UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8960

FEB 19 2008

Michael W. Sole
Secretary
Florida Department of Environmental Protection
Marjory Stoneman Douglas Building, MS-10
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

Dear Mr. Sole:

The U.S. Environmental Protection Agency (EPA) has completed its review of amendments to chapter 62-303, Florida Administrative Code (F.A.C.). These amendments were adopted by the State on September 28, 2006, December 5, 2006, and June 28, 2007, and submitted for EPA review by letter dated September 14, 2007, from Thomas M. Beason, General Counsel, Florida Department of Environmental Protection (FDEP), to James Palmer, Regional Administrator, EPA Region 4. The letter submitting the amendments included a certification that the "enclosed amendments to chapter 62-303, Florida Administrative Code, were duly adopted pursuant to state law."

EPA is approving provisions of chapter 62-303, F.A.C., that have been determined by EPA to be new or revised water quality standards for the State. EPA has determined that these new and revised water quality standards are consistent with 40 C.F.R. Part 131 and the Clean Water Act. The enclosed document, "United States Environmental Protection Agency Determination Upon Review of Amended Florida Administrative Code Chapter 62-303, Identification of Impaired Surface Waters" contains a listing of the specific provisions that EPA has determined to be new and revised standards for the State and the rationale that serves as the basis of EPA's approval of these provisions.

EPA's action to approve the new and revised water quality standards in chapter 62-303, F.A.C., is being taken today pursuant to the Agency's authorities in § 303(c) of the Clean Water Act. Other than with regard to the new and revised standards provisions that relate to the issue of recreation use attainment, EPA has, under section 7(a)(2) of the Endangered Species Act (ESA), initiated consultation with the U.S. Fish and Wildlife Service and the U.S. National Marine Fisheries Service regarding EPA's approval action. EPA's approval decision for the provisions that are part of that consultation is subject to completion of ESA consultation. We will notify FDEP of the results of the section consultation upon its completion. EPA's approval of the new and revised standards provisions that relate to the issue of recreation use attainment is not subject to the outcome of ESA consultation.

For your information, the enclosure to this letter can be viewed on the EPA Region 4 website, at htttp://www.epa.gov/region4/water/wqs/index.html. If you have questions regarding EPA's approval of these new and revised standards, please call me at 404/562-9470.

Sincerely,

James D. Giattina
Director
Water Management Division

cc: Thomas M. Beason (FDEP) (w/o enclosure)
Jerry Brooks (FDEP) (w/o enclosure)
Daryll Joiner (FDEP) (w/o enclosure)

Enclosure

United States Environmental Protection Agency
Determination Upon Review of Amended
Florida Administrative Code Chapter 62-303
Identification of Impaired Surface Waters

I. Executive Summary

On September 14, 2007 the State of Florida (through its Department of Environmental Protection (FDEP)), submitted its regulation captioned "Identification of Impaired Surface Waters" (Impaired Waters Rule or IWR or Rule), as amended in 2007, to the U.S. Environmental Protection Agency (EPA or the Agency) Region 4 for review, pursuant to section 303(c) of the Clean Water Act (CWA or Act).

EPA had previously reviewed the IWR pursuant to a referral from the United States District Court for the Northern District of Florida. EPA examined the entire IWR to determine which provisions of the rule changed Florida's then existing water quality standards. On July 6, 2005, EPA issued its Determination on Referral (2005 Determination), which explained the analytical framework applied during that examination and identified the provisions of the Rule that EPA determined to be new or revised water quality standards. EPA subsequently reviewed, pursuant to section 303(c) of the Act, those portions of the IWR determined to constitute new or revised water quality standards and, on October 3, 2005, disapproved them as new or revised water quality standards. EPA concluded that while Florida adopted the IWR through a rulemaking process, the State had not followed its legal procedures for revising or adopting standards as required by 40 C.F.R. § 131.5(a)(3). Florida subsequently revised the IWR to address both the procedural issue leading to EPA's disapproval and to make substantive and editorial changes to the IWR.

In its review of the amended IWR, EPA applied the same analytical framework that it used in the 2005 Determination. That framework is described more fully below. In its review of the amended IWR, EPA examined those portions of the rule that were amended in 2007. Unless specifically identified and explained otherwise below, EPA's 2005 Determination remains unchanged for those provisions of the IWR that were not amended by the State in 2007.[1] For a limited number of provisions, EPA has changed the decision set out in the 2005 Determination, based either on additional information received from FDEP or on changes to the IWR that affected EPA's previous determination. A summary of these provisions and the basis for EPA's revised determination are set out in Section V. below.

For the reasons discussed below, EPA has concluded that several portions of the amended IWR are new or revised water quality standards, but also has concluded that many portions of the amended IWR are not new or revised water quality standards. Pursuant to section 303(c) of the CWA, EPA has reviewed those portions of the IWR that the Agency has determined to be new or revised water quality standards. Today we are approving all those provisions of the IWR that are new or revised water quality standards, including those provisions found to be new or revised water quality standards in this Determination and those provisions found to be new or revised water quality standards in EPA's July 2005 Determination, except to the extent that EPA modified it July 2005 Determination in this document. A complete list of the IWR provisions that EPA has determined to be water quality standards is set out in Table 1 below. EPA has determined that those new or revised water quality standards are consistent with the requirements

[1] EPA did not review provisions of the amended IWR where the only change was to the numbering of the provision, based on other changes to the IWR. EPA has addressed such numbering changes in Table 2, infra. In that table, provisions are listed by their number in the amended IWR.

of the Act and 40 C.F.R. Part 131. Therefore, EPA is approving those new or revised water quality standards.

II. Statutory and Regulatory Background

CWA sections 303(a)-(c) direct states to establish water quality standards. 33 U.S.C. § 1313(a)-(c). These standards describe the desired condition of a waterbody and consist of three principal elements: (1) the "designated uses" of the state=s waters, such as public water supply, recreation, propagation of fish, or navigation; (2) Acriteria" specifying the amounts of various pollutants, in either numeric or narrative form, that may be present in those waters without impairing the designated uses; and (3) antidegradation requirements, providing for protection of existing water uses and limitations on degradation of high quality waters. See 33 U.S.C. § 1313(c); PUD No. 1 of Jefferson County v. Washington Department of Ecology, 511 U.S. 700, 704-05 (1994); Sierra Club v. Meiburg, 296 F.3d 1021, 1025 (11th Cir. 2002) ("To determine the water quality standard, a state designates the use for which a given body of water is to be protected (fishing, for example), and then determines the level of water quality needed to safely allow that use. That level becomes the water quality standard for that body of water."). EPA's regulations at 40 C.F.R. Part 131 describe the minimum requirements for these three elements of water quality standards. EPA has also issued guidance for states and tribes in EPA=s Water Quality Standards Handbook and the Technical Support Document for Water Quality-based Toxics Control.[2]

[2] Water Quality Standards Handbook, USEPA-823-B-94-005, August 1994, http://www.epa.gov/waterscience/standards/handbook/; Technical Support Document for Water Quality-based Toxics Control, USEPA/505/2-90-001; PB91-127415; March 1991. http://www.epa.gov/npdes/pubs/owm0264.pdf.

The CWA sets forth a cooperative system under which states have the primary authority for setting water quality standards and EPA reviews a state's new or revised standards as they are adopted. See 33 U.S.C. § 1251(b), 1313(c). Under section 303(c) of the Act, 33 U.S.C. 1313(c), EPA is responsible for reviewing standards adopted by the states to ensure their consistency with the requirements of the Act. As of May 30, 2000, any new or revised water quality standards adopted by states must be approved by EPA in order for those standards to be effective for any Clean Water Act purpose. 40 C.F.R. § 131.21(c)(2).[3] Section 303(c) of the Act provides two distinct mechanisms by which EPA oversees state development of water quality standards. First, pursuant to section 303(c)(2)(A), states submit all new or revised standards to EPA for approval or disapproval.[4] 33 U.S.C. § 1313(c)(2)(A). EPA must then approve or disapprove these standards within 60 or 90 days, respectively, of their submittal.[5] Second, section 303(c)(4)(B)

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[3] 40 C.F.R. 131.21(c)(2) provides in pertinent part:

> If a State or authorized Tribe adopts a water quality standard that goes into effect under State or Tribal law on or after May 30, 2000, then once EPA approves that water quality standard, it becomes the applicable water quality standard for purposes of the Act unless EPA has promulgated a more stringent water quality standard for the State or Tribe that is in effect, in which case the EPA-promulgated water quality standard is the applicable water quality standard for purposes of the Act until EPA withdraws the Federal water quality standard.

[4] Section 303(c)(2)(A) of the CWA provides, in pertinent part:

> Whenever the State revises or adopts a new standard, such revised or new standard shall be submitted to the Administrator. Such revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such uses. Such standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter...

