrictive criterion could result in the displacement of indigenous species by more opportunistic species from nearby areas.

98. COMMENT: Surface water quality criteria for FW2 waters are specified at N.J.A.C. 7:9B-1.14(d). These criteria include several interrelated parameters associated with Total Dissolved Solids (TDS): chloride, sulfate, and other dissolved solids. The TDS standard includes two provisions: (i) No increase in background which may adversely affect the survival, growth or propagation of the aquatic biota and (ii) No increase in background which would interfere with the designated or existing uses, or 500 mg/L, whichever is more stringent. The latter criterion is evaluated as a maximum concentration. TDS is primarily composed of carbonate, chloride and sulfate anions along with their companion cations (for example, sodium, calcium, magnesium). The regulations also include criteria for sulfate (250 mg/L, maximum) and chloride (860 mg/L acute, 230 mg/L chronic, 250 mg/L human health). These criteria are internally inconsistent as the primary components of TDS (chloride, sulfate) could exceed the TDS criteria without resulting in adverse biotic effects.

More recently, new data have been developed to evaluate the toxicity of chloride and sulfate to freshwater organisms by the Iowa Department of Natural Resources in accordance with USEPA's Guidelines for developing water quality criteria (Stephan et al. (1985)). The new information was developed with oversight from USEPA's Duluth laboratory. These documents, including Iowa DNR's "Revising Criteria for Chloride, Sulfate and Total Dissolved Solids" and "Chloride Toxicity Test Results", were submitted by the commenter. The commenter requests that the Department revise its TDS water quality standard in line with the approach taken by Iowa. (4)

RESPONSE TO COMMENT 98: The Department's current TDS criteria includes a provision, which prohibits increases that would result in background TDS concentration which would exceed 500 mg/L. The 500 mg/L maximum was selected to protect the drinking water use, not the aquatic life use. The information provided by the commenter explains how the State of Iowa addressed the aquatic life use. Since the Department addresses the aquatic life use through the application of whole-effluent toxicity (WET) testing, adoption of standards paralleling those utilized in Iowa is not necessary. However, the Department is evaluating whether the TDS criteria for human health should be replaced with criteria for chloride and sodium to better protect public health. If it is determined that a change is appropriate, that change would be proposed in a future proposal.

TEMPERATURE

99. COMMENT: The commenter applauds the Department for adding the daily maximum temperature as a necessary check. (9)

100. COMMENT: The decision to express the temperature criteria as daily and weekly maximum makes sense. (2)

RESPONSE TO COMMENTS 99 AND 100: The Department acknowledges the commenters' support.

101. COMMENT: There should be a mechanism in place to downgrade streams that do not meet the temperature criteria due to natural conditions. While some streams may exhibit a degraded canopy corridor or a thermal discharge, many wide, shallow streams will exhibit high temperature simply due to the natural impact of solar radiation. If these temperatures are causing a violation of the applicable trout criteria, for example, then the waterbody is obviously not supportive of the use and should be downgraded accordingly. (2)

102. COMMENT: The Department historically has classified FW2-TP waters as Category One waters. Now the Department is proposing alternate thermal alteration limits for FW2-TM waters that are significantly higher than the requirements for FW2-TP waters. This revision to the temperature standard should not serve as the basis for claiming that waters now meeting the new TM temperature value be designated as Category One. The rule proposal should specifically indicate that compliance with the thermal alteration requirements for FW2-TM waters does not justify reclassification of those waters to Category One status. (4)

RESPONSE TO COMMENTS 101 AND 102: New Jersey's streams are classified based upon the fish species inhabiting a particular waterway. Stream sampling (fish survey) data are used by the Department to determine whether a waterway should be classified to protect the trout production (TP) or trout maintenance (TM) uses. When waterbodies are surveyed and found to have naturally reproduced trout in their first year of life (young of the year or YOY), they are classified as trout production waters or FW2-TP. When adult trout are found in a waterbody, and YOY trout are absent, the classification of the stream as trout maintenance (FW2-TM) or nontrout (FW2-NT) depends upon the stream's total fish population. Streams are not classified on the basis of meeting or not meeting temperature criteria.

Waterbodies where temperature criteria are not met will be listed as impaired. TMDLs are established to determine actions needed to meet temperature criteria for the impaired waterbodies. If the Department cannot identify or implement actions to restore the temperature such that the criteria are met, the Department could develop site-specific temperature criteria to protect the resident fish species, or conduct a use attainability analysis to determine the appropriate designated uses for the waterbody.

Meeting the new TM temperature criteria is not a basis for designating a waterbody as Category One. The Department has established definitions for Category One waters, Exceptional ecological significance, Exceptional fisheries resource(s), and Exceptional water supply significance at N.J.A.C. 7:9B-1.4. As indicated in the May 21, 2007 proposal that incorporated these definitions into the rules at 39 N.J.R. 1846, these definitions describe the data and criteria utilized to identify waterbodies that qualify for consideration for upgrade to Category One designation. Under exceptional ecological significance, waters can be designated as Category One using two different criteria, exceptional aquatic community and threatened and endangered species. Under exceptional aquatic community, the Department requires that in addition to meeting nonnimpaired benthic macroinvertebrate rating, the waterbody must also meet two of the following factors: optimal instream habitat; excellent fish community; water quality criteria for dissolved oxygen, temperature, total phosphorus, and total suspended solids; or low impervious surface. Therefore, meeting temperature criteria is only a small part of a wide range of requirements needed before a waterbody qualifies for consideration for a Category One designation. Meeting temperature criteria alone is not sufficient to designate a waterbody as Category One.

103. COMMENT: The Department proposed a criterion for FW2-TP waterways of 22 ºC as a daily maximum water temperature and a criterion of 19 ºC for the seven-day rolling average of the daily maximum water temperature. These temperatures were chosen to be sufficiently protective of brook trout, the most sensitive trout species. The criterion proposed for FW2-TM waterways of 25 ºC for a daily maximum temperature and 23 ºC as a seven-day rolling average

of the daily maximum water temperature, is only protective of brown trout, the least sensitive of the three trout species. The Department attempts to justify this by stating that "When summer water temperatures approach levels that are stressful for trout, these coldwater fish seek areas of thermal refuge."

Despite allowing temperatures that are lethal to brook trout, the Department suggests that trout and other aquatic species will seek and find thermal refuges in these waterways. Unfortunately, there is no evidence that these refuges exist in all waterways, that fish and other species will seek them out, or that the refuges are of sufficient extent to protect the aquatic life of a waterway in its entirety. To expect that trout or other species are capable of finding, evaluating and traveling to those thermal refuge areas that offer sufficient protection is unreasonable. Reliance on such refuges as a replacement for appropriate standards is grossly inadequate.

Instead, temperature criteria must be imposed sufficient to protect all trout species, regardless of their presence as spawning or non-spawning populations. These criteria must protect the most sensitive species (brook trout) and offer an adequate margin of safety. For these reasons, the criteria proposed for FW2-TP waterways of 22 ºC as a daily maximum water temperature and 19 ºC as the seven-day rolling average should be imposed on FW2-TM waterways as well.

Similar concerns exist for the criteria on FW2-NT waterways of 31 ºC as a daily maximum water temperature and 28 ºC for the seven-day rolling average. The lethal limit for smallmouth bass and yellow perch, two of the more sensitive non-trout species, is 32.3 ºC. The proposed criterion offers a very small margin of safety between the standard and the lethal limit. This margin should be expanded. (7, 9)

RESPONSE TO COMMENT 103: The proposed temperature criteria recognize the natural variability of water temperatures that routinely occur weekly and daily in streams throughout the State. Trout production streams are generally small headwater streams where flow (volume) and

water temperatures are moderated by the infiltration of cold groundwater. Trout maintenance streams differ from trout production streams in that they are typically larger (wider and greater flow), less shaded, and warmer during the summer. Summer water temperatures in trout maintenance streams routinely exceed the optimum temperature ranges for brook, brown, and rainbow trout. Typically, trout inhabiting trout maintenance streams are stocked trout. Of the three trout species stocked, brown trout are best able to cope with the summer water temperature fluctuations that commonly occur in these trout maintenance waters. Fish species other than trout that inhabit trout maintenance streams are more tolerant of higher temperatures than trout. Only in highly manipulated water systems, such as the Pequannock River, where flow and water temperatures are closely tied to water releases from a complex reservoir system, have temperature-related fish kills been routinely documented. The Department and local conservation groups are working with the water purveyor in this river system to address these issues.

