UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Ms. Kelly Jean Heffner, Deputy Secretary
Office of Water Management
Pennsylvania Department of Environmental Protection
400 Market Street, 2nd Floor
Rachel Carson State Office Building
Harrisburg, PA 17105-2063

MAY 22 2014

Dear ~~Ms. Heffner~~ Kelly:

Recently the Commonwealth of Pennsylvania completed the triennial review of its water quality standards regulation. The review resulted in the addition of several criteria as well as modifications to a number of criteria and to several provisions of the regulation. In this letter, the U.S. Environmental Protection Agency (EPA) is taking action on those water quality standards revisions in accordance with the Clean Water Act (CWA) Section 303(c).

The Pennsylvania Environmental Quality Board adopted these revisions to the water quality standards regulation at Chapter 93 of the Pennsylvania Code on April 16, 2013. The revisions were published in the Pennsylvania Bulletin on July 20, 2013. The Pennsylvania Department of Environmental Protection's (PADEP) Office of Chief Counsel certified that these regulatory changes were adopted pursuant to the Commonwealth's legal procedures, and that the Office of Attorney General and the Governor's Office of General Counsel have also approved the final regulatory changes for form and legality. In accordance with CWA Section 303(c)(2)(A) and 40 CFR 131.21(c), PADEP forwarded the amended regulation to EPA on October 7, 2013, and we received it on October 21, 2013.

Based on EPA's review of the submission and supporting documentation, EPA finds that the new or revised provisions of Pennsylvania's regulation are consistent with CWA Section 303(c) and its implementing regulations at 40 CFR §131. Enclosure 1 to this letter includes all the new or revised provisions that EPA is approving in this action, as well as a brief rationale for our approval. On a separate table in Enclosure 1 is a number of revisions that EPA does not consider water quality standards under CWA Section 303(c), and we therefore do not have to take a 303(c) action on those provisions. Those provisions are mostly revisions to regulatory citations or corrections, and therefore do not change the desired condition or level of protection of surface waters in the Commonwealth.

In this letter, EPA will not be taking a CWA Section 303(c) action on the aquatic life criteria established for nonylphenol. Under Section 7(a)(2) of the Endangered Species Act (ESA), EPA has the obligation to determine if its approval of the new or revised provisions of Pennsylvania's water quality standards regulation will adversely affect threatened and endangered species and their critical habitat in Pennsylvania. To fulfill our obligation, EPA

prepared a biological evaluation of the new and revised provisions of Pennsylvania's regulation and concluded that our approval will not adversely affect Federally-listed threatened and endangered species, and their critical habitat. This evaluation is included with this letter as Enclosure 2. The National Marine Fisheries Service (NOAA Fisheries) concurred with the conclusion on March 17, 2014 (Enclosure 3).

However, in their April 11, 2014 letter, the Pennsylvania Field Office of the U.S. Fish and Wildlife Service (USFWS), while concurring with a majority of EPA's biological evaluation, found they could not concur that the nonylphenol criteria for the protection of aquatic life would be protective of endangered mussels in Pennsylvania (Enclosure 4). Because EPA and USFWS have not yet agreed on how to address this issue, EPA will be taking no action on the new nonylphenol criteria at this time.

EPA would like to commend PADEP's water quality standards staff for the completion of this review of Pennsylvania's water quality standards regulation. My staff is prepared to assist PADEP as you embark on the next triennial review. We fully anticipate that PADEP will address the issues of total dissolved solids, most notably chlorides, ammonia and recreational criteria. We also look forward to your continued efforts to establish nutrient criteria.

If you have any questions regarding this action, please do not hesitate to contact me or have your staff contact Denise Hakowski at 215-814-5726.

Sincerely,

Jon M. Capacasa, Director
Water Protection Division

Enclosures (4)

cc: Thomas Barron (PADEP)
Rodney Kime (PADEP)
Lora Zimmerman (USFWS)
John K. Bullard (NOAA Fisheries)

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Enclosure 1

Summary of Pennsylvania's New and Revised Water Quality Standards -- 2013 Triennial Review

EPA is approving under Clean Water Act Section 303(c) the following revisions to Pennsylvania's water quality standards regulations