[5] Section 303(c)(3) of the CWA provides, in pertinent part:

allows EPA, even in the absence of any submission of new or revised standards by a state, to publish revised water quality standards for a state Ain any case where the Administrator determines that a new or revised standard is necessary to meet the requirements of the Act." 33 U.S.C. § 1313(c)(4)(B). This latter provision allows EPA to assess the continued sufficiency of previously approved standards in light of changed circumstances or new data, and ensures that state waters will continue to meet the goals of the CWA even if a state fails to submit new or revised water quality standards to EPA.

On May 26, 1999, the Florida legislature enacted the Florida Watershed Restoration Act (WRA), which was signed into law by the Governor and became effective on June 10, 2002. Fla. Stat. § 403.067. Among other things, the WRA directed FDEP to develop and adopt by rule a methodology to identify waters that are not attaining the state=s approved water quality standards and, therefore, are required to be included on any future impaired waters list developed by the State pursuant to section 303(d) of the Act. Id. at Subsection 3. In early 2000, FDEP formed a Technical Advisory Committee to help develop a clear, consensus-based method to define impaired lakes, streams, and estuaries.

On April 26, 2001, FDEP adopted Florida Administrative Code (FAC) Chapter 62-303, entitled Identification of Impaired Surface Waters and known as the Impaired Waters Rule. The

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> If the Administrator, within sixty days after the date of submission of the revised or new standard, determines that such standard meets the requirements of this chapter, such standard shall thereafter be the water quality standard for the applicable waters of that State. If the Administrator determines that any such revised or new standard is not consistent with the applicable requirements of this chapter, he shall not later than the ninetieth day after the date of submission of such standard notify the State and specify the changes to meet such requirements...

IWR establishes a methodology for FDEP to identify waterbodies that, despite the application of technology-based limitations, still do not meet water quality standards, and report to EPA such waters, including the list of impaired waters requiring total maximum daily loads (TMDLs), pursuant to section 303(d) of the Act and 40 C.F.R. Part 130.

As a result of the litigation discussed more fully below, EPA reviewed the Impaired Waters Rule to determine whether any portions of the IWR constituted new or revised water quality standards subject to review under section 303(c) of the Act, 33 U.S.C. 1313(c). On July 6, 2005, EPA issued its 2005 Determination, identifying those provisions of the Rule that EPA determined to be new or revised water quality standards. EPA then reviewed those provisions under section 303(c) of the CWA, and on October 3, 2005, disapproved those new or revised water quality standards. EPA concluded that while Florida adopted the IWR through a rulemaking process, the State had not followed its legal procedures for revising or adopting standards as required by 40 C.F.R. § 131.5(a)(3).

Florida subsequently amended the IWR on three separate occasions to address both the procedural issue leading to EPA's disapproval and to make substantive and editorial changes to the rule. On September 28, 2006, December 5, 2006, and June 26, 2007, Florida's Environmental Regulation Commission adopted amendments to the IWR. On September 14, 2007, FDEP submitted the amended IWR to EPA for review, pursuant to section 303(c) of the Act.

III. Litigation History

On December 2, 2002, a citizen suit was filed against EPA in the United States District Court for the Northern District of Florida.[6] The plaintiffs alleged that the IWR modified Florida=s water quality standards and that EPA failed to perform a mandatory duty under the CWA where EPA had not reviewed the IWR for consistency with the requirements of the CWA. The District Court ruled in favor of EPA, concluding that Florida had not undertaken formal rulemaking necessary to make the IWR part of its water quality standards, and that EPA had not approved any modifications to Florida=s water quality standards.[7] Accordingly, the Court found that the IWR was not part of the State=s water quality standards and could not be relied on by EPA in its review of Florida=s list of impaired waters developed pursuant to section 303(d) of the Act (i.e., EPA must apply Florida's water quality standards for this purpose without regard to the IWR). The Court concluded that the IWR neither Aformally, nor in effect, established new or modified existing water quality standards or policies generally affecting those water quality standards" and, therefore, that EPA had no mandatory duty to review the IWR. Id.

The U.S. Court of Appeals for the Eleventh Circuit reversed the District Court, finding that the IWR could potentially be a change to Florida=s water quality standards but that, based on the record developed below, it could not make such a determination either way. The Eleventh Circuit remanded the case back to the District Court for additional fact-finding to determine whether or not application of the IWR by FDEP effected a change to the State=s water quality

[6] Florida Public Interest Research Group, et. al. v. EPA, No. 4:02cv408WS-WCS (N.D. Fla.).
[7] See Florida Public Interest Research Group (FPIRG) v. EPA, No. 4:02cv408WC-WCS (N.D. Fla.), Doc. #64 (May 29, 2003) at 12.

standards.[8] The District Court subsequently referred the matter to EPA for the Agency to determine whether provisions of the IWR constituted new or revised water quality standards.[9]

In July 2005, EPA issued its Determination on Referral, finding that, as applied by Florida, several portions of the IWR constituted new or revised water quality standards and that many portions of the IWR were not new or revised water quality standards. Pursuant to section 303(c) of the CWA, EPA subsequently disapproved those portions of the IWR which it determined to be new or revised water quality standards, because those provisions were not duly adopted as standards by FDEP. On February 15, 2007, the District Court upheld EPA's 2005 Determination, holding that EPA's review of the IWR considered the relevant factors as set out by the CWA and its implementing regulations.[10]

IV. EPA's Analysis

As discussed above, water quality standards have three components: designated beneficial uses; water quality criteria to attain such uses; and anti-degradation policies. PUD No. 1 of Jefferson County, 511 U.S. at 704-05; Sierra Club v. Meiburg, 296 F.3d at 1025.; see also 40 C.F.R. § 131.3(i) (definition of water quality standards as designated uses and water quality criteria); 40 C.F.R. § 131.12 (antidegradation requirements). No provision of the IWR relates to anti-degradation. EPA determined that a few provisions of the amended Rule relate to designated uses because those provisions defined or established the designated uses associated with Florida's waters. Table 1 below summarizes EPA's conclusions regarding the provisions of the amended IWR that constitute new or revised water quality standards pursuant to section

[8] See FPIRG, et. al. v. EPA, 386 F.3d 1070 (11th Cir. 2004).
[9] See Florida Public Interest Research Group (FPIRG) v. EPA, No. 4:02cv408WC-WCS (N.D. Fla.), Doc. #100 (April 8, 2005).
[10] See Florida Public Interest Research Group (FPIRG) v. EPA, No. 4:02cv408WC-WCS (N.D. Fla.), Doc. #185 (February 15, 2007).

303(c). The component of water quality standards most relevant to EPA's review of the amended IWR is the Acriteria" component. Water quality criteria are Aelements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use." 40 C.F.R. § 131.3(b). Water quality criteria describe the desired ambient condition of a waterbody to support a particular designated use.[11]

Water quality criteria for protection of aquatic life also usually have three components. The first component is the Amagnitude," level, or concentration value (e.g., 10 mg/l) of a pollutant or pollutant indicator that can occur in the ambient water without adversely affecting the designated use (or uses) that the criteria is (or are) intended to support. The second component is "duration," or the period of time over which the in-stream concentration is averaged for comparison with criteria concentrations. Duration is often referred to as an averaging period. The third component is "frequency," or how often the magnitude/duration condition can be exceeded within a specified period and still protect the designated use. EPA=s Technical Support Document for Water Quality-based Toxics Control describes the importance of the magnitude-duration-frequency format:

> [B]ecause of variation in the flows of the effluent and the upstream receiving water as well as variation in the concentrations of pollutants in the upstream effluent and in the receiving water, a simple format, such as specifying concentration that must not be exceeded at any time or place, is not realistic. Furthermore, such a simple format does not take into account the fact that aquatic organisms can tolerate higher concentrations of pollutants for short periods of time than they can tolerate throughout a complete life cycle. . . . Use of this concentration-duration-frequency format allows water quality criteria for aquatic life to be adequately

[11] Designated uses are those uses specified in water quality standards for each water body or segment whether or not they are attained. 40 C.F.R. § 131.3(3)(f).

> protective without being as overprotective as would be necessary if criteria were expressed using a simpler format.

See Attachment 1 at D-1.[12]

Accordingly, in considering the amended IWR, EPA interprets the CWA and its implementing regulations to include as "water quality criteria" those provisions of the IWR that either define, change, or establish the magnitude (e.g., concentration), duration, or frequency that the State would use to determine when a waterbody is attaining any applicable water quality standards. EPA also refers to magnitude, duration, and frequency as the established "ambient condition" or "level of protection" afforded by water quality criteria.