The higher temperature criteria proposed for trout maintenance waters is protective of the species of fish, including trout, residing in these waters and consistent with the naturally occurring stream temperatures that exist. Although the temperature criteria for trout maintenance streams would allow a daily maximum water temperature to approach 25 °C, the frequency of these higher temperatures would be moderated by the seven-day rolling average of the daily maximum water temperature (23 °C). A daily maximum temperature of 23 – 25 °C would have to be offset by a daily maximum temperature of less than 23 °C for one or more days over a seven day period. The combination of a daily maximum temperature and seven-day rolling average of the daily maximum water temperature acknowledges the inherent variability of water temperatures in surface waters and provides an adequate level of protection for trout.

Nontrout streams vary widely in size and are inhabited by a variety of fishes that tolerate warmer temperatures than trout. Smallmouth bass is a fish species not widely distributed in New Jersey. Physical habitat, more so than summer water temperature, tends to limit its distribution Statewide. This species occurs in a limited number of lakes and larger streams, primarily in the

northern part of the State, where suitable habitat (rocky bottom substrate) is present and cool summer water temperatures prevail. They are often present in larger trout maintenance streams and lakes and would benefit from the more stringent temperature criteria associated with these waters. Yellow perch is a fish species that is relatively abundant in New Jersey, preferring ponds and lakes rather than streams. The temperature criteria for nontrout waters would provide a sufficient level of protection to these species where they occur.

104. COMMENT: The phrase "unless due to natural conditions" should not be included in each of the temperature standards. The State, and in large part, the Department, has allowed most every waterway in New Jersey to be destroyed or significantly altered. As such, it is simply impossible to know whether changes are due to natural conditions, and what the baseline for such a comparison might be. This addition is unworkable, it is nonsensical, it has no basis in science, and it violates the Clean Water Act's mandate to restore and protect. (9)

RESPONSE TO COMMENT 104: The Department believes that temperature exceedances due to natural conditions could only occur during a period of very hot summer days. All other exceedances of temperature criteria would not be considered natural. This could be demonstrated by comparing the stream temperature with a reference site temperature. A reference site could be a similar stream within the same watershed without any man-made discharges where changes in ambient temperature could be caused only due to solar radiation.

The temperature criteria at N.J.A.C. 7:9B-1.14(d)11.i, ii, and iii indicate that "No thermal alteration which would cause temperatures to exceed . . .". The temperature values listed at N.J.A.C. 7:9B-1.14(d)11 are ambient temperature criteria and not thermal alterations. In addition, as explained in the summary of the rule proposal, these temperature criteria were developed using ambient temperature data collected over several years. The proposal at 41 N.J.R. 1573, indicates, "This temperature data provides useful insight regarding the range of temperatures that reproducing trout populations encounter in New Jersey streams during the summer months, and was used to develop temperature criteria. . . ." Therefore, the Department

is deleting, "No thermal alterations which would cause temperatures to" upon adoption, and replacing it with "Temperatures shall not exceed . . ." at N.J.A.C. 7:9B-1.14(d)11i, ii, and iii.

105. COMMENT: The temperature standard should not be lowered from 68 ºF to 71.6 ºF. Allowing warmer temperatures in trout production waters will lead to biological problems, as well as cause algae blooms and eutrophication. This will impact sewer plant discharges and water supply intakes, especially in the Passaic and Raritan basins. Raising the temperature criteria will have adverse impacts on trout and mussels, but more importantly, will have adverse impacts on the State's water quality. Warmer water means more algae, more bacteria, and more problems. (18)

RESPONSE TO COMMENT 105: The existing temperature criteria of 20 ºC is a summer seasonal average which can easily be exceeded for several days yet may meet the criterion when averaged with data collected throughout the summer. The new temperature criteria include a daily maximum criterion of 22 ºC and a seven-day consecutive average of daily maximum temperature criterion of 19 ºC. The establishment of daily maximum criterion and seven-day average of the daily maximum temperature criterion will prevent stream temperatures from reaching levels which can be highly stressful or lethal to fish as compared to summer seasonal average temperature criterion. The established daily maximum temperature criterion should prevent temperatures from reaching undesired levels that promote other biological problems such as, algae blooms and eutrophication.

106. COMMENT: The commenter is concerned about the temperatures set by the Department. For example for FW2-NT waters the Department notes that native warm water fishes would be subject to lethal effects in water temperatures from 31 to 36 ºC. The Department after noting that 31 ºC would be lethal, sets the daily maximum temperature at the lethal levels. This proposal violates the Statute: "Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent

limitations and water quality." 33 U.S.C. 1313(d)(1)(D). By setting the allowable daily maximum temperature at lethal levels the Department has not provided for a margin of safety. The allowable daily maximum temperature, as well as the rolling seven-day rolling average, should be set at sub-lethal levels. As 64 percent of waters assessed as trout aquatic life use do not meet the standards, the Department is required to insure temperature is not a threatening factor. Therefore, the Department should revise these numbers for all waters. (13)

RESPONSE TO COMMENT 106: The Department is adopting a daily maximum temperature of 31 ºC which is more protective than the existing summer seasonal average of 27.8 ºC for small mouth bass/yellow perch waters and 30 ºC for all other FW2-NT waters. A variety of stream habitats exist within the FW2-NT classification in New Jersey. As such, there exists a wide variety of fishery resources inhabiting FW2-NT waters. The Department believes that the new criteria provide an appropriate level of protection for native warmwater fishes inhabiting FW2-NT waters. The rolling seven-day average of the daily maximum of 28 °C is designed to keep water temperatures within optimum limits of native fishes while recognizing the natural variability of water temperatures in nontrout streams that routinely occur during the summer and over a 24-hour period.

CYANIDE

107. COMMENT: The Department should not lessen the standards for cyanide. Loosening standards without providing for an adequate measure of safety is not prudent. As the last several integrated water quality reports indicate there is long way for New Jersey waters to go before they meet the standards and goals set forth by the United States and by this State with the enactment of the Clean Water Act and the Water Pollution Control Act. Water is too important to continue along this path. The Department should strengthen the Surface Water Quality Standards. (13)

108. COMMENT: The standards for cyanide should not be weakened. (18)

109. COMMENT: USEPA is currently reviewing the cyanide criteria. The Department should refrain from adopting cyanide criteria at this time until such time as USEPA has completed its review. (9)

RESPONSE TO COMMENTS 107 THROUGH 109: The USEPA is not revising the aquatic life criteria for cyanide. See http://www.epa.gov/waterscience/criteria/aqlife/index.html. The USEPA is reviewing, revising, and/or proposing aquatic life criteria for lead, silver, selenium, ammonia, and atrazine.

The Department is adopting 2.7 µg/L as acute and chronic saltwater criteria for cyanide based on toxicity data from New Jersey-specific species. These criteria will replace the existing criteria of 1.0 µg/L developed by USEPA using toxicity data available in 1981. The revised cyanide criterion was derived using new toxicity data as well as the data available in 1981. The additional toxicity information enabled the Department to select toxicity data for New Jersey-specific species. Criteria developed using all the available toxicity data for national species yielded an acute and chronic saltwater criteria of 5 µg/L. Therefore, cyanide criteria updated based on New Jersey-specific information are more appropriate to protect aquatic life in New Jersey.

110. COMMENT: The proposed amendments do not address the establishment of water quality-based effluent limitations (WQBELs) for parameters that occur naturally in groundwater, such as arsenic, and that are derived from potable water supplies. The commenter previously noted to the Department that the drinking water standard for arsenic was significantly less restrictive than the corresponding SWQS human health criterion, though considered acceptable and protective of public health.

The SWQS for arsenic include a human health criterion of 0.017 µg/L (hc) to protect the public against adverse effects of drinking receiving waters; aquatic life standards are significantly higher, at 340 µg/L (acute) and 150 µg/L (chronic). By contrast, the Safe Drinking

Water Act Regulations maximum contaminant level for arsenic is 5.0 µg/L in tap water, which is specifically intended for consumption (N.J.A.C. 7:10-5.2). The Department explained that the difference between the SWQS and the Drinking Water Standards (DWS) is due to the basis upon which each standard was derived. The DWS was based on treatment technology, considering public health protection needs, while the SWQS was based solely on risk.

It is inappropriate to regulate the occasional consumption of untreated receiving waters more restrictively than the intentional and frequent consumption of tap water. Arsenic is a human carcinogen, and the water quality criterion of 0.017 µg/L is based on daily exposure over a 70-year exposure period. Such exposure cannot occur from occasional surface water consumption. As it now stands, arsenic in surface waters is more restrictively regulated than arsenic in tap water based on human health concerns for the ingestion of water. Since arsenic removal at a POTW is very minor, acceptable drinking water sources may cause the POTW to exceed the instream standard. This will force POTWs to regulate drinking water sources to eliminate the arsenic source even though the level of arsenic in the potable water system is acceptable. This is clearly not intended by State or Federal law. The Department's approach is unnecessary to protect public health. The Department's approach sets highly restrictive stream standards based on the assumption that a person may consume untreated surface water every day for the entire exposure period. This does not occur. Moreover, untreated consumption of surface waters is prohibited by Federal law. Once such waters are treated, they are no longer subject to SWQS but would be regulated under the SDWA rules.