Citation	Description	EPA Approval Rationale
93.7 Table 3 DO1	Revised application of 6.0 mg/l to 7-day average from minimum daily; added for naturally producing salmonid early life stages a 7-day average criterion of 9.0 mg/l, and a minimum of 8.0 mg/l	The 7-day average of 9.0 mg/l is identified in EPA's Ambient Water Quality Criteria for Dissolved Oxygen (EPA 440/5-86-003, 1986) as a concentration level where "slight production impairment" could be expected in salmonid waters when embryo and larval stages are present. Whereas EPA's recommendation is 9.5 for coldwater criteria/early life stages present, PADEP reviewed literature and compared DO concentration values from multiple field and laboratory studies to EPA's recommendation and determined 9.0 mg/l will be protective in PA waters. 8.0 mg/l consistent with EPA's coldwater criteria/early life stages present recommendation for a minimum. Application of 6.0 as a 7-day average consistent with EPA's DO recommendations.
93.7 Table 3 DO2	Revised criteria from minimum daily average 5.0 mg/l and minimum of 4.0 mg/l to a 7-day average of 5.5 mg/l and a minimum of 5.0 mg/l.	The 7-day average of 5.5 mg/l is identified in EPA's Ambient Water Quality Criteria for Dissolved Oxygen (EPA 440/5-86-003, 1986) as a concentration level where "slight production impairment" could be expected in nonsalmonid waters. Whereas EPA's recommendation is 6.0 for warmwater criteria, PADEP reviewed literature and compared DO concentration values from multiple field and laboratory studies to EPA's recommendation and determined 5.5 mg/l will be protective in PA waters. 5.0 mg/l consistent with EPA's warmwater criteria recommendation for a minimum.
93.7 Table 3 DO3	Revised application of 6.0 mg/l to 7-day average from minimum daily for 2/15 to 7/31 of any year; for the remainder of the year deleted minimum daily average of 5.0 mg/l, added 7-day	See above rationale for 7-day average of 5.5 mg/l, and 5.0 mg/l minimum. PA indicates that application of criteria as 7-day average provides an additional margin of safety.

	average of 5.5 mg/l and modified minimum criterion from 4.0 mg/l to 5.0 mg/l.	
93.7 Table 3 DO4	Delete	PA deleted this criterion as criteria in HQ waters is to be set at current high quality/reference conditions
93.7(b)	Add	Contains the explanation for the protection of early life stages of Salmonids, regarding revised DO requirements
93.8b Conversion Factors Table	Add conversion factors for Chromium III of .860 for chronic and .316 for acute.	Consistent with EPA's current recommended conversion factor found at http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm
93.8c Table 5 Phenol	Revise criterion for the protection of human health from 21000 ug/l to 10400 ug/l	Consistent with EPA recommended criterion found at http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm
93.8c Table 5 Acrolein CCC	Revise aquatic life criterion from 1 ug/l to 3.0 ug/l	Consistent with EPA recommended criterion found at http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm
93.8c Table 5 Acrolein CMC	Revise aquatic life criterion from 5 ug/l to 3.0 ug/l	Consistent with EPA recommended criterion found at http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm
93.8c Table 5 Acrolein	Revise criterion for the protection of human health from 190 ug/l to 9 ug/l	Consistent with EPA recommended criterion found at http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm
93.8c Table 5 1,2 cis-Dichloro-ethylene	Add criterion for the protection of human health of 12 ug/l	Developed using EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004) and calculated using toxicity data from IRIS (RfD), EPA's National Primary Drinking Water Regulations Technical Factsheet (BCF), and the default RSC.
93.8c Table 5 Acrylamide	Add criterion for the protection of human health of 0.07 ug/l	Developed using *EPA's Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004) and calculated using toxicity data from IRIS (oral slope factor)
93.8c Table 5	Add criterion for the protection of human health of 0.2 ug/l	Developed using EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004)

Benzyl chloride		and calculated using IRIS and exposure assumptions from PADEP's Chapter 16.
93.8c Table 5 Benzene Metadisulfonic Acid CCC	Add aquatic life criterion of 1600000 ug/l	Developed using EPA's 1985 *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (USEPA 1985), including a review of relevant literature and existing toxicity data, and additional toxicity tests conducted to meet minimum data requirements. EPA's review finds that National Guidelines on toxicity testing and criteria development are met.
93.8c Table 5 Benzene Metadisulfonic Acid CMC	Add aquatic life criterion of 2600000 ug/l	Developed using EPA's 1985 *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (USEPA 1985), including a review of relevant literature and existing toxicity data, and additional toxicity tests conducted to meet minimum data requirements. EPA's review finds that National Guidelines on toxicity testing and criteria development are met.
93.8c Table 5 Benzene Monosulfonic Acid CCC	Add aquatic life criterion of 1200000 ug/l	Developed using EPA's 1985 *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (USEPA 1985), including a review of relevant literature and existing toxicity data, and additional toxicity tests conducted to meet minimum data requirements. EPA's review finds that National Guidelines on toxicity testing and criteria development are met.
93.8c Table 5 Benzene Monosulfonic Acid CMC	Add aquatic life criterion of 2000000 ug/l	Developed using EPA's 1985 *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (USEPA 1985), including a review of relevant literature and existing toxicity data, and additional toxicity tests conducted to meet minimum data requirements. EPA's review finds that National Guidelines on toxicity testing and criteria development are met.
93.8c Table 5 2-Butoxy Ethanol	Add criterion for the protection of human health of 700 ug/l	Developed using EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004) and calculated using toxicity data from IRIS (RfD), ATSDR (BCF), and the default RSC.
93.8c Table 5 Cyclohexylamine	Add criterion for the protection of human health of 1000 ug/l	Developed using EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004) and calculated using toxicity data from IRIS (RfD), EPA's Health and