EPA understands that provisions in the IWR apply only to water quality attainment decisions used to identify water quality limited segments for addition to the section 303(d) list and they do not apply to permitting. See Fla. Admin. Code 62-303.100(3). However, those provisions of the IWR relating to magnitude, duration and frequency of concentration exceedances do define the "ambient condition" or Alevel of protection" that the State would affords waters for purposes of making attainment decisions. An attainment decision is one where a state decides what it means to attain or to not attain any "water quality standard applicable to such waters" for purposes of establishing TMDLs under section 303(d)(1)(A) of the Act, 33 U.S.C. § 1313(d)(1)(A). TMDLs, in turn, inform permit decisions; under federal regulations (applicable to states authorized to administer the National Pollutant Discharge Elimination System permitting program), the permitting agency must ensure that limits

[12] Only the relevant Appendix of EPA's Technical Support Document for Water Quality-based Toxics Control has been provided for convenience. The entire document may be found at www.epa.gov.npdes.pubs/owm0264.pdf.

developed to protect a water quality criterion are consistent with the assumptions and requirements of any available wasteload allocation for the discharge in an applicable TMDL. 40 C.F.R. § 122.44(d)(vii)(B). For these reasons, in order to determine whether any provision of the amended IWR constitutes a new or revised water quality criteria, EPA reviewed each provision of the amended IWR based on a two-part analysis: (1) does the provision relate to an attainment decision? and (2) if so, does the provision define, change, or establish a designated use or define, change, or establish the magnitude, duration, or frequency related to water quality criteria necessary to support a designated use? Provisions that affect attainment decisions made by the State and that define, change, or establish the level of protection to be applied in those attainment decisions, affect existing standards implemented under section 303(c) of the Act. These provisions constitute new or revised water quality standards.

On the other hand, provisions that merely describe the sufficiency or reliability of information necessary for a state to make an attainment decision, and do not change a level of protection, are methodologies to implement a state's obligations under section 303(d) of the Act, rather than water quality standards under section 303(c). See 40 C.F.R. § 130.7(b)(6). These provisions describe the circumstances according to which a state makes an attainment decision in the first instance; such provisions contain policy choices about the reliability of data. They do not, however, describe the condition of the water body assessed. EPA interprets CWA section 303(c)(2)(A), and its implementing regulations at 40 C.F.R. Part 131, to exclude such a provision from consideration as a "water quality standard" as that term is used in section 303(c)(2)(A) of the CWA and its implementing regulations at 40 C.F.R. §§ 131.3(b), 131.3(i), 131.5(a)(2), 131.6(c), 131.11, and 131.20. Pursuant to these regulations, "water quality standards" consist of

"designated uses" and "criteria" that are defined as descriptions of the ambient conditions of a water body. See CWA section 303(c)(2)(A) [33 U.S.C. § 1313(c)(2)(A)] and 40 C.F.R. §§ 131.3(i) (definition of water quality standard); 131.3(b) (definition of water quality "criteria"); 131.3(f) (definition of "designated uses"); and 131.3(i) (definition of water quality limited segment), also defined at 40 C.F.R. § 130.2(j). A listing policy provision that describes sufficiency or reliability of information is not a water quality standard because it is not a "designated use" or a "criterion." Such an information-based consideration is not a "designated use" because it does not establish the use selected by the state for any water. Such a consideration is not a "criterion" because it does not establish an ambient condition or level of protection by specifying a magnitude, duration, or frequency of water quality criteria exceedance that the state uses to identify water quality limited segments. Therefore, this type of provision is not a water quality standard as that term is used in section 303(c) of the CWA or the regulations at 40 C.F.R. Part 131.

For example, some provisions of the IWR relate to the requirement pursuant to section 303(d) of the Act and 40 C.F.R. § 130.7(b) of "identification and priority setting for water quality limited segments still requiring TMDLs." In particular, 40 C.F.R. § 130.7(b)(5) requires states to "assemble and evaluate all existing and readily available water quality-related data and information to develop the [section 303(d)] list." Other provisions of the IWR relate to the requirement pursuant to section 303(d) of the CWA and 40 C.F.R. § 130.7(b)(6)(iii) that states provide a rationale for decisions not to rely on certain data and information in developing the section 303(d) list. Primary examples of provisions of the IWR that are only section 303(d) methodologies include minimum sample sizes, "age of data" screens, and the provision that FDEP identify the pollutant causing a water quality impairment before including that water on

the section 303(d) list. These provisions do not relate to the ambient condition in the waterbody, i.e., what level of pollutant (or pollutant indicator) may be in the waterbody before determining that the waterbody is not meeting all applicable water quality standards. Instead, these provisions relate to the information necessary to reach an attainment decision pursuant to section 303(d) of the Act and 40 C.F.R. § 130.7(b)(5) - (6) (as compared to section 303(c) of the Act) and, as such, do not constitute water quality standards. Finally, the IWR contains many administrative and formatting provisions for assembly and adoption of the State's list for the purposes of CWA section 303(d), which also do not constitute water quality standards. Because EPA only has a duty to review new or revised water quality standards pursuant to CWA section 303(c), NWF v. Browner, 127 F.3d 1126, 1131 (D.C. Cir. 1997), EPA is not under a duty to review as new or revised water quality standards provisions of the IWR that implement other sections of the Act.

Table 1 below summarizes EPA's conclusions regarding the provisions of the amended IWR that constitute new or revised water quality standards pursuant to section 303(c) of the Act because those provisions establish an ambient condition or level of protection by specifying a magnitude, duration, or frequency of water quality criteria exceedance that the State uses to identify water quality limited segments, or further describes or establishes a designated use. Table 2 identifies those provisions of the amended IWR that implement other sections of the Act or are otherwise unrelated to water quality standards. EPA has determined that specified provisions of the amended IWR set out in Table 1 below are water quality standards because they define or revise an ambient condition or "level of protection" afforded the state=s waters. In other words, with respect to criteria, these provisions describe a new or different (1) level or concentration of pollutant or pollutant indicator allowed in the water, (2) duration or averaging

period over which such concentrations or levels may occur, or (3) frequency of exceedance of those levels that the State regulation uses to assess whether a water is attaining applicable water quality standards. A more detailed analysis of all provisions, as well as EPA's rationale underlying each decision, is located in the administrative record for this determination.

EPA has determined that other provisions of the amended IWR do not constitute new or revised water quality standards for a number of reasons as also shown in Table 2, below. First, there are introductory statements with no regulatory effect. EPA does not review such provisions as substantive water quality standards. Second, there are provisions that simply restate Florida's existing, EPA-approved water quality standards found at FAC Chapter 62-302. Finally, as noted above, EPA has determined that a number of remaining provisions of the amended IWR are not water quality standards because they implement other provisions of the Act and do not affect an attainment decision related to a level of protection afforded by Florida to its ambient waters, as described more fully above.[13]

[13] The fact that a provision of the IWR is not reviewed by EPA as a new or revised water quality standard does not remove that provision from EPA's oversight responsibilities. To the extent that such provisions do not comply with the requirements for developing impaired water lists pursuant to section 303(d) of the Act and its implementing regulations at 40 C.F.R. § 130.7(b), EPA has taken and will continue to take action as necessary when reviewing Florida's section 303(d) list submittals.

Table 1

New or Revised Water Quality Standards[14]		
Topic	**Sections Covered**	**Subsections Identified**
Aquatic Life Assessment: Use of criteria duration and frequency values for attainment decisions	62-303.320, .420 & .720	320(4)(a), 320(5), 320(6)(b), 420(6), 720(2)(m)
Biological Assessment: Use of biological thresholds for aquatic life use support.	62-303.330, .430, & .720	330(2), 330(3)(a), 330(3)(b), 430(1), 430(2), 430(3), 720(2)(b)
	62-303.200	200(1), 200(2), 200(8), 200(22)
Nutrient Assessment: Use of numerical nutrient thresholds for attainment decisions.	62-303..350, 351, .352, .353, .450 & .720	350(2)(c), 350(3), 351(2), 352(entire section), 353(entire section), 450(1), 720(2)(j)
	62-303.200	200(6), 200(11), 200(12), 200(25)
Recreation Use Assessment	62-303.360, .460, & .720	360(1)(c), 460(1), 460(2), 720(2)(e)
Natural Conditions Provision	62-303.420	420(1)(b)
	62-303.200	200(18)

Table 2

NOT New or Revised Water Quality Standards		
Topic (Listing & Delisting)	**Sections Covered**	**Number of Subsections Identified**
Scope and Intent	62-303.100	Entire section (5 subsections)
Planning and Verified Lists	62-303.150, .300, .400, .700, .710	150 (entire section), 300(entire section), 400(entire section), 700(entire section),

[14] Please note that these tables provide a brief summary of EPA=s determination regarding the IWR. For a complete explanation of EPA=s decision see Appendix D.