In the case where parameters, such as arsenic, are naturally occurring in the potable water supply at concentrations in compliance with the Safe Drinking Water Act Regulations but greater than the SWQS and the existing wastewater treatment does not achieve compliance with the SWQS, N.J.A.C. 7:9B should specifically authorize a variance process to authorize the less-restrictive discharge. (4)

RESPONSE TO COMMENT 110: Under the Water Pollution Control Act and the Water Quality Planning Act, the Department is to protect, maintain and restore the water quality of New Jersey. As part of this mandate, New Jersey has adopted human health surface water quality criteria to protect human health from exposures to toxics through drinking water and fish consumption. The USEPA Final Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000) (EPA-822-B-00-004; October 2000) is used when developing arsenic criteria. The methodology incorporates exposure to chemicals from drinking water and consumption of organisms so that the combined exposure is limited to an acceptable level.

The drinking water Maximum Contaminant Level Goal (MCLG) and the existing human health criterion of 0.017 µg/L are both based on the same cancer risk of one-in-one-million. The adopted drinking water MCL takes into consideration treatment, costs, and analytical capabilities. The factors considered in the establishment of the MCLs cannot be used to revise the water quality criteria established at N.J.A.C. 7:9B.

The SWQS include several provisions to enable the Department to address the types of conditions noted by the commenter. Arsenic does occur naturally and many areas of the State are likely to contain natural background concentrations that exceed the human health criteria. N.J.A.C. 7:9B-1.5(c)1 provides that "The natural water quality shall be used in place of the promulgated water quality criteria of N.J.A.C. 7:9B-1.14 for all water quality characteristics that do not meet the promulgated water quality criteria as a result of natural causes." The Department can revise the criteria where natural conditions are documented. Unfortunately, the Department does not have the data necessary to revise the criteria to reflect the natural conditions at this time.

In addition, the Department recognizes that many of the criteria are below the current analytical capabilities. Effluent limitations for criteria below the analytical detection capabilities are specifically addressed at N.J.A.C. 7:9B-1.5(e)5. This provision allows the Department to

establish the effluent limitation at the detection level for the available analytical methods in these cases.

The SWQS at N.J.A.C. 7:9B-1.8 and 1.9 provide an opportunity for a permittee to request a variance to their water quality-based effluent limit. The permittee must demonstrate one of the following: that the water quality criteria are not attainable because of natural background, an irretrievable man-induced condition, low flows, or controls more stringent than those required by Sections 301(b) and 306 of the Clean Water Act. N.J.A.C. 7:9B-1.10 includes the procedures for reclassifying a specific segment for less restrictive uses. The petitioner must make a similar demonstration. The Department cannot remove a use if the use is existing. For example, if the stream is currently used even infrequently as a water supply, the potable water supply use could not be removed.

111. COMMENT: The development of site-specific criteria should not be relegated to the TMDL process, but should be allowed to precede under segment limitation analyses where no TMDL is being prepared because of the impairment's priority or the lack of information necessitating a TMDL. (9)

RESPONSE TO COMMENT 111: The Department has the authority to develop site-specific water quality criteria through formal rulemaking. As an example, New Jersey adopted site-specific copper criteria at N.J.A.C. 7:9B-1.14(g) for the waters of the New York-New Jersey Harbor based on harbor-specific species (See 28 N.J.R. 3782(b), August 5, 1996). N.J.A.C. 7:9B-1.14(g) will also allow the Department to develop site-specific criteria through the TMDL process. The Department would adopt the site-specific criteria as an amendment to the Statewide Water Quality Management Plan or the applicable Areawide Water Quality Management Plan in accordance with N.J.A.C. 7:15-6.4 and would incorporate the site-specific criteria into the tables at N.J.A.C. 7:9B-1.14(g).

STREAM CLASSIFICATION

112. COMMENT: The upgrade of the Pequannock tributary at Suntan Lakes to Category One is supported. (9)

RESPONSE TO COMMENT 112: The Department acknowledges the commenter's support.

113. COMMENT: The proposed downgrading of the Scout Run tributary at Warren Glen, a Category One tributary of the Musconetcong River, from FW2-TM to FW2-NT is strongly opposed. This reclassification is based on a rating of 19.3 earned in a study using a fish sampling method that looks at the Incidence of Occurrence of associated fish species. This test, which yields a single numeric result, is not the best way to assess a stream of this type. In a case such as this, where the result is so near the passing score of 20 points, other parameters such as in-stream habitat and macroinvertebrate populations should be considered. This downgrade is premature and may diminish protection of this stream which is a tributary of a Wild and Scenic segment of the Musconetcong River. (1, 14)

114. COMMENT: There are two streams removed from trout maintenance and production and reclassified to non-trout. This will create a serious lack of protection. Matthews Brook was downgraded from trout production to non-trout. Scout Run was reclassified from trout maintenance to non-trout. This goes against the purpose of the Clean Water Act, which is to protect current uses. (18)

115. COMMENT: The proposal indicates that four waterbody segments are being upgraded, which suggests increased protections. However, the change to Scout Run at Warren Glen to FW2-NT(C1) is not an upgrade in the sense that temperature limits are higher for NT and TM. The retention of the Category One status is recognized. The same comment applies to Mathews Brook being reclassified to FW2-NT. (9)

RESPONSE TO COMMENTS 113 THROUGH 115: The surface water classifications for Scout Run (FW2-TM) and Matthews Brook (FW2-TP) were default classifications. These

default classifications, used for streams that have not been surveyed and are not specifically listed in the SWQS, are based upon the first classified waterbody downstream. The new classifications follow established protocols the Department uses to classify streams. Surveys conducted on these two streams in 2006 provided documentation that was used to determine their appropriate surface water classifications.

The Department calculates Incidence of Occurrence (I.O.) value based on fisheries data to determine whether the stream should be classified as Trout Maintenance or Nontrout. I.O. values less than 20 indicate a prevalence of fish species not associated with trout, and results in a classification of FW2-NT. Fish species inhabiting a stream environment are reflective of in-stream and riparian habitat, as well as water quality. Therefore, in-stream habitat conditions are already reflected in the data results. Fish species present in Matthews Brook resulted in an I.O. value less than 20. Therefore, Matthews Brook could not be classified as trout production.

The Department recently reevaluated Scout Run and found reproducing trout population. Based on the reevaluation, the Department will revise the stream classification of Scout Run appropriately as part of future rulemaking. Therefore, the Department is not adopting the proposed stream classification change to FW2-TM for Scout Run at this time.

116. COMMENT: The Department should reassess Scout Run using a thorough in-stream habitat and macroinvertebrate assessment as well as a temperature study to classify this stream properly. If such a study confirms that Scout Run is non-trout, this stream would be a suitable candidate for a native brook trout re-colonization restoration project and therefore deserving of continued protection. (1, 14)

RESPONSE TO COMMENT 116: The native brook trout re-colonization restoration project for Scout Run, as suggested by the commenter, is not necessary because the Department reevaluated Scout Run and confirmed the presence of reproducing trout population. Based on the reevaluation, the Department plans to revise the stream classification of Scout Run

appropriately as part of future rulemaking. As a result, the Department is not adopting the proposed stream classification change to FW2-TM for Scout Run at this time.

WILDLIFE CRITERIA

117. COMMENT: The Department has failed to promulgate water quality criteria that are protective of wildlife, but attempts to hide behind the existing criteria as somehow an adequate gap-filler. Reliance on the current human health criteria does not protect certain species and existing use by wildlife. The wildlife criteria are meant to be protective of all wildlife, not just those species that are threatened with, or on the brink of, extinction. Any rules that establish criteria to protect only the most vulnerable species do nothing to prevent other species from requiring the protection of either the Federal or State endangered species laws in the future due to poor water quality. (9)

RESPONSE TO COMMENT 117: The Department has adopted criteria to protect aquatic life, and wildlife, from acute and chronic effects due to toxic pollutants. The Department has not proposed wildlife criteria, which are intended to protect top level predators, typically fish eating birds including bald eagles, peregrine falcon, and osprey from the bioaccumulative impacts of mercury, PCBs, and DDT as part of this rule. As indicated in the Response to Comments 120 through 122, below, the Department has initiated other measure to reduce the levels of mercury and PCBs in the environment.