		Environmental Effects Document for cyclohexylamine (BCF), and the default RSC.
93.8c Table 5 P-Phenol Sulfonic Acid CCC	Add aquatic life criterion of 1400000 ug/l	Developed using EPA's 1985 *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (USEPA 1985), including a review of relevant literature and existing toxicity data, and additional toxicity tests conducted to meet minimum data requirements. EPA's review finds that National Guidelines on toxicity testing and criteria development are met.
93.8c Table 5 P-Phenol Sulfonic Acid CMC	Add aquatic life criterion of 3500000 ug/l	Developed using EPA's 1985 *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (USEPA 1985), including a review of relevant literature and existing toxicity data, and additional toxicity tests conducted to meet minimum data requirements. EPA's review finds that National Guidelines on toxicity testing and criteria development are met.
93.8c Table 5 Resorcinol CCC	Add aquatic life criterion of 7200 ug/l	Developed using EPA's 1985 *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (USEPA 1985), including a review of relevant literature and existing toxicity data, and additional toxicity tests conducted to meet minimum data requirements. EPA's review finds that National Guidelines on toxicity testing and criteria development are met.
93.8c Table 5 Resorcinol CMC	Add aquatic life criterion of 28000 ug/l	Developed using EPA's 1985 *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (USEPA 1985), including a review of relevant literature and existing toxicity data, and additional toxicity tests conducted to meet minimum data requirements. EPA's review finds that National Guidelines on toxicity testing and criteria development are met.
93.8c Table 5 Resorcinol	Add criterion for the protection of human health of 2700 ug/l	Developed using EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004) and calculated using toxicity data from Resorcinol – Concise International Chemical Assessment Document 71 (RfD), BCF from the Data Analysis and Test Plan for Resorcinol, INDSPEC Chemical Corporation, and default RSC.
93.8c Table 5	Add criterion for the protection of human health of 4000 ug/l	Developed using EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004)

Strontium		and calculated using toxicity data from IRIS (RfD), ATSDR (BCF), and the default RSC.
93.8c Table 5 1,2,4-Trimethylbenzene	Add criterion for the protection of human health of 72 ug/l	Developed using EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004) and calculated using Risk Assessment Information System (Oral RfD), EPA's Chemical Study for TMB (BCF), and default RSC.
93.8c Table 5 1,3,5-Trimethylbenzene	Add criterion for the protection of human health of 72 ug/l	Developed using EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000* (EPA-822-B-00-004) and calculated using using Risk Assessment Information System (Oral RfD), EPA's Chemical Study for TMB (BCF), and default RSC.

EPA is not taking action on the following revisions to Pennsylvania's water quality standards regulations as they are not considered a change to water quality standards (i.e., designated uses, criteria or antidegradation provisions), or a correction that do not change the objective of the regulation.

Citation	Description	EPA Comment
93.1	Delete the definition of "Critical use"	Definition for "critical use" in Table 3 footnote in 93.7 retained
93.1	Revise definition of "Point source discharge"	Update reference to Chapter 92a
93.4c(b)(1)(ii)(B)	Revise public participation regulation references	Update references to Chapter 92a.81, 92a.82, 92a.83, 92a.85
93.4c(c)(1)	Revise NPDES permit review reference	Update reference to Chapter 92a
93.4d Processing of petitions, evaluations and assessments to change a designated use.	Revise public notification methods associated with the stream redesignation process	Gives PADEP the flexibility to select the most effective secondary public notification method; publication in the Pennsylvania Bulletin remains the primary method

93.7 Table 3 Dissolved Oxygen	Revise "waters" to "freshwater"	Indicates that the Dissolved Oxygen criteria apply to "freshwater"
93.7 Table 3 Temperature	Revise NPDES permit regulation reference	Update regulatory reference to 92a
93.7(b) Table 4	Delete	Obsolete since the application of DO and temperature criteria is in 93.7, Table 3 and the drainage lists in 93.9a – 93.9z
93.8d	Revise NPDES permit regulation reference	Update regulatory reference to 92a
93.9b	Correct the entire drainage list B to account for newly named tributaries. Also update the name of the Lackawaxen River between Van Auken Creek and Dyberry Creek (Wayne & Pike Counties)	Corrections do not change the current stream use designations
93.9c	• Insert Leas Run. It should appear as a named tributary (Monroe County) • Correct Paradise Creek basin by converting it from a main stem format to a basin format; addresses 3 errors: Tank Creek is not listed; Forest Hill Run should be listed rather than Swiftwater Creek; Devils Hole Creek should be listed after Yankees Run (Monroe County) • Corrections made to the headwaters of Pocono Creek basin in to be consistent with the NHD Flowline. The origin of Pocono Creek and the mouths of Wolf Swamp Run and Dry Sawmill Run are all now further downstream. Pocono Creek basin is being converted from a main stem format to a basin format to account for named tributaries that are not currently listed in Chapter 93 (Monroe County).	Corrections do not change the current stream use designations