NOT New or Revised Water Quality Standards		
Topic (Listing & Delisting)	**Sections Covered**	**Number of Subsections Identified**
		710(entire section).
Definitions	62-303.200	200(3), 200(4), 200(5), 200(7), 200(9), 200(10), 200(13), 200(14), 200(15), 200(16), 200(17), 200(19), 200(20), 200(21), 200(23), 200(24), 200(26), 200(27), 200(28), 200(29), 200(30)
Aquatic Life Use Support	62-303.310 & .410	310(entire section), 410
Exceedances of Aquatic Life-Based Water Quality Criteria	62-303.320 & .420	320 excluding 320(4)(a), 320(5), and 320(6)(b), 420(1) excluding 420(1)(b), 420(2), 420(3), 420(4), 420(5), 420(7)
Biological Assessment	62-303.330 & .430	330(1), 330(3) – prefatory language before 330(3)(a), 330(4), 430(4)
Toxicity	62-303.340 & .440	Sections repealed
Narrative Nutrient Criteria	62-303.350, .351, .352 & .450	350(1), 350(2) excluding 350(2)(c), 351(1), 450(2), 450(3)
Primary Contact and Recreation Use	62-303.360 & .460	360 excluding 360(1)(c), 460(3), 460(4), 460(5)
Fish and Shellfish Consumption Use	62-303.370 & .470	370 (entire section), 470 (entire section)
Drinking Water Use	62-303.380 & .480	380(entire section), 480(entire section)
Prioritization	62-303.500	Entire section (4 subsections)
Pollution Control Mechanisms	62-303.600	Entire section (2 subsections)
Impairment Delisting Procedures	62-303.720	Entire section except 720(2)(b), 720(2)(e), 720(2)(j), and 720(2)(m)
Impairment of Interstate & Tribal Waters	62-303.810	Entire section

V. Changes from EPA's 2005 Determination

For a limited number of provisions in the amended IWR, EPA has changed its earlier decision in the 2005 Determination, based either on additional information received from FDEP or on changes to the IWR which affected EPA's determination. A summary of these provisions and the basis for EPA's revised determination are set out below.

Statistical Test Based on a Binomial Distribution

The IWR applies a statistical test based on a binomial distribution to evaluate, and in some cases eliminate, data sets (of water quality sampling data) when the State makes attainment decisions about ambient waterbodies based on such data sets. See rules 62-303.320(1) and 62-303-420(2). EPA's analysis of the binomial statistical test is set out in detail in Appendix A.

The binomial statistical test has two key components, a confidence value and a probability value. The confidence value represents the desired certainty that small sample sizes are truly representative of an entire waterbody and does not affect expectations for the underlying level of protection afforded that waterbody. In both its 2005 Determination and this Determination, EPA concluded that the confidence value functions as a data reliability provision and does not constitute a new or revised water quality standard.

In 2005, EPA determined that the probability value component of the IWR changed or further defined the frequency of Florida's currently approved water quality criteria, which are "not to be exceeded at any time," and replaced that frequency with an evaluation of water quality samples to gain confidence of an actual exceedance rate of 10% in ambient waterbodies. EPA therefore concluded that portions of rules 62-303.321, .361, .371, .381, and .420(2) constituted new or revised water quality standards. EPA has reconsidered this determination, based on both

amendments to the IWR and the supporting rationale submitted by the State. As set out more fully in Appendix A, the amended regulatory language represents either a change in FDEP's intent or a clarification of the State's original intent when it prescribed the language of the provision in 2001. Regardless, EPA now considers the probability value of 10% to serve as a data reliability "screen" related to the number of available samples that may be presumed to be unreliable, and thus excluded from consideration, before relying on the data set to conclude that criteria have been exceeded at all in a waterbody, rather than a new allowable frequency of exceedance. The purpose of the 10% probability value is to exclude data that are likely to be unrepresentative of actual ambient water conditions. The 10% probability value reflects the fact that the universe of samples assessed by FDEP are likely to include many unreliable and thus unrepresentative measurements, which do not accurately reflect the condition of the ambient water. The underlying expectations for the ambient water, however, remain unchanged: the criteria are not to be exceeded. Therefore, these provisions of the IWR are not water quality standards as that term is used in CWA section 303(c) or the regulations at 40 C.F.R. Part 131.

Biological assessments

EPA previously concluded that portions of rule 62-303.420(1)(b) constituted a new or revised water quality standard because EPA determined that, under certain circumstances, the rule entirely removed the magnitude, duration, and frequency associated with Florida's currently approved water quality criteria and replaced those components with an independent bioassessment study. FDEP has amended the IWR to clarify that the biological assessment information will be used as a confirmatory step in an independent evaluation of the "natural background" provision of Florida's current water quality standards. This use of biological information reflects additional detail on interpreting the natural background provision and, as

such, does represent a new or revised water quality standard, but not in the same way as EPA previously described in its 2005 Determination.

Rule 62-303.420(1)(b) introduces the term "reference water" as a means of evaluating natural background conditions. The term "reference water" is defined in rule 62-303.200(18). This definition is consistent with Florida's currently approved water quality standards, but includes a substantive modification to the term "natural background." The term "reference waters" refers to "limited human disturbance" that does not "produce a significant measured or predicted effect on the parameter of concern in the waterbody," whereas the term "natural background" refers to "the absence of man-induced alterations." Therefore, waters where conditions exist that might be construed as a man-induced alteration, but where no significant measurable or predicted effect on the parameter of concern results from those conditions, can now be examined in the context of the natural background provision in Florida's currently approved water quality standards. Therefore, EPA has concluded that rule 62-303.420(1)(b) also constitutes a new or revised water quality standard to the extent that the provision applies the term "reference water" to attainment decisions.

Fish and Shellfish Use Support (Dioxin)

EPA previously concluded that rule 62-303.370(2) changed or further defined the magnitude of the current dioxin criterion that EPA promulgated for Florida. The amended IWR includes rule 62-303.470(2), which provides for the listing of waters where scientifically credible and compelling information meeting the requirements of FAC chapter 62-160 indicates the

applicable human health-based water quality criteria are not met.[15] Therefore, EPA has concluded that rule 62-303.370(2) does not constitute a new or revised water quality standard.

Fish and Shellfish Use Support (Bacteria)

EPA previously concluded rule 62-303.370(3) changed or further defined the magnitude of the current Class II fecal coliform bacteria criterion. Amendments to rule 62-303.370(3) and the inclusion of rule 62-303.470(4) clearly provide for FDEP to make listing decisions based on shellfish harvesting classification information in a manner consistent with their currently applicable water quality standards.[16] Therefore, EPA has concluded that rules 62-303.370(1)-(3) do not constitute new or revised water quality standards.

Toxicity

EPA previously concluded that rules 62-303.340(2), 62-303.340(3) and 62-303.720(2)(c) constituted new or revised water quality standards because these provisions changed or further defined the frequency and duration of the water quality criteria contained in 62-302.500(1) and 62-302.530(6) that the State uses when making attainment decisions to identify water quality limited segments based on toxicity. These provisions have been deleted from the amended IWR in their entirety.

VI. EPA Approval of New or Revised Water Quality Standards

Under section 303(c) of the CWA, EPA is charged with reviewing and approving or disapproving state-adopted water quality standards. In order to determine if new or revised state water quality standards are consistent with federal regulations and the CWA, EPA reviews the water quality standards to determine: 1) whether the state has designated beneficial uses for

[15] See Appendix D, page 51.
[16] See Appendix D, pages 31 and 52.

water bodies that are consistent with the goals of CWA section 101(a)(2), and if not, whether the state has conducted a use attainability analysis to justify a different designation, see 40 C.F.R. § 131.10(j); 2) whether water quality criteria were adopted to protect the designated uses and are based on sound scientific rationale, see 40 C.F.R. § 131.11(a); 3) whether the state has adopted water quality standards according to its legal procedures; and 4) whether the state submission includes the minimum elements for water quality standards submissions specified in 40 C.F.R. §§ 131.6 and 131.20(c).

On September 14, 2007 FDEP submitted the IWR, as amended in 2007, to EPA Region 4 for review, pursuant to section 303(c) of the Act. Consistent with EPA's regulations at 40 C.F.R. §§ 131.5(a)(3) and 131.6(e), on September 14, 2007, Thomas M. Beason, General Counsel for FDEP, certified that the amended IWR was duly adopted pursuant to Florida law. FDEP's submission included all elements for water quality standards specified in 40 C.F.R. §§ 131.6 and 131.20(c). As set out more fully below, EPA is approving those provisions of the IWR which have been identified, in Table 2 above, as new or revised water quality standards.

Aquatic Life Assessment

Rule 62-303.320(4)(a)[17]

Rule 62-303.320(4)(a) revises Florida's established water quality standards by providing that, in determining whether sufficient samples are available to assess a water under the IWR, samples collected at the same location less than four days apart shall be considered as one single sample, with the median value used to represent the sampling period. This provision adds a duration component (i.e., exercising the "unless otherwise stated" clause in rule 62-302.530) to

[17] Unless otherwise stated, all rule and subsection citations are to provisions in the Florida Administrative Code.

the water quality criteria to protect aquatic life from chronic adverse effects listed under rule 62-302.530, for assessment and impairment determination purposes, which otherwise would be expressed as "the maximum not to be exceeded at any time."