118. COMMENT: The State needs to adopt wildlife criteria, especially in the Delaware Estuary and in the New York Harbor complex. The absence of wildlife criteria is having a severe and dangerous impact on wildlife and, indirectly, people. The dioxins, including PCP, TCE, and mercury are leeching into our bays impacting fisheries and wildlife, especially birds. More importantly, the lack of wildlife criteria is the major reason for the increase in fish advisories. Many fish, such as striped bass and bluefish, impact public health. In the last five years, the bioaccumulation of toxins in fish is resulting in more advisories on consumption for humans. (18)

119. COMMENT: The complete lack of wildlife criteria for mercury, PCBs and DDT is of concern. These are chemicals, which have catastrophic impacts to wildlife as well as human health. At least as far back as 1994, the Department was urged to adopt wildlife criteria. In June 1996, the United States Fish and Wildlife Service expressed in writing their concern over the lack of wildlife criteria. Standards that are protective of wildlife for Mercury, DDT and its metabolites and PCB should be promulgated immediately. In addition, the Department should also lower the levels of Mercury, DDT and Metabolites, and PCBs for human health, to significantly lower levels. (13)

RESPONSE TO COMMENTS 118 THROUGH 119: As indicated in the proposal, the Department is collecting data to develop regional bioaccumulation factors which will be used to update the wildlife values recommended for mercury, PCBs and DDT and its metabolites. In addition, the Department will use these regional BAFs to update the existing human health criteria. The Department is working with USEPA Region II, USEPA Region III, USEPA Headquarters, Pennsylvania, and Delaware to develop implementation procedures.

120. COMMENT: All new permits and all renewals should require that the discharge use best management practices to reduce and eliminate the discharge of mercury, PCBs and DDT. (13)

121. COMMENT: The Department should change N.J.A.C. 7:9B-1.5(e)(7) to provide that characterization monitoring is required rather than the permissive “may”. (13)

122. COMMENT: Numerical limits should be placed on all NJPDES permits as proposed by the Fish and Wildlife Service. While this will create a situation wherein enforcement at these low levels may not immediately be possible, it does set the standard. As methods are refined in the future, these limits then may be tested for compliance and enforcement can then take place. This is preferable to waiting for testing to become sensitive enough before limits can be

promulgated. These concerns are only valid for DDT and PCBs as there are testing methodologies that are sensitive enough to measure mercury emissions.

Another alternative method would be to measure the levels of pollutants in fish tissue in order to determine whether the discharge limits have been met through calculation. By setting forth limits that are protective of wildlife and of human health, the Department would be meeting its obligations under Federal and State law. Specifically, the Department would be meeting the requirements that, "[t]oxic substances in waters of the State shall not be at levels that are toxic to humans or the aquatic biota, or that bioaccumulate in the aquatic biota so as to render them unfit for human consumption." (13)

RESPONSE TO COMMENTS 120 THROUGH 122: N.J.A.C. 7:9B-1.5(e)7 provides that the Department may impose characterization monitoring in NJPDES permits using more sensitive analytical methods. The use of the term "may" refers to a selection process to identify facilities that may discharge these pollutants. If the Department determines that the facility discharges mercury, for example, the permit will require monitoring using method 1631, which is listed as the approved method for the NPDES program at 40 C.F.R. Part 136.

On October 1, 2007 at 39 N.J.R. 4117(a), the Department adopted amendments to the NJPDES rule at N.J.A.C. 7:14A-21, entitled "Requirements for Dental Facilities". This rule reduces the mercury discharge from dental facilities. Dental facilities contribute as much as 35 to 45 percent of the mercury entering publicly owned treatment works (POTWs). Mercury from these facilities results from dental amalgam (approximately 50 percent mercury by weight) being rinsed down the drain, usually to a municipal wastewater system, and then to the POTW. Mercury not removed by the POTW's treatment processes is discharged into the surface waters of the State. Mercury that is removed at the POTW by wastewater treatment is concentrated in sludge that may be incinerated, which releases the mercury into the air where it can be deposited into surface waters. This rule requires certain dental facilities to implement best management practices (BMPs) including installation and operation of amalgam separators. These measures

should prevent about 99 percent of the mercury-containing wastes from dental facilities being sent to the POTW. (See Response to Comment 77 for additional information).

The Department also adopted amendments to the NJPDES rules at N.J.A.C. 7:14A-11.13, that will require major facilities discharging to PCB-impaired waters to monitor their discharge for PCBs using method 1668A. (See 37 N.J.R. 4723(a)). Based on the results of the monitoring, some of those facilities will be required to develop and implement a PCB Pollutant Minimization Plan (PMP).

Additional efforts are necessary to address other sources of mercury and PCBs. The Department is taking regulatory measures to reduce the levels of mercury and PCBs in the environment. On January 3, 2005 the Department adopted new standards and procedures for the control and prohibition of mercury emissions from municipal solid waste (MSW) incinerators, hospital/medical/infectious waste incinerators, iron or steel melters, and coal-fired boilers at N.J.A.C. 7:27 (see http://www.nj.gov/dep/rules/). These rules and amendments reduce or prevent mercury emissions in the State from the four regulated source categories.

On September 10, 2009, a TMDL was established by the Department in accordance with N.J.A.C. 7:15-6.4 to address mercury impairment. The TMDL is an as amendment to the Atlantic, Cape May, Lower Delaware, Lower Raritan-Middlesex, Mercer, Monmouth, Northeast, Ocean, Sussex, Tri-County, Upper Delaware, and Upper Raritan Water Quality Management Plans. This TMDL will address 122 subwatersheds listed as impaired due to mercury on the 2008 List of Water Quality Limited Waters. However, as indicated in the *Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide*, the main source of contamination in these waters is air deposition. For additional information please visit: http://www.nj.gov/dep/watershedmgt/DOCS/TMDL/tmdl_mercury_huc14s.pdf.

The USEPA banned the domestic use of DDT on December 31, 1972 because it is persistent in the environment, accumulates in biological tissues, and therefore, bioaccumulates in the food chain. The current analytical methods are unable to detect DDT at the current water quality criteria. Effluent characterization monitoring with existing analytical methods failed to identify any discharges of DDT. Based on the above, the Department is not requiring any specific action in the SWQS for DDT.

In 2001, USEPA recommended that states revise their existing human health criteria and adopt a methyl mercury fish tissue criterion designed to protect the public from mercury exposure when consuming fish. USEPA also recommended that states develop site-specific or regional bioaccumulation factors (BAFs) to ensure that the water quality criteria adequately protect the state's water resources. BAFs are used in developing water quality criteria to account for the uptake and retention of a chemical by an aquatic organism from water, food, and sediment. The Department is working with USGS, and the Philadelphia Academy of Natural Sciences to collect and analyze fish tissue data to develop regional BAFs. The new BAFs will be used to update the human health and recommended wildlife criteria. Once this new information is available, the Department will be able to update the human health and wildlife criteria for mercury. USEPA published guidance on how to implement the methyl mercury fish tissue criteria including compliance monitoring by NPDES facilities using fish tissue monitoring in January 2009. This guidance document is now undergoing further agency review. Therefore, the Department will evaluate the recommendation of using fish tissue sampling to evaluate permit compliance once the USEPA guidance is finalized. However, the Department does limited fish tissue monitoring and uses this information to assess water quality and place waters on the List of Water Quality Limits Waters. As indicated above, fish tissue information was utilized to develop the Mercury TMDL where air deposition is the major source.

DESIGN FLOWS

123. COMMENT: Proposals to incorporate drinking water parameters into surface water quality standards are noteworthy. However, without consideration of the appropriate design

stream flows, the necessary protection for the drinking water supply use for acute drinking water parameters will not be achieved. (16)

RESPONSE TO COMMENT 123: Design flows are used by the NJPDES program to evaluate the need for effluent limitations. These design flows are specified at N.J.A.C. 7:9B-1.5(c)2. The freshwater human health criteria at N.J.A.C. 7:9B-1.14(f)7 are used to protect the drinking water use. These human health criteria are designated as carcinogens or noncarcinogens. The design flow for carcinogens is the flow exceeded 75 percent of the time for the appropriate 'period of record' determined by the United States Geological Survey. For non-carcinogens, the design flow is the minimum average seven consecutive day flow with a statistical recurrence interval of 10 years or MA7CD10. The Department does not classify parameters in either the SWQS or the Safe Drinking Water Act Regulations as "acute" parameters. However, the Safe Drinking Water Act Regulations define an "acute violation" as an exceedance of a Maximum Contaminant Level (MCL) that is likely to have immediate health effects.