	• Correct name to McMichael Creek from McMichaels Creek (Monroe County). • Correct the Township Road Number in Slateford Creek in the zone description to T735 (Northampton County)	
93.9d	Correct the name to Black River from Black Creek (Northampton County)	Corrections do not change the current stream use designation
93.9e	The confluence of Lahaska Creek & Watson Creek forms the origin of Mill Creek (Bucks County)	Corrections do not change the current stream use designation
93.9f	• Insert Leak Creek as it should appear as a named tributary (Berks County) • Insert Crossmans Run as it should appear as a named tributary (Montgomery County) • The Schuylkill River below Valley Creek will be re-written as a basin format and Glanraffan & Matsunk Creeks will be included with this new format (Montgomery County)	Corrections do not change the current stream use designation
93.9g	• Correct East Branch White Clay Branch to East Branch While Clay Creek (Chester County) • For the unnamed tributaries to West Branch Brandywine Creek, change zone description to "Basins, all portions in West Brandywine Township". All portions of all tributaries to the West Branch Brandywine Creek that lie within the West Brandywine Township borders are HQ-TSF, MF. (Chester County)	Corrections do not change the current stream use designation
93.9h	Change all references from "Catlin Hollow" to Norris Brook. "Catlin Hollow" is a tributary to Norris Brook (Tioga County)	Corrections do not change the current stream use designation
93.9i	Insert named tributaries to Towanda Creek that were inadvertently omitted. These include Beech Flats Creek, Wallace Brook, Gulf Brook, and French Run (Bradford County).	Corrections do not change the current stream use designation

93.9k	• Sechler Run is no longer a tributary to the Susquehanna River. It has been diverted and is now a tributary to Mahoning Creek (Montour County). • Insert named tributaries of Susquehanna River that were inadvertently omitted. There include Gaskins Run, Kipps Run, Raups Run, and Packers Run (Montour-Northumberland County).	Corrections do not change the current stream use designation
93.9l	• Correct Grass Flats Run to Wistar Run (Clinton County). Correct Roaring Brook to Roaring Branch (Tioga County). • NHD Flowline now categorizes Noon Branch as flowing all the way down to Plunketts Creek and corrected an error so that Noon Branch is the now the main stem and Wolf Run is the tributary (Lycoming County).	Corrections do not change the current stream use designation
93.9m	• Delete the stray entry for Penns Creek • Correct the location of the mouth of Zerbe Run from Schuylkill County to Northumberland County.	Corrections do not change the current stream use designation
93.9n	Pavia Run replaces Deep Hollow Run. Deep Hollow Run is a tributary to Pavia Run according to PA stream directory & NHD Flowline.	Corrections do not change the current stream use designation
93.9o	• Correct error that Keasey Run and Rowe Run directly enter the Conodoguinet Creek. Both of these streams are tributaries to Muddy Run (Franklin County). • Convert South Branch Codorus Creek from a main stem to a basin format so that the tributaries are listed in the correct order. Update the RMI for the UNT that flows through Glen Rock Valley to be consistent with NHD Flowline. Fix zone	Corrections do not change the current stream use designation

	description for UNTs to East Branch Codorus Creek below the inlet for Lake Redman. (York County) • Correct error in location of Indian Spring Run basin (Chester/Lancaster County). • Correct Haines Run to Haines Branch (Lancaster County)	
93.9s	• Correct Pent Run to Pentz Run (Clearfiled County). • Convert the North Fork Redbank Creejk from a main stem format to a basin format. This will account for (1) those named tributaries which do no appear in Ch 93; (2) streams that are not in the correct order in the drainage list; (3) instances where the stream names are inconsistent between Ch 93.9 and NHD Flowline (Jefferson County)	Corrections do not change the current stream use designation
93.9w	Delete the entry for Boothe Run. With respect to hydrological order, Boothe Run is a fifth level tributary to UNT 32753. All portions of the basins of UNTs to Enlow Fork that flow through PA are designated WWF. The basin of UNT 32753, including Boothe Run is designated WWF according to the previous entry (Greene County).	Corrections do not change the current stream use designation
93.9z	Language added to Ch 93.9z to clarify those streams that are tributary to the Monocacy River and not Antietam Creek.	Corrections do not change the current stream use designation