This revision is consistent with EPA's current CWA section 304(a) criteria recommendations for these parameters. EPA publishes CWA section 304(a) criteria recommendations based upon sound scientific rationale to be protective of designated uses consistent with the goals of CWA section 101(a)(2). In the federal water quality standards regulations, EPA recommends these values for state adoption as their own protective criteria. EPA expresses aquatic life criteria in terms of magnitude, duration, and frequency. A 4-day averaging period has been the longstanding general recommendation for the duration component of chronic aquatic life criteria. Use of a 4-day averaging period is a commonly cited element of EPA's 1985 "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and their Uses."[18] The best technical explanation for this recommendation is found in Appendix D of EPA's 1991 "Technical Support Document for Water Quality-based Toxics Control" (EPA/505/2-90-001). EPA explains that duration and frequency components of criteria help take into account the fact that "aquatic organisms can tolerate higher concentrations of pollutants for short periods of time than they can tolerate throughout a complete life cycle." EPA recommended a 4-day averaging period for chronic aquatic life criteria in part because researchers found this to be the period of exposure where adverse effects in life cycle tests may occur. [19]

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[18] See page 62 of the document posted at http://www.epa.gov/waterscience/criteria/85guidelines.pdf

[19] The discussion of this recommendation begins on page 233 of the document posted at http://www.epa.gov/npdes/pubs/owm0264.pdf.

Although EPA's recommendation is expressed as an "average" value, averages can be expressed in different ways: mean, median, or mode. Florida's expression of a "median" value is acceptable for characterizing the central tendency of ambient field measures. A median may fall above or below an arithmetic mean average, yet it tends to more closely resemble the more commonly encountered values of a data set. Furthermore, a median can reduce the influence of possible outliers and non-detections, and the point of an averaging period is to be representative of the entire period. In practice, many if not most of FDEP's data will contain a single data point for each four day period.

Rule 62-303.320(4)(a) also provides for use of individual values to represent all measures taken in a four day period if they exceed a "worst case" value and specifically identifies these "worst case" values both in the IWR text and in Table 2 of the IWR. These worst case values correspond closely to magnitude values EPA recognizes as associated with protection against acute (i.e., short-term, lethal) effects. In these cases, FDEP believes that any exposure at or above these levels is significant enough to warrant concern for possible chronic effects regardless of conditions that may predominate over the full four day period.

Rule 62-303.320(5)

Rule 62-302.530(31) establishes Florida's water quality criteria for dissolved oxygen for various water classifications, including Class III marine waters. Rule 62-303.320(5) revises that water quality criteria by providing that when assessing predominantly marine waters against the State's daily average criteria for dissolved oxygen, where daily averages have been determined for more than one day within a four-day period, the median value of the daily averages shall be used to represent the sampling period.

This revision is consistent with EPA's current CWA section 304(a) criteria recommendations for dissolved oxygen (EPA-822-R-00-012). EPA's current criteria recommendations for saltwater dissolved oxygen apply to water from Cape Cod to Cape Hatteras, but also would be considered protective of warmer waters, where saturation would be lower on average and larval recruitment periods would be longer on average. Although these criteria are not expressed as daily averages or 4-day medians of daily averages, inferences can be made about corresponding levels of protection. EPA's criteria recommend a level protective of growth at 4.8 mg/L and a level protective of juvenile survival at 2.3 mg/L as upper and lower bounds for persistent exposure (24 hours or greater continuous exposure), and a relationship to evaluate the number of days of persistent exposure at various dissolved oxygen levels to protect larval population survival, which is the critical biological endpoint for saltwater dissolved oxygen. The criteria document also provides procedures to evaluate less than 24 hour episodic and cyclical exposure. For four days of persistent exposure, levels above approximately 3.2 mg/L will protect larval population survival.[20] Simultaneously maintaining a minimum of 4 mg/L and a daily average of 5 mg/L in most days in a four day period assures that the critical persistent exposure for a four day period is met. Furthermore, these averages should also assure that both shorter and longer term critical exposures will maintain levels recommended by EPA for protection of saltwater aquatic life, especially considering the cyclical pattern of hypoxic episodes, which tend to occur in consecutive days over the course of a larval recruitment season.

[20] See page 24 of the criteria document posted at http://epa.gov/waterscience/criteria/dissolved/docriteria.pdf

Rule 62-303.320(6)(b)

Rule 62-302.530 includes Florida's acute toxicity-based water quality criteria and water quality criteria for synthetic organic compounds and synthetic pesticides. Rule 62-303.320(4)(a) revises those criteria for assessment and impairment listing purposes by providing that, notwithstanding the requirements of Rule 62-303.320(4), a water will be determined to be impaired where more than one sample does not meet a water quality criterion in any three year period.

These revisions are consistent with EPA's current CWA section 304(a) criteria recommendations for these parameters. EPA expresses aquatic life criteria in terms of magnitude, duration, and frequency and an allowable excursion frequency of once every three years on average has been the longstanding general recommendation for both acute and chronic aquatic life criteria. It is a commonly cited element of EPA's 1985 "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and their Uses."[21]

The best technical explanation for this recommendation is found in Appendix D of EPA's 1991 "Technical Support Document for Water Quality-based Toxics Control" (EPA/505/2-90-001).[22] EPA explains that duration and frequency components of criteria help take into account the fact that "aquatic organisms can tolerate higher concentrations of pollutants for short periods of time than they can tolerate throughout a complete life cycle." EPA recommended a once in three year frequency based on a review of data from more than 150 studies of ecological endpoint recovery times after a disturbance event.

[21] See page 62 of the document posted at http://www.epa.gov/waterscience/criteria/85guidelines.pdf

[22] The discussion of this recommendation begins on page 233 of the document posted at http://www.epa.gov/npdes/pubs/owm0264.pdf.

Rule 62-303.420(6)

This provision includes a reference to rule 62-303.320(6)(b) and provides for execution of attainment decisions. EPA approves this provision on the same substantive basis as described above for rule 62-303.320(6)(b).

Rule 62-303.720(2)(m)

This provision includes a reference to rule 62-303.320(6)(b) and provides for execution of an attainment decision by allowing delisting of an impaired water when the applicable criteria are met for at least three consecutive years and there are new data available for the same seasons in which the previous exceedances occurred. EPA approves this provision on the same substantive basis as described above for rule 62-303.320(6)(b).

Biological Assessment

Rule 62-302.530(11) establishes Florida's water quality criteria for biological integrity, providing that biological integrity is to be measured by percent reduction of the Shannon Weaver Diversity Index. These criteria apply to Class I, II, and III waters, and provide that "[t]he Index for benthic macroinvertebrates shall not be reduced to less than 75% of background level. . . ." Rule 62-303.330 supplements these criteria by allowing biological integrity to be assessed through BioRecons, Stream Condition Indices, and the benthic macroinvertebrate component of the Lake Condition Index. The bioassessments outlined in rule 62-303 include BioRecons and the Stream Condition Indices (SCIs) for streams, and the benthic macroinvertebrate component of the Lake Condition Index (LCI) for lakes. There are two situations where bioassessment results may be used in attainment decisions. First, bioassessment results may be used to place waters on the verified list based on impairment of aquatic life use support pursuant to rule 62-303.430. Second, pursuant to rule 62-303.420(1)(b), bioassessments

may be used to support determinations by FDEP that exceedances of water quality standards are due solely to natural background conditions. EPA's analysis of the IWR's biological integrity provisions is set out in detail in Appendix C.

Rule 62-303.330(2)

Rule 62-302.530(11) establishes Florida's water quality criteria for biological integrity, providing that biological integrity is to be measured by percent reduction of the Shannon Weaver Diversity Index. Rule 62-303.330(2) supplements those criteria by allowing biological integrity to be assessed through BioRecons, Stream Condition Indices, and the benthic macroinvertebrate component of the Lake Condition Index (LCI). This subsection further clarifies the applicability of the LCI bioassessment to lakes of a certain type. Only the first sentence of this provision constitutes a new or revised water quality standard.

These new bioassessment tools establish quantitative "impairment thresholds" for each assessment method. These methods are appropriate for Florida waters and aquatic species because the ratings/scores generated using these assessments are an accurate and scientifically defensible measurement of designated use attainment in State waters. Thus, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Rule 62-303.330(3)(a)

Rule 62-302.530(11) establishes Florida's water quality criteria for biological integrity. Rule 62-303.330(3)(a) revises those criteria by establishing additional detail applicable to the biological assessment of streams. This subsection of the IWR provides that streams are to be assessed with either a BioRecon or a Stream Condition Index and establishes the basis for

assessing waters as impaired based on those instruments. In addition, this subsection establishes the magnitude of biological criteria for streams by referencing language from the 2004 versions of BioRecon, and SCI documents.