CATEGORY ONE

124. COMMENT: The Department should verify in its rule adoption document that there is in fact only one Category One upgrade as part of this rule proposal. That would be beneficial information for the general public. Unlike the 2008 SWQS rule adoption, the Department has not made available GIS mapping of proposed upgrades on its website for this rule proposal. The Department should always provide on its website mapping of any proposed and adopted Category One upgrades. A visual representation is very important as it provides easily understood information for the general public. (19)

125. COMMENT: There are a number of proposed Category One designations for waters that run through currently designated State Wildlife Management Areas. For example, the Department is amending the listing of Category One Waters of the Edwin B. Forsythe National Wildlife Refuge in that there would be separate Category One listings for portions of Cedar Creek and Cedar Run. Areas upstream of State Wildlife Management Areas could also be

affected by the designation in that 300-feet buffers would be required. These proposed classifications suggest that there are more Category One designations beyond that of the Pequannock. This should be clarified. (19)

RESPONSE TO COMMENTS 124 AND 125: The Department only upgraded the Pequannock tributary at Suntan Lakes to Category One antidegradation designation as part of this rulemaking. However, the Department divided the stream classification tables for Delaware and Raritan drainage areas into upper and lower drainage basins to accommodate the new pH range for freshwaters outside of the Pinelands boundaries. As a result, the proposed rule text identified streams of lower Delaware and Raritan basins currently listed at N.J.A.C 7:9B-1.15(d) and (f) as deleted. These deleted streams were shown as new additions to the proposed lower Delaware and Raritan Basins at N.J.A.C 7:9B-1.15(e) and (h).

The waters listed as C1 at N.J.A.C 7:9B-1.15(e) and (h) were previously designated as Category One and therefore this adoption does not increase or change these designations. Buffers established under the Stormwater Management rules (N.J.A.C. 7:8) and the Flood Hazard Area Control Act rules (N.J.A.C. 7:13) are implemented as a BMP to meet the Category One antidegradation standard. These buffers are imposed adjacent to all Category One waters and upstream tributaries within the same sub-watershed or HUC 14. Therefore, the buffers are implemented beyond the designated Category One waters within the subwatershed but the Category One waters are not extended beyond the designated stream stretches listed at N.J.A.C. 7:9B-1.15(c) thorough (i). The Department will post on its Website, a map of proposed changes for any future rules. The Department will provide an updated GIS coverage for the changes in Surface Water Quality Standards on adoption.

126. COMMENT: This is first time since these rules were established that no new streams have been upgraded to Category One. There are literally hundreds of streams in New Jersey that are deserving of this upgrade. For example, Swan Creek, which has a reservoir and is a critical tributary to the Delaware River, sections of the Paulinskill, sections of the Toms River, the

Walkill, which drains to a National Wildlife Refuge, and all Highlands waters should all be upgraded to Category One streams. Ensuring that appropriate streams are upgraded is vital if the State wants to have clean, plentiful water in the future. (18)

127. COMMENT: The Wallkill, which was dropped, should be upgraded to Category One because it drains into a wildlife refuge, and there are colonies of bog turtle in and around the Wallkill. (18)

RESPONSE TO COMMENTS 126 AND 127: The Department adopted the upgrade to Category One designation of approximately 686 river miles on June 16, 2008 (see 40 N.J.R. 3630(b)) based on "Exceptional Ecological Significance", "Exceptional Fisheries Resource(s)", and "Exceptional Water Supply Significance". Streams upgraded were included in the following watersheds: Musconetcong River, Wallkill River, Pequest River, Ramapo River, Stony Brook, Lamington River, Salem River, Pompeston Creek, Maurice River, Toms River, Rockaway River, and Pequannock River. In addition, the antidegradation designation for Split Rock Reservoir, Oak Ridge Reservoir, Canister Reservoir and tributaries to the Swimming River Reservoir and the Wanaque Reservoir were also upgraded.

The Department acknowledges the commenters' interest in upgrading more waterbodies to Category One designation. As part of the 2008 rule proposal, the Department reviewed available information on the streams suggested by the commenters for Category One upgrade. If additional information becomes available on these waterbodies, the Department will consider that information to determine if the antidegradation designation of any of these waterbodies should be proposed for change.

128. COMMENT: The Department is proposing to adopt, without amendment, troublesome definitions relating to the Category One program, such as the definition of Category One, Exceptional Ecological Significance, Exceptional Fisheries Resources, and Exceptional Water Supply Significance. Furthermore, the Department has not proposed any standards to judge

whether waterbodies should be listed for their exceptional recreational significance. The Department should bring interested parties together in a workshop or meeting to develop appropriate, comprehensive, and clear changes that will not conflict with the clear intent behind Category One designations as set forth under the SWQS that existed as of May 2007. (9)

RESPONSE TO COMMENT 128: The Department adopted new data-driven definitions for "exceptional ecological significance", "exceptional water supply significance" and "exceptional fisheries resources" on June 16, 2008 (see 40 N.J.R, 3630(b)). In addition, the Department upgraded the antidegradation designation for 686 stream miles based upon these new definitions. The Department also requested input for developing a new definition for "exceptional recreational significance" as part of the 2008 proposal. The Department received suggestions to define "exceptional recreational resources" to include waters designated as Wild and Scenic as well as waters flowing through any open space. The Department also received comments recommending that it remove "exceptional recreational significance" from the Category One definition because recreational activities can degrade water quality. The Department determined that most waters classified as Wild and Scenic are already designated as Category One, Pinelands or FW1. The Department has not yet determined how to define "exceptional recreational significance."

The 2008 amendments represent the most significant action taken to upgrade waters to Category One since 2002. The new definitions establish an open process for identifying waterbodies that qualify for Category One designation. In light of this recent history, the Department does not believe that a workshop or meeting with interested parties on the topic of the methodology for designation of Category One waters, as requested by the commenter, is necessary.

129. COMMENT: The Category One program is one of the most effective antidegradation strategies that Department has used for protecting already pristine waters to meet its CWA antidegradation obligations. In waterbodies showing early signs of water quality impacts, the

Department should also use its Category One program to forestall impaired waters listings, TMDL litigation and a court-ordered or EPA-ordered remedy that is beyond the State's control, but that will likely be the same kind of riparian buffers that already exist in the Category One program. The USEPA provides an incentive for states to implement proactive protections. 40 C.F.R. §130.7(b)(6)(iv). The Department's compliance with the Federal law depends on a systematic and rigorous application of the Category One program to already degraded waters. (9)

RESPONSE TO COMMENT 129: As indicated in Response to Comment 33, antidegradation is one of many Clean Water Act programs to protect, maintain and restore water quality. There are other programs to address the concerns identified by the commenter. The Department is fully compliant with the Federal Water Quality Standards program requirements by establishing water quality standards that include designated uses, criteria to protect these uses and policies, including antidegradation.

130. COMMENT: The State has failed to develop criteria to upgrade streams to protect warm water fisheries. Critical streams, especially in the Delaware Bayshore, go unprotected because of this omission. One way to determine upgrades is to identify streams within HUC 14 areas where a HUC 14 has less than 20 percent development and in landscapes 3, 4, and 5 as Category One streams. (18)

RESPONSE TO COMMENT 130: The Department is working to identify warm water fisheries that would qualify as an exceptional fisheries resources. The Department's Division of Fish and Wildlife is in the process of developing a list of other fisheries resources that may benefit for additional water quality protections. The Department may incorporate additional types of fisheries in the definition of exceptional fisheries resource in a future rulemaking.

131. COMMENT: Why haven't streams with significant recreational value been upgraded. The Federal government has recognized their value, and New Jersey should as well. Streams

with recreational value that should be upgraded include the Maurice River, the Great Egg Harbor River, the Mullica River, and all streams that drain into National Wildlife Refuges. (18)

RESPONSE TO COMMENT 131: The commenter seems to be referring to the Wild and Scenic Rivers. The Department evaluated the waters that qualify under the Federal Wild and Scenic Rivers program and determined that most of the Wild and Scenic River waterbodies are already designated as Category One or ONRW. (See Response to Comment 128). Some portions of Maurice River and Great Egg Harbor River are designated as Category Two and may be upgraded to Category One when sufficient data become available to designate under the definitions of exceptional ecological significance or exceptional fisheries resource.

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDES) PROGRAM - N.J.A.C. 7:14A

132. COMMENT: The Department proposes to move its default metals translators and whole-effluent toxicity requirements to the NJPDES rules, which makes sense. (2)

RESPONSE TO COMMENT 132: The Department acknowledges the commenter's support.

133. COMMENT: How dischargers are permitted is a function of a careful and often difficult process with decisions made on a case-by-case basis. However, standards themselves should reflect that the Whole-Effluent Toxicity (WET) criteria are part of the water quality standards. (9)

134. COMMENT: The proposed amendments do not address the incorporation of chronic whole-effluent toxicity (WET) limitations in NJPDES permits. The reliability of the chronic WET testing is questionable, particularly with regard to low level toxicity in effluent samples. NJPDES permits should include action levels for chronic WET in lieu of enforceable effluent limitations. The Department has indicated in the past that it is unaware of general problems with the chronic WET test.