It should also be noted that the IWR requires use of the 2004 versions of LT 7200 and FS 7420 (SCI) and associated SOPs, through cross-reference in the Rule. Please see Appendix C for a more detailed explanation.

This rule is consistent with the requirements outlined in 40 C.F.R. 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. For the magnitude of biological criteria, the range of indices that fall into the use attainment category represent a robust and vigorous community of aquatic species, functioning as a healthy ecosystem in equilibrium. Alternatively, the range of indices that fall into use non-attainment category represents a community with important sensitive species at low levels or completely absent and an abundance of species that are stress- and pollution-tolerant, symptomatic of an unsound aquatic community subject to frequent disturbances.

Rule 62-303.330(3)(b)

Rule 62-302.530(11) establishes Florida's water quality criteria for biological integrity. Rule 62-303.330(3)(b) revises those criteria by establishing additional detail applicable to the biological assessment of lakes. This subsection of the IWR establishes the basis for assessing a water as impaired based on the Lake Condition Index (LCI). In addition, this subsection references language from the 2004 version of the LCI document that has become binding by rule reference.

This rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. For the magnitude of biological criteria, the range of indices that fall into the use attainment category represent a robust and vigorous community of aquatic species, functioning as a healthy ecosystem in equilibrium. Alternatively, the range of indices that fall into use non-attainment category represents a community with important sensitive species at low levels or completely absent and an abundance of species that are stress- and pollution-tolerant, symptomatic of an unsound aquatic community subject to frequent disturbances.

Rule 62-303.430(1)

Rule 62-303.430(1) provides that all bioassessments used to list waters on the verified list shall be conducted in accordance with FAC Chapter 62-160, including FDEP-approved standard operating procedures (SOPs). These SOPs establish the metrics that are used to apply the biological indices. Significant detail related to determining what constitutes various ratings (poor, fair, good, etc.) is contained in the SOPs. These ratings effectively represent scientifically defensible and protective magnitude values for the new bioassessment standards as described above for rules 62-303.330(3)(a) and (b). Thus, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. Any revisions to the rule-referenced SOPs and consequently, to the IWR itself must be submitted to EPA for standards review under the authority of CWA section 303(c) and approved before gaining status as an applicable water quality standard for Clean Water Act purposes.

Rule 62-303.430(2)

Rule 62-303.430(2) establishes bioassessments as a means of placing waters on the verified list when they were also used as a means of placing waters on the planning list following the provisions in rule 62-303-330. As described above, these new bioassessment tools establish quantitative "impairment thresholds" for each assessment method. These methods are appropriate for Florida waters and aquatic species because the ratings/scores generated using these assessments are an accurate and scientifically defensible measurement of designated use attainment in State waters. Thus, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. Florida elects to place waters on the verified list based on two or more failed bioassessments in this circumstance because of the potential variability associated with hurricanes, drought cycles, and inherent variability associated with biological sampling. The bioassessment development documents provided by FDEP provide statistical information that quantifies sources of variability associated with the bioassessment methodologies.

Rule 62-303.430(3)

Rule 62-303.430(3) establishes bioassessments as a means of placing waters on the verified list when information relevant biological integrity other than bioassessments was used as means of placing waters on the planning list. As described above, these new bioassessment tools establish quantitative "impairment thresholds" for each assessment method. These methods are appropriate for Florida waters and aquatic species because the ratings/scores generated using these assessments are an accurate and scientifically defensible measurement of designated use attainment in State waters. Thus, this rule is consistent with the requirements outlined in

40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Rule 62-303.720(2)(b)

Rule 62-302.530(11) establishes Florida's water quality criteria for biological integrity. Rule 62-303.720(2)(b) supplements those criteria for delisting purposes by providing that a water impaired for biological integrity will be determined to once again attain the biological integrity standard when that water passes two independent follow-up bioassessments and there have been no failed bioassessments for at least one year. For the reasons cited above, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Rule 62-303.200(1)

Rule 62-302.530(10) establishes Florida's water quality criteria for biological integrity. Rule 62-303.200(1) supplements those criteria by defining what constitutes a "Bioassessment," including which instruments may be used for assessing impairment. Thus, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Rule 62-303.200(2)

Rule 62-302.530(10) establishes Florida's water quality criteria for biological integrity. Rule 62-303.200(2) supplements those criteria by providing additional detail about the

requirements for a “BioRecon,” which is one of the bioassessment instruments that may be used for assessing impairment. Thus, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Rule 62-303.200(8)

Rule 62-302.530(10) establishes Florida’s water quality criteria for biological integrity. Rule 62-303.200(2) supplements those criteria by providing additional detail about the requirements for a “Lake Condition Index,” which is one of the bioassessment instruments that may be used for assessing impairment. Thus, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Rule 62-303.200(22)

Rule 62-302.530(10) establishes Florida’s water quality criteria for biological integrity. Rule 62-303.200(2) supplements those criteria by providing additional detail about the requirements for a “Stream Condition Index,” which is one of the bioassessment instruments that may be used for assessing impairment. Thus, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Nutrient Assessment

Florida has established a narrative water quality standard for nutrients. Provisions in the IWR related to nutrients that EPA has determined to be new or revised water quality standards are provisions which translate that narrative standard for assessment purposes. Florida's narrative standard, set out in Rule 62-302.530(47)(b), hereafter referred to as the "narrative nutrient criterion," provides in part, that:

> In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna. [Note: For Class III waters in the Everglades Protection Area, this criterion has been numerically interpreted for phosphorus in Section 62-302.540, F.A.C.].

Provisions identified as new or revised water quality standards in the planning list portion of the IWR (i.e., those in the "300" series) become effective for verified list development as a result of rule 62-303.450(1). The thresholds of nutrient impairment established in the IWR are "one-sided" in nature. That is, the thresholds represent upper boundary conditions above which a water body is not meeting its applicable water quality standards (unless demonstrated otherwise) and is identified as impaired. In other words, TSI or chlorophyll-a values demonstrate that there is an "imbalance" in flora and fauna such that the narrative nutrient criterion is not attained. Waters below the IWR thresholds, however, are not considered "in attainment" of the narrative criterion. Rather, waters with TSI or chlorophyll-a values below the threshold of impairment will continue to be considered "unassessed" until FDEP adopts and EPA approves numeric criteria for nutrients or FDEP develops other methodologies that can be used to determine that an imbalance of flora and fauna does not exist in a water body. EPA's analysis of the IWR's narrative nutrient criteria translators is set out in detail in Appendix B.

Rule 62-303.350(2)(c)

Rule 62-303.350(2)(c) translates the narrative nutrient criterion by providing that, where there are multiple chlorophyll-a or TSI values within a season for a given water, the average value for that season shall be calculated from the individual values and the four quarterly values shall be averaged to calculate the annual mean for that calendar year. This rule works in conjunction with rules 62-303.351, 62-303.352, and 62-303.353 that establish "annual mean" magnitude and duration values to interpret the narrative nutrient criterion. This rule specifies how seasonal representation shall be determined independently for purposes of comparison to the established thresholds. The thresholds themselves represent conditions across all seasons in a comparable manner and this rule ensures appropriate comparison with measured data. Thus, this rule is consistent with the requirements outlined in 40 C.F.R § 131.11; that is, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Rule 62-303.350(3)

Rule 62-303.350(3) translates the narrative nutrient criterion by providing that, when comparing changes in chlorophyll-a or TSI values to historical levels, historical levels shall be based on the lowest five-year average for the period of record. Rule 62-303.350(3) also provides that, to calculate a five-year average, there must be annual means from at least three years of the five-year period. This rule establishes the lowest five year average for the period of record as the basis for comparison to "historical values" provided in rules 62-303.351, 62-303.352, and 62-303.353. FDEP recognizes that changes from a baseline condition in an important measure of primary production can often be indicative of a change in the balance of flora and fauna. The selection of the lowest five year average for the period of record to represent historical values is

a reasonable choice given the dynamics of nutrient cycling and inter-annual variability. Thus, this rule is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use.

Rule 62-303.351(2)

Rule 62-303.351(2) translates the narrative nutrient criterion by specifying a level of chlorophyll-a above which a stream will be determined to be impaired for nutrients. This subsection of the IWR provides that streams will be determined to be impaired where annual mean chlorophyll-a concentrations are greater than 20 ug/l or where data indicate annual mean chlorophyll-a values have increased by more than 50% over historical values for at least two consecutive years. This revision is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. The nutrient impairment threshold of 20 µg/L (expressed as an annual mean chlorophyll-a concentration) adds a magnitude and duration component to the narrative nutrient criterion. This impairment threshold represents an upper-bound 90^{th} percentile value derived from historical chlorophyll-a stream data, and is based on professional judgment of FDEP staff with experience in evaluating conditions in Florida streams. FDEP had also proposed 20 µg/L as an "indicator of imbalance" in state streams during a previous triennial review. The comparison of changes in mean chlorophyll-a values to historical levels is also consistent with 40 C.F.R. § 131.11. A change from a baseline condition in an important measure of primary production (such as chlorophyll-a) can be indicative of a change in the balance of flora and fauna, and provides a

level of protection for individual streams that cannot be obtained through application of general threshold values.

Rule 62-303.352(1)

Rule 62-303.352(1) translates the nutrient criterion by specifying a TSI above which a lake with a mean color greater than 40 platinum cobalt units will be determined to be impaired for nutrients. This subsection of the IWR provides that such lakes will be determined to be impaired where the annual mean TSI for the lake exceeds 60, unless paleolimnological information indicates the lake was naturally greater than 60. This revision is consistent with the requirements outlined in 40 C.F.R. § 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. The nutrient impairment threshold (established as an annual TSI value of 60) adds a magnitude and duration component to the narrative nutrient criterion. Florida's TSI (based on chlorophyll-a, total nitrogen, and total phosphorus concentrations) was determined based on regression analysis of data from 313 Florida lakes, and was adjusted so that a chlorophyll-a concentration of 20 µg/L was equally to a TSI value of 60. This value was selected as the threshold for nutrient impairment for most lakes because phytoplankton populations often switch to communities dominated by blue-green algae at chlorophyll-a levels greater than 20 µg/L. These blue-green algae are usually an unfavorable food source to zooplankton and many other aquatic animals. In addition, excessive growth of phytoplankton and the subsequent death of these algae may consume large quantities of dissolved oxygen and result in anaerobic condition in lakes, which makes conditions in the impacted lake unfavorable for fish and other wildlife. All of these processes may impair the health and balance of native fauna and flora.

Rule 62-303.352(2)

Rule 62-303.352(2) translates the narrative nutrient criterion by specifying a TSI above which a lake with a mean color less than or equal to 40 platinum cobalt units will be determined to be impaired for nutrients. This subsection of the IWR provides that such lakes will be determined to be impaired where the annual mean TSI for the lake exceeds 40, unless paleolimnological information indicates the lake was naturally greater than 40. This revision is consistent with the requirements outlined in 40 C.F.R. § 131.11; that is, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. The nutrient impairment threshold (established as an annual TSI value of 40) adds a magnitude and duration component to the narrative nutrient criterion. Due to the great diversity and productivity of Florida lakes, some lakes have natural background TSI values higher than 60, while other naturally oligotrophic lakes have significantly lower natural background TSIs. In recognition of this natural variation, the IWR allows for the use of a lower TSI threshold of 40 in very clear, oligotrophic lakes. This threshold was established based on an analysis conducted for the IWR that indicated that the most significant differences in the TSI and TSI-related parameters (nutrients and chlorophyll-a) were seen when lakes were classified by color alone, with lakes with a color of less than 40 platinum cobalt units having significantly lower TSIs. This low color classification system also covered a previously identified target population of oligotrophic lakes that the TAC wanted to address (low color, oligotrophic lakes in the panhandle).

Rule 62-303.352(3)

Rule 62-303.352(3) translates the narrative nutrient criterion by specifying a TSI above which any lake will be determined to be impaired for nutrients. This subsection of the IWR

provides that any lake will be determined to be impaired where data indicates that annual mean TSIs have increased over the assessment period, as indicated by a positive slope in the means plotted versus time, or the annual mean TSI has increased by more than 10 units over historical values. When evaluating the slope of mean TSIs over time, FDEP shall require at least a 5 unit increase in TSI over the assessment period and use a Mann's one-sided, upper-tail test for trend, as described in Nonparametric Statistical Methods by M. Hollander and D. Wolfe (1999 ed.), pages 376 and 724 (which are incorporated by reference), with a 95% confidence level. This revision is consistent with the requirements outlined in 40 C.F.R. § 131.11; that is, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. This subsection adds a numeric magnitude and duration to the narrative criterion statement. A change from a baseline condition in an important measure of primary production can be indicative of a change in the balance of flora and fauna, and provides a level of protection for individual lakes that cannot be obtained through application of general threshold values.

Rule 62-303.353

Rule 62-303.353 translates the narrative nutrient criterion by specifying a level of chlorophyll-a above which estuaries, estuary segments and open coastal waters will be determined to be impaired for nutrients. This subsection of the IWR provides that estuaries and open ocean waters will be determined to be impaired where their annual mean chlorophyll-a for any year is greater than 11 ug/l or if data indicate annual mean chlorophyll-a values have increased by more than 50% over historical values for at least two consecutive years. This revision is consistent with the requirements outlined in 40 C.F.R. § 131.11; that is, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient

parameters or constituents to protect the designated use. The nutrient impairment threshold of 11 µg/L (expressed as an annual mean chlorophyll-a concentration for any year) adds a magnitude, duration, and frequency component to the narrative nutrient criterion. This threshold reflects the breakpoint for highly eutrophic estuaries. FDEP established this threshold as a mean, rather than a median, to make the threshold more environmentally protective, as the average is more sensitive to algal blooms than the median.

Rule 62-303.450(1)

Rule 62-303.450(1) translates the narrative nutrient criterion by providing that, in order to be placed on the verified list for impairments due to nutrients, waters must have sufficient data from the last five years preceding the planning list assessment, combined with historical data, to meet the requirements of rule 62-303.350(2), F.A.C. Once sufficient data are collected, FDEP then determines if there is sufficient information to develop a site-specific threshold. If not, the Department re-evaluates the data using the thresholds provided in rule 62-303.351-.353, F.A.C. This revision is consistent with the requirements outlined in 40 C.F.R. § 131.11 through its reference to the thresholds provided in rule 62-303.351-.353 as described above. This rule establishes the continued primacy of the narrative nutrient criterion and FDEP's authority to develop an appropriate site-specific threshold to use in place of the planning list thresholds. The ability to utilize new information in the most scientifically-defensible and protective way and document it for the record is both a reasonable and appropriate as well as transparent means of assessing protection of the designated use.

Rule 62-303.720(2)(j)

Rule 62-303.720(2)(j) translates the narrative nutrient criterion by providing that a water impaired for nutrients will be removed from Florida's verified list of impaired waters if the water

does not meet the listing thresholds in Rule 62-303.450, F.A.C., for three consecutive years. This revision is consistent with the requirements outlined in 40 C.F.R. § 131.11. The delisting provision implements the same criteria for determining nutrient impairment that are used in IWR provisions 62-303.351, .352, and 353 as cross-referenced in 62-303.450, which are new or revised water quality standards because they further define or add narrative requirements, a numeric magnitude, a duration, and a frequency and are approved on the same substantive basis as described for those rules above. FDEP and EPA interpret this provision to mean that waters delisted from the verified list are not considered either "unimpaired" or "not meeting water quality standards" but rather are considered "unassessed." In these instances, newer data express significant uncertainty as to whether the waters are impaired.

Rule 62-303.200(6)

Rule 62-303.200(6) provides a new regulatory definition of "estuary" as predominantly marine regions of interaction between rivers and nearshore ocean waters, where tidal action and river flow mix fresh and salt water, including areas such as bays, mouths of rivers, and lagoons. This term, together with "open ocean waters" and "open ocean waters", defines the physical extent to which rule 62-303-353 applies to state waters. As such, it appropriately defines the geographic applicability of approved criteria for designated uses of state waters in relation to the terms "predominantly fresh waters" and "predominantly marine waters." These revisions are consistent with the requirements outlined in 40 C.F.R. § 131.11 in that they are consistent with generally accepted scientific definitions and are necessary to properly apply the criterion.

Rule 62-303.200(11)

Rule 62-303.200(11) provides a new regulatory definition of "Open coastal waters" as a subset of predominantly marine waters, including all gulf or ocean waters that are not classified

as estuaries or open ocean waters. This term, together with "estuary" and "open ocean waters", defines the physical extent to which rule 62-303-353 applies to state waters. As such, it appropriately defines the geographic applicability of approved criteria for designated uses of state waters in relation to the terms "predominantly fresh waters" and "predominantly marine waters." These revisions are consistent with the requirements outlined in 40 C.F.R. § 131.1in that they are consistent with generally accepted scientific definitions and are necessary to properly apply the criterion.

Rule 62-303.200(12)

Rule 62-303.200(12) provides a new regulatory definition of "Open ocean waters" as a subset of predominantly marine waters, including all surface waters extending seaward from the most seaward natural 90-foot (15-fathom) isobath. This term, together with "estuary" and "open coastal waters", defines the physical extent to which rule 62-303-353 applies to state waters. As such, it appropriately defines the geographic applicability of approved criteria for designated uses of state waters in relation to the terms "predominantly fresh waters" and "predominantly marine waters." These revisions are consistent with the requirements outlined in 40 C.F.R. § 131.11 in that they are consistent with generally accepted scientific definitions and are necessary to properly apply the criterion.