The Department should not establish NJPDES limits for chronic WET. There is ample information showing highly variable test results on identical effluent samples. This is apparently caused by changing organism sensitivity associated with culturing the organisms. A summary of side-by-side chronic WET test data was previously submitted to the Department by Mr. James Cosgrove of OMNI Environmental, Inc. in 2007. The data show several instances where different laboratories reported chronic toxicity ranging from 1 – 16 TU_c for the same sample, indicating the sample is either non-toxic (in compliance) or highly toxic (a permit violation triggering enhanced TRE testing). These data illustrate the variability of the test results which make this analytical method inappropriate as an enforceable effluent limit. Confirmation that the toxicity results are "real" is a necessary step prior to any decision that some type of Toxicity Reduction Evaluation be undertaken. The Department should exclude chronic toxicity from Clean Water Enforcement Act penalties due to this concern. Given the numerous variables unrelated to effluent quality that may impact test results, the chronic WET test is better suited as a trigger for follow-up evaluation and, as necessary, remedial measures to address verified toxicity concerns. (4)

RESPONSE TO COMMENTS 133 AND 134: The proposed amendments to N.J.A.C 7:9B and N.J.A.C. 7:14A do not address the incorporation of chronic whole-effluent toxicity (WET) limitations in NJPDES permits. The regulations addressing the imposition of those limits can be found at N.J.A.C. 7:14A-13.2(a)2, 13.3(a), 13.5, and 13.6(a), which were recently readopted (see 41 N.J.R. 142; January 5, 2009). The Department continues to be unaware of general problems with the chronic WET test. The data shared with the Department involved a certified laboratory where the Department's Office of Quality Assurance had identified quality control problems and corrective actions were taken. The Department's use of chronic WET is consistent with USEPA regulations, policy and guidance, including the imposition of chronic WET water quality-based effluent limits. The Department has contacted USEPA Headquarters to verify USEPA's position on the use of chronic toxicity tests. USEPA Headquarters confirmed their position regarding the validity of chronic toxicity tests and that their use is not just for characterization purposes. Using

chronic WET as action levels only in lieu of enforceable effluent limitations (where required) as suggested would not be consistent with Federal regulations. The Department does not have the authority to exclude limitations from penalties under the Clean Water Enforcement Act as suggested.

135. COMMENT: N.J.A.C. 7:14A-13.6(d)2 states that whole-effluent toxicity "test species need not be indigenous to, nor occur in the waters in question." This section should be changed to read, "Test species need not be indigenous to, nor occur in, but must be representative of the waters in question." (2)

RESPONSE TO COMMENT 135: N.J.A.C. 7:14A-13.6(d)1 already includes language that states that the Department's objective is that the test species used be "representative of the more sensitive aquatic biota from the different trophic levels of the waters in question." This language, while more specific than the commenter's suggested change to N.J.A.C. 7:14A-13.6(d)2, fully addresses the commenters concern.

136. COMMENT: References to the use of the USEPA Technical Guidance Manual for calculating water quality-based effluent limits, Total Maximum Daily Loads, and Effluent limits are not appropriate for effluent dominated streams. Wherever streams at the point of a water supply intake have 50 percent or more of treated sanitary wastewater at low flow, the Technical Guidance Manual does not provide a rational method for establishing design flows. The SWQS should set forth another procedure for effluent dominated streams. (16)

RESPONSE TO COMMENT 136: Section 4.5 of the USEPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) ("TSD") explains that "If complete mixing occurs near the discharge point, such as in effluent-dominated receiving streams, then steady-state models may be used to calculate TMDLs." In addition, the procedures identified in the USEPA TSD ensure that the applicable surface water quality standards and designated uses are protected in all waterbodies, including those that are effluent-dominated. Furthermore, the

statistical expression of the design flows utilized by the Department in evaluating water quality-based effluent limitations (WQBELs) are based on the provisions of N.J.A.C. 7:9B-1.5(c)2 which have not been modified as part of this adoption. For additional information on the establishment of the provisions at N.J.A.C. 7:9B-1.5(c)2, please refer to the proposals of November 2, 1992, 24 N.J.R. 3983(a) (adopted on December 6, 1993 at 25 N.J.R. 5569(a)) and December 18, 2000, 32 N.J.R. 4397(a) (adopted on January 22, 2002 34 N.J.R. 537(a)). In calculating the appropriate site-specific design flows for each statistical expression, the Department relies on the expertise of the United States Geological Survey (USGS). For the reasons identified above, the Department does not have sufficient evidence, at this time, to conclude that the procedures referenced in the USEPA TSD, as well as those referenced at N.J.A.C. 7:14A, N.J.A.C. 7:9B and/or N.J.A.C. 7:15-6, are inappropriate for determining water quality-based effluent limitations (WQBELs), total maximum daily loads (TMDL), or other effluent limitations in effluent dominated streams.

Summary of Agency Initiated Changes:

N.J.A.C. 7:9B-1.14(d)11.ii.

The Department proposed temperature criteria values in both Celsius and Fahrenheit at N.J.A.C. 7:9B-1.5(c)8i(1), (2), (3), (4) and (5); and N.J.A.C. 7:9B-1.14(d)11.i, ii and iii (see 41 N.J.R. 1588, April 20, 2009). However, upon adoption, the Department determined to delete the values listed in Fahrenheit at N.J.A.C. 7:9B-1.5(c)8i(1), (2), (3), (4), and (5); and N.J.A.C. 7:9B-1.14(d)11.i, ii, and iii to eliminate any confusion between the values presented in Celsius and Fahrenheit.

N.J.A.C. 7:9B-1.15(c)

The Department proposed to delete the FW2-NT stream classification for the tributaries of Great Egg Harbor River within the MacNamara Wildlife Management Area. The Department has been unable to determine the dividing line between the fresh and saline portions of the tributaries. Therefore, the Department is not adopting the proposed change and is retaining the

classification as FW2-NT/SE1 for the waters of Great Egg Harbor River within the MacNamara Wildlife Management Area.

Federal Standards Analysis

Executive Order 27 (1994) and N.J.S.A. 52:14B-1 *et seq*. require that State agencies which adopt, readopt, or amend State regulations that exceed any Federal standards or requirements include in the rulemaking document a Federal standards analysis.

The Federal Clean Water Act (CWA), 33 U.S.C. 1251 *et seq*., as amended by the Water Quality Act of 1987 (PL 100-4) requires the establishment of water quality standards for all surface waters of the United States. The Water Quality Act of 1987 amended the CWA to require the adoption of criteria for toxic pollutants identified as causing or contributing to an impairment of a waterbody's designated use(s). Individual states are given primary responsibility for developing and adopting surface water quality standards applicable to their waters. The USEPA is responsible for overseeing and approving state water quality standards, providing guidance on the content of the standards, and developing water quality criteria guidance documents. Key elements of the surface water quality standards program required under the CWA are: a classification system establishing designated beneficial uses of the waters; ambient water quality criteria necessary to protect those uses; minimum uses to be attained, which reflect the fishable and swimmable goals of the CWA; and antidegradation policies and implementation procedures to prevent water quality from deteriorating. Furthermore, the CWA includes provisions requiring the USEPA to promulgate superseding Federal standards where the USEPA concludes that a State's standards are not consistent with the requirements of the CWA, or where Federal requirements are necessary to meet the requirements of the CWA.

The SWQS re-adoption with amendments is required by and consistent with the Federal statutes, regulations and guidance. The Department has prepared the following sectional analysis of the SWQS, which compares each section with the applicable Federal law, regulations and guidance, as required by Executive Order 27 (1994) and P.L. 1995, c. 65.

N.J.A.C. 7:9B-1.1 through 1.3 describe scope, construction, and severability. Nothing in these sections is subject to Federal standards; therefore, no further analysis is needed.

N.J.A.C. 7:9B-1.4 contains definitions of terms used within the SWQS. Most of these definitions are the same as those used by the Federal government in either the Federal Water Quality Standards Regulation at 40 CFR 131.3 or in the glossary of a guidance document for states entitled *Water Quality Standards Handbook: Second Edition* (August 1994, EPA-823-B-94-005a) (Handbook). There are a few definitions that cannot be found in the Federal regulations or guidance documents however, each one of them are consistent with the Federal policies.

N.J.A.C. 7:9B-1.5 establishes the policies applicable to the protection and enhancement of surface water resources throughout the State. These include general, interstate waters, general technical (including mixing zone policies), antidegradation, water quality-based effluent limitation, whole-effluent toxicity requirements, and nutrient policies. The general policies and interstate waters policies at N.J.A.C. 7:9B-1.5(a) and (b) are either exempt from Federal standards, or identical to language found in the Federal Water Quality Standards Regulations (see 40 CFR 131).

The general technical policies are specified at N.J.A.C. 7:9B-1.5(c). These policies include the design flows for different types of water quality criteria. The USEPA provides guidance and recommendations on design flows in the Handbook and in the Technical Support Document. The design flows specified at N.J.A.C. 7:9B-1.5(c) are identical to the USEPA recommendations, therefore, no further analysis is required.

Antidegradation policies are specified in the SWQS at N.J.A.C. 7:9B-1.5(d). The Federal regulation governing antidegradation policies are found at 40 CFR 131.12. It requires that states develop and adopt antidegradation policies and implementation procedures to ensure that the level of water quality needed to protect existing uses is maintained. Additionally, it states that

water quality better than necessary to protect existing uses shall be maintained and protected unless demonstrations are made to support lowering the water quality. New Jersey has three levels of antidegradation protection in its Surface Water Quality Standards. The highest tier, which includes FW1 and Pinelands (PL) waters, is assigned to waterbodies that qualify as Outstanding National Resource Waters (ONRW). These waters are to be maintained in their natural state. Wastewater discharges to ONRW are prohibited. The next tier is Category One waters, which are protected from measurable changes in water quality. All other waters are designated as Category Two waters, where a lowering in water quality may be allowed for important social and economic development, provided water quality criteria continue to be met. New Jersey's antidegradation policies are consistent with and do not impose restrictions more stringent than those allowed under the Federal water quality standards regulations. Therefore, no further analysis is required.

N.J.A.C. 7:9B-1.5(e-g) and 1.6 set forth policies, conditions and procedures to be used when developing water quality-based effluent limitations, whole-effluent toxicity requirements, and nutrient policies, including general applicability, necessary information, and methodologies. They are based on Federal NPDES regulations at 40 C.F.R. 122.44(d), and Federal guidance derived from *Technical Support Document for Water Quality-based Toxics Control* or the TSD (EPA/505/2-90-001). In addition, amendments adopted to the nutrient policies are based on the USEPA National Nutrient Policy. Therefore, no further analysis is required.

New Jersey's mixing zone policies are found at N.J.A.C. 7:9B-1.5(h). Mixing zones are defined in the SWQS as localized areas of surface waters, as may be designated by the Department, into which wastewater effluents may be discharged for the purpose of mixing, dispersing, or dissipating such effluents without creating nuisances or hazardous conditions. If applied to a particular discharge, they result in less stringent NJPDES permit limitations. Federal regulations governing mixing zones clearly state that inclusion of mixing zones in State SWQS is optional. 40 CFR 131.13 provides that "States may, at their discretion, include in their State surface water quality standards, policies generally affecting their application and

implementation, such as mixing zones..." None of the language in the SWQS regarding mixing zones is more stringent than provided for in the Federal rule; therefore, no further analysis is necessary. The Department notes that the USEPA's Handbook and TSD provide guidance for developing and implementing mixing zone regulations for states that include mixing zones in their SWQS. N.J.A.C. 7:9B-1.5(c)4 does not contain any provisions that are more stringent than those contained in the Handbook or TSD.

N.J.A.C. 7:9B-1.7 requires that any total maximum daily load, wasteload allocation, or load allocation established as an amendment to an areawide water quality management plan must be consistent with this chapter. This language mirrors the Federal water planning regulation language found at 40 CFR 130.7(c); therefore, no further analysis is required.

N.J.A.C. 7:9B-1.8 and 1.9 set forth the procedures to be followed by applicants requesting a modification (also called variances) of WQBELs for discharges into Category One and Category Two waterbodies, respectively. There is no specific Federal regulation requiring that states adopt such variance procedures into their water quality standards. At 40 CFR 131.13 it is stated, "States may, at their discretion, include in their State surface water quality standards, policies generally affecting their application and implementation, such as... variances." The USEPA provides further guidance in the Handbook for developing and implementing regulations governing variances for States that do include them in their SWQS. No further analysis is therefore required.

N.J.A.C. 7:9B-1.10 sets forth specific requirements for petitioning the Department to remove a designated use from a waterbody. This language incorporates Federal requirements found at 40 CFR 131.10(g) and (h) and is not more stringent. No further analysis is required.

N.J.A.C. 7:9B-1.11 sets forth specific requirements for petitioning the Department to add a designated use to a waterbody. This language incorporates Federal requirements found at 40 CFR 131.10(i) and is not more stringent. No further analysis is required.

N.J.A.C. 7:9B-1.12 and 1.13 provide for the designated uses of the different surface water classifications of New Jersey and of the Delaware River and Bay. The Federal water quality standards regulations at 40 CFR 131.10(a) require that states specify appropriate uses to be achieved and protected in their surface waters. The Handbook gives further guidance on designating uses for surface waters: "consistent with the requirements of the CWA and Water Quality Standards Regulation, states are free to develop and adopt any use classification system they deem appropriate, except that waste transport and assimilation is not an acceptable use in any case (see 40 CFR 131.10(a))." The uses specified in N.J.A.C. 7:9B-1.12 and 1.13 are therefore, consistent with Federal requirements and no further analysis is required.

N.J.A.C. 7:9B-1.14 contains the surface water aquatic life and human health protection criteria (both narrative statements and numerical values) for waters classified as PL, FW2, SE and SC. New Jersey has adopted criteria for pollutants to protect the aquatic biota and humans from detrimental effects from exposure to these pollutants in surface waters of the State. N.J.A.C. 7:9B-1.14 also states that the surface water criteria for the Delaware River and Bay are as contained in the Delaware River Basin Commission regulations. Federal regulations require that states must adopt water quality criteria that protect the designated uses (40 CFR 131.11(a)(1)). The numerical criteria should be based on CWA Section 304(a) guidance or 304(a) guidance modified to reflect site-specific conditions, or other scientifically defensible methods (40 CFR 131.11(b)(1)(i.-iii.)).

The adopted pH criterion for FW2-NT waters of southern New Jersey outside the boundaries of Pinelands Protection and Preservation area are based on the evaluation of more recent site-specific monitoring data. The USEPA recommends updating criterion as new data become available. The adopted pH criterion for southern coastal FW2-NT waters is based on the natural conditions and therefore, meet the Federal requirements that numerical criteria should be based on CWA Section 304(a) guidance modified to reflect site-specific conditions (40 CFR 131.11(b)1(ii)).

The adopted amendments to Temperature criteria are based on more recent updated data and developed to protect native fish species. Therefore, no further analysis is required.

The adopted saltwater criteria for cyanide are less stringent than the Federal criteria. However, the revised criteria were based on more recent toxicity data available. The USEPA recommends updating criterion as new toxicity data become available. In addition, these revised criteria were derived based on the USEPA recommended methodology and have been reviewed and approved by the USEPA for consistency. Therefore, the adopted criteria meet the Federal requirements at 40 CFR 131.11(a)1.

N.J.A.C. 7:9B-1.15 contains specific waterbody classification listings, antidegradation designations, and instructions for the use of the classification tables. The waterbody classifications and antidegradation designations are arranged by major drainage basin. The Federal water quality regulations at 40 CFR 131.10 require that states specify appropriate water uses to be achieved and protected. The Department's SWQS waterbody classification listing is a tool to identify these designated uses such as protection and propagation of fish, shellfish, and wildlife, recreation in and on water, public water supplies, agricultural and industrial. Therefore, these waterbody classifications are consistent with the Federal regulations.

In addition, 40 CFR 131.12 establishes requirements for states to develop and adopt antidegradation policies and implementation procedures to ensure that the level of water quality needed to protect existing uses is maintained, and that water quality better than necessary to protect existing uses is maintained and protected unless demonstrations are made in support of lowering the water quality. The adopted changes in antidegradation designation identify the level of protection and implementation procedures that must be followed. The antidegradation designations are consistent with, and do not exceed Federal standards. Therefore, no further analysis is required.

Full text of the adoption follows (additions indicated in boldface *__thus__*; deletions indicated in brackets *[thus]*):

CHAPTER 9B SURFACE WATER QUALITY STANDARDS

SUBCHAPTER 1. SURFACE WATER QUALITY STANDARDS

7:9B-1.5 Statements of policy

(a) General policies are as follows:

1. - 7. (No change.)

8. (No change from proposal.)

9. *[Integrated Water Quality Monitoring and Assessment Methods developed pursuant to N.J.A.C. 7:15-6.2 shall be used to identify whether waterbodies meet water quality standards as required by Section 303(d) of the Federal Clean Water Act.]* ***The Department uses the Integrated Water Quality Monitoring and Assessment Methods developed pursuant to N.J.A.C. 7:15-6.2 to evaluate water quality data and identify waters where water quality does not meet the Surface Water Quality Standards at N.J.A.C. 7:9B as required by Section 303(d) and 305(b) of the Federal Clean Water Act.***

(b) (No change.)