Rule 62-303.200(25)

Rule 62-303.200(25) translates the narrative nutrient criterion by providing additional detail about the requirements for a "Trophic State Index" or "TSI." A TSI is a scientifically defensible method that is consistent with the requirements outlined in 40 C.F.R. 131.11; namely, that criteria must protect the designated use, be based on a sound scientific rationale, and contain sufficient parameters or constituents to protect the designated use. EPA has identified such

enrichment index score as a useful assessment tool and as a "translator" to implement multiparameter criteria in its technical manual (EPA-822-B00-001) for nutrient criteria development for lakes and reservoirs (see relevant chapter posted at http://www.epa.gov/waterscience/criteria/nutrient/guidance/lakes/chapter7.pdf).

Recreation Use Assessment

Rule 62-303.460(1)

Rule 62-302.400 includes "recreation" in the description of Class III waters and specifies that Class I, II, and III surface waters share water quality criteria established to protect recreation. Rule 62-303.460(1)(c) incorporates the substantive requirement of rule 62-303.360(1)(c) of the planning list for purposes of including water segments on the verified list. Taken together, these rules specify that a water segment does not support a primary contact and recreation use if it includes a bathing area for which a local health Department or county government has issued closures, advisories, or warnings totaling 21 days or more during a calendar year based on bacteriological data. Closures, advisories, and warnings represent a loss of recreation use and rules 62-303.460(1) and 62-303.360(1)(c) further characterize the designated use with a quantification of unacceptable loss of use from closures, advisories, and warnings. However, the associated criteria do not change.

Federal regulations at 40 C.F.R. § 131.10(a) provide that that a state must specify appropriate water uses to be achieved and protected and must consider the use and value for recreation in and on the water, a use described in Clean Water Act section 101(a)(2). The regulations at 40 C.F.R. § 131.10(k) provide that a state is not required to conduct a use attainability analysis whenever designating uses which include those specified in section 101(a)(2) of the Act. EPA finds that the designated use expression in rules 62-303.460(1) and

62-303.360(1)(c) are consistent with these applicable requirements under federal water quality standards regulations.

EPA's criteria recommendations reflect protection of uses consistent with Clean Water Act section 101(a)(2). In the 2004 rule entitled "Water Quality Standards for Coastal and Great Lake Recreation Waters," EPA described use of the so-called "single sample maximum" component of its criteria recommendations for purposes of beach closure and notification and use of the geometric mean component for other purposes under the Clean Water Act. Depending on the value selected, the single sample maximum may be exceeded between 5 percent and 25 percent of the time while still maintaining the overall geometric mean. Thus, there may be a number of beach closure and notification events in waters that still attain a designated use for recreation consistent with CWA section 101(a)(2) for purposes of listing impaired waters under CWA 303(d). Given the length of the recreation season in Florida waters, 21 days of closures, advisories, and warnings advisories are well within the allowable 5-25 percent range implied by EPA's guidance and rules.

Rule 62-303.460(2)

Footnote C of federal regulations at 40 C.F.R. 131.41(c)(2) promulgated by EPA for the State of Florida apply specific enterococci indicator criteria regardless of origin unless a sanitary survey shows that sources of the indicator bacteria are non-human and an epidemiological study shows that the indicator densities are not indicative of a human health risk. Rule 62-303.460(2) echoes this provision for State law purposes by providing that, when assessing waters, exceedances due solely to wildlife, or for enterococci in coastal recreational waters, will be excluded and those data values will be adjusted based on the human health-related risk factors

for wildlife-based enterococci upon meeting the relevant requirements of 40 C.F.R. § 131.41(c)(2). These revisions are consistent with EPA's promulgated water quality standards.

Rule 62-303.720(2)(e)

Similar to rule 62-303.460(1), rule 62-3-3.720(2)(e) executes attainment decisions based on bathing area closure or advisory data. Rule 62-3-3.720(2)(e) executes these decision in the context of delisting and incorporates the use quantification provisions of rule 62-303.360(1)(b) and (d) in addition to (c) with its reference to 62-303.360(1) as a whole. These additional requirements are consistent with federal regulations for the same reasons as described above for rule 62-303.460(1).

Natural Conditions Provision

Rule 62-303.420(1)(b)

Rule 62-302.200(15) of Florida's established water quality standards defines "natural background condition" as the condition of waters in the absence of man-induced alterations based on the best scientific information available to the Department. That subsection further provides that the natural background for an altered waterbody may be established based upon a similar unaltered waterbody or on historical pre-alteration data. Rule 62-303.420(1)(b) revises that definition by establishing additional detail applicable to establishing natural background during waterbody assessment:

> If the Department has information suggesting that the values not meeting the criterion are due to natural background conditions, including information about the in-stream concentrations of TN, TP, and BOD relative to comparable reference waters for waterbodies with values below the DO criterion, it is the Department's intent to support that conclusion through the use of bioassessment procedures referenced in Rule 62-303.330, F.A.C. The water-body or segment shall not be included on the verified list for the parameter of concern if two or more independent bioassessments are conducted and no failures are reported. To be treated as independent bioassessments, they must be

conducted at least two months apart, within the assessed segment downstream of where the samples were measured, and after the samples were measured.

The definition of the term "reference waters" in rule 62-303.200(18) includes a substantive modification to the otherwise applicable definition of "natural background." "Reference waters" refers to "limited human disturbance" that does not "produce a significant measured or predicted effect on the parameter of concern in the waterbody," whereas the term "natural background" refers to "the absence of man-induced alterations." As such, waters where conditions exist that might be construed as a man-induced alteration, yet where there is not a significant measurable or predicted effect on the parameter of concern can now be examined in the context of the natural background provision of the Florida's water quality standards.

The relevant portion of federal regulations to consider in evaluating this provision is 40 C.F.R. § 131.11 to determine whether its application is protective of the designated uses. A "natural" condition is without human-caused changes. Because it may be difficult (if not impossible) to find a completely "natural" waterbody that is free from influence from any human activity, it is reasonable to determine natural condition or natural background using conditions least affected by human activities as the point of reference, as long as those least affected conditions are believed to be a reasonable approximation of the natural condition. Waters where activities such as urbanization, agricultural practices, hydrologic modification, and atmospheric deposition have a significant measurable or predicted effect on a designated use should not be used as a natural point of reference.

It is reasonable for FDEP to use bioassessments to support an independent conclusion that elevated pollutant levels are due to natural background conditions. Failure of Florida's bioassessments, as defined in rule 62-303.200(1), provides evidence that the waters in question

do not represent “natural” conditions. In establishing a reference condition for aquatic life uses, states/tribes have used metrics such as the occurrence of native taxa, the occurrence of sensitive non-native taxa, ecosystem function, connectedness, habitat assessment tools, etc. to describe the “natural” structure and function that is to be maintained. Determining the natural condition provides an approximation of a waterbody’s expected unimpacted biological condition. This serves to provide a benchmark for evaluating a waterbody’s biological condition and for making a distinction between human-caused stressors that may be controlled and natural “stressors” which need not be controlled.

Rule 62-303.200(18)

Rule 62-302.200(15) of Florida’s established water quality standards defines “natural background condition” as the condition of waters in the absence of man-induced alterations based on the best scientific information available to the Department. That subsection further provides that the natural background for an altered waterbody may be established based upon a similar unaltered waterbody or on historical pre-alteration data. Rule 62-303.200(18) revises that definition by establishing additional detail applicable to establishing natural background during waterbody assessment. This subsection of the IWR defines the term “reference water” as a waterbody that exhibits a range of physical, chemical and biological characteristics approximating the natural background conditions of the same, or similar, type of waterbody within an ecologically similar region. This subsection of the IWR further provides that a reference water may be representative of the water quality and structure and function of biological communities of natural background conditions even if there is evidence of limited human disturbance in the waterbody or watershed, as long as anthropogenic sources do not produce a significant measurable or predicted effect on the parameter of concern in the

waterbody. As applied in rule 62-303.420(1)(b) to interpret natural background for assessment purposes, this definition is protective of the designated use consistent with 40 C.F.R. § 131.11.

VII. Conclusion

For the reasons discussed above, EPA has concluded that, as applied by Florida, certain portions of the amended IWR are new or revised water quality standards. EPA has also concluded that certain portions of Florida=s amended IWR are not new or revised water quality standards. EPA's conclusions as to which provisions of the amended IWR constitute new or revised water quality standards are summarized in Tables 1 and 2 above.

As to those provisions of the amended IWR which EPA has determined are new or revised water quality standards, whether in its July 2005 Determination or in this Determination, EPA is approving those provisions pursuant to section 303(c) of the CWA.

A more detailed analysis of EPA's analysis of all provisions of the amended IWR, as well as EPA's rationale underlying each decision, is located in the administrative record for this determination.

02/19/08
Date

/s/
James D. Giattina
Director, Water Management Division