(c) General technical policies are as follows:

1. - 5. (No change.)

6. (No change from proposal.)

7. (No change.)

8. Temperature criteria at N.J.A.C. 7:9B-1.14(d) apply unless an alternative effluent limitation is approved in accordance with Section 316(a) of the Clean Water Act, 33 U.S.C. 1326(a).

i. Properly treated wastewater discharge shall be deemed in compliance with the temperature criteria if the ambient stream temperature measured outside the regulatory heat dissipation area does not increase by more than:

(1) 0.6 degrees Celsius *[(1.1 degrees Fahrenheit)]* in FW2-TP waters;

(2) 1.2 degrees Celsius *[(2.2 degrees Fahrenheit)]* in FW2-TM waters;

(3) 2.8 degrees Celsius *[(5.0 degrees Fahrenheit)]* in FW2-NT waters;

(4) 2.2 degrees Celsius *[(4.0 degrees Fahrenheit)]* in SE and SC waters from September through May; and

(5) 0.8 degrees Celsius *[(1.5 degrees Fahrenheit)]* in SE and SC waters from June through August.

ii. (No change.)

(d) Antidegradation policies applicable to all surface waters of the State are as follows:

1. (No change from proposal.)

i. The maintenance, migration, and*[, as appropriate,]* propagation of threatened or endangered species (as defined under the Federal Endangered Species Act of 1973 as amended, 16 U.S.C. 1531 *et seq*., and/or the New Jersey Endangered and Nongame Species Conservation Act N.J.S.A. 23:2A-1 et seq.) is considered an existing use that must be maintained.

ii. - iii. (No change in text.)

iv. - v. (No change from proposal.)

vi. A waterway or waterbody from which *[raw]* water is transferred to another waterway or waterbody shall be treated as a tributary to the waterway or waterbody receiving the transferred water.

vii. (No change from proposal.)

2. (No change from proposal.)

(e) Water quality-based effluent limitation policies are as follows:

1. - 3. (No change.)

4. (No change from proposal.)

5. - 7. (No change.)

(f) (No change from proposal.)

(g) Nutrient policies are as follows:

1. (No change.)
2. (No change from proposal.)
3. The Department may develop watershed-specific translators or site-specific criteria through a Total Maximum Daily Load (TMDL). Site specific criteria shall be incorporated at N.J.A.C. 7:9B-1.14(g)*[as specified at N.J.A.C. 7:9B-1.5(c)6iii]*.
4. The Department shall establish water quality based effluent limits for nutrients, in addition to or more stringent than the effluent standard in N.J.A.C. 7:14A-*[5.3]***12.7***, as necessary to meet a wasteload allocation established through a TMDL, or to meet the criteria at N.J.A.C. 7:9B-1.14(d)5*[ii or iii, where the Department has determined that nutrients render the waters unsuitable pursuant to N.J.A.C. 7:9B-1.14(d)5i]*.
5. (No change from proposal.)

(h) (No change from proposal.)

7:9B-1.14 Surface water quality criteria

(a) - (c) (No change.)

(d) Surface Water Quality Criteria for FW2, SE, and SC Waters:

1. - 2. (No change.)

3. - 4. (No change from proposal.)

5.	Phosphorus, Total (mg/L)	*[i.	Concentrations shall not render the waters unsuitable for the existing or designated uses. If the Department determines that concentrations render the waters unsuitable for the existing or designated uses; due to objectionable algal densities, nuisance aquatic vegetation, abnormal diurnal fluctuations in dissolved oxygen or pH, changes to the composition of aquatic ecosystems, or other indicators of use impairment; criteria in (d)5ii or iii below apply; unless watershed-specific translators are established pursuant to N.J.A.C. 7:9B-1.5(g)3.]*	*[FW2]*

	*[ii.]***i.*** Lakes: Phosphorus *[concentrations]*** *as total P** shall not exceed 0.05 *[mg/L as Total P]* in any lake, pond or reservoir, or in a tributary at the point where it enters such bodies of water, ***except where watershed or site-specific criteria are developed pursuant to N.J.A.C. 7:9B-1.5(g)3.***	FW2
	*[<u>iii</u>.]***ii.*** *[Non-tidal]* Streams: ***Except as necessary to satisfy the more stringent criteria in paragraph i above or where watershed or site-specific criteria are developed pursuant to N.J.A.C 7:9B-1.5(g)3, phosphorus as total P*** *[Phosphorus concentrations]* shall not exceed 0.1 ***in any stream, unless it can be demonstrated that total P is not a limiting nutrient and will not otherwise render the waters unsuitable for the designated uses*** *[mg/L as Total P]*.	FW2

6. - 10. (No change.)

11.	Temperature	i.	*****[No thermal alterations which would cause temperatures to]****Temperatures shall not*** exceed a daily maximum of 22 degrees Celsius *[(71.6 degrees Fahrenheit)]* or rolling seven-day average of the daily maximum of 19 degrees Celsius *[(66.2 degrees Fahrenheit)]*, unless due to natural conditions	FW2-TP
		ii.	*****[No thermal alterations which would cause temperatures to]****Temperatures shall not*** exceed a daily maximum of 25 degrees Celsius *[(77 degrees Fahrenheit)]* or rolling seven-day average of the daily maximum of 23 degrees Celsius *[(71.6 degrees Fahrenheit)]*, unless due to natural conditions	FW2-TM
		iii.	*****[No thermal alterations which would cause temperatures to]****Temperatures shall not*** exceed a daily maximum of 31 degrees Celsius *[(87.8 degrees Fahrenheit)]* or rolling seven-day average of the daily maximum of 28 degrees Celsius *[82.4 degrees Fahrenheit)]*, unless due to natural conditions	FW2-NT
		iv.	(No change from proposal.)	(No change.)
		v.	(No change from proposal.)	(No change.)

12. - 13. (No change.)

(e) (No change.)

(f) - (h)(No change from proposal.)

7:9B-1.15 Surface water classifications for the waters of the State of New Jersey

(a) - (b) (No change from proposal.)

(c) The following surface water classifications are for waters of the Atlantic Coastal Basin:

Waterbody		Classification
. . .		
ABSECON CREEK - CEDAR RUN	(No change from proposal.)	
. . .		
GREAT EGG HARBOR RIVER		
(Berlin)	(No change.)	
(Berlin)	(No change.)	
(Winslow)	(No change.)	
(Mays Landing) – Rt. 40 bridge to Great Egg Harbor, except those tributaries described separately below		SE1
(Mays Landing)	(No change.)	
(Egg Harbor) - Tributaries and all other waters within MacNamara Wildlife Management Area, except tributary described below		*__FW2-NT__/*SE1(C1)
(Tuckahoe)	(No change.)	
. . .		
MIRY RUN - TOMS RIVER	(No change from proposal.)	

(d) The following surface water classifications are for waters of the Upper Delaware River Basin:

Waterbody		Classification
ALLOWAY CREEK - MUDDY RUN	(No change from proposal.)	
MUSCONETCONG RIVER	(No change.)	
TRIBUTARIES		
(Anderson) - (Port Murray)	(No change.)	
*[Scout Run (Warren Glen) – Entire length		FW2-NT(C1)]*
(S. of Point Mtn.) - (Waterloo)	(No change.)	

MUSKEE CREEK - WIDGEON PONDS (No change from proposal.)

(e) - (k) (No change from proposal.)

CHAPTER 14A NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

SUBCHAPTER 13. EFFLUENT LIMITATION FOR DSW PERMITS

7:14A-13.5. Determination of the Reasonable Potential to Cause an Excursion above the SWQS as a Basis for Requiring Inclusion of Water Quality Based Effluent Limitations

(a) - (b) (No change.)

(c) The dilution of the effluent in the receiving water shall be determined in accordance with N.J.A.C. 7:9B-1.5*[(c)4]* ***(h)***.

7:14A-13.7. Determination of Water Quality Based Effluent Limitations Based on Narrative Criteria

(a) Where the Department has not established a numerical water quality criterion for a specific chemical pollutant but has determined that such a pollutant is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion or potential excursion above a narrative criterion in the Surface Water Quality Standards, the Department shall:

1. Establish effluent limitations using a calculated numeric criterion utilizing the best available scientific information and developed in accordance with N.J.A.C. 7:9B-*[1.6(c)4iii]* ***1.5(c)5***; or

2. (No change.)

Based on consultation with staff, I hereby certify that the above statements, including the Federal Standards Analysis addressing the requirements of Executive Order 27 (1994), permit the public to understand accurately and plainly the purposes and expected consequences of this readoption with amendments. I hereby authorize this adoption.

Date:_____

_____

Mark N. Mauriello, Acting Commissioner

Department of Environmental Protection