

## COMMENTS OF RICHARD J. WEISBERG

### I. Introduction

My name is Richard J. Weisberg. I reside at 34 Prince's Pine Road, Norwalk, CT 06850. I am a recreational fisherman and a member of Trout Unlimited. In this capacity I have utilized the following inland and marine waters of the State of Connecticut: the Norwalk River; the Saugatuck River; the Connecticut River; the Housatonic River; and Long Island Sound. I submit these comments in response to the notice issued by DEEP, dated October 24, 2013, entitled "Public Notice Of Intent To Initiate Triennial Review of Connecticut Water Quality Standards, which notice solicited comments on any aspect of DEEP's water quality standards ("WQS") that it was believed DEEP "should consider for potential revision."

### II. Comments

On April 16, 2009, DEEP issued a Notice of Triennial Review (the "2009 Triennial Review"). I submitted comments to the 2009 triennial review, dated July 6, 2009. These comments were limited to three issues in which I have considerable interest in my capacity as a recreational angler, as follows: (1) water temperature criteria for surface waters; (2) phosphorus standards and criteria; and (3) antidegradation. The issues that I raised with reference to antidegradation have been addressed by DEEP to my satisfaction and therefore, they will be no further reference to antidegradation in these comments. My comments concerning water temperature criteria and phosphorus, however, were not addressed and will constitute the bulk of my comments below. My July 6, 2009 comments in response to the 2009 Triennial Review, minus my comments on antidegradation, are annexed below as Appendix A. (The exhibits to Appendix A, as well as Appendix B below, are not included. Presumably, they are part of the administrative record to the 2009 Triennial Review, if needed).

1. Water Quality Criteria –In my 2009 comments in Appendix A, I argued that DEEP's water criteria for temperature were antiquated and failed totally to protect cold water fisheries, primarily trout. My comments were adopted by several other stakeholders. Subsequently, DEEP proposed final WQS, dated December 22, 2009, in which it proposed numeric water temperature criteria that were satisfactory to me and other stakeholders in the recreational community, with one exception. This exception was the 4 degree F allowable temperature increase criterion, in DEEP's existing WQS, which remained unchanged. In response to this exception I submitted supplemental comments, dated February 3, 2010, which are annexed below as Exhibit B. In its final WQS, dated February 25, 2011, DEEP deleted the changes to the temperature criteria that it had previously proposed in 2009, so that its existing temperature criteria remained in effect.

In the Notice, DEEP identifies 11 issues that it is particularly interested in receiving

comments on, which issues “are currently being evaluated for revision.” With reference to the temperature criteria, the Notice relegates them to a second group of issues, which DEEP states that it “is currently working on, but are not considering for revision at this time.” As to these latter issues the Notice further states that they “are not expected to be addressed in the WQS in the near-term....”

In the Hearing Officer’s Report issued in connection with its final 2011 WQS, DEEP stated with reference to the deleted temperature criteria, that it intended to move in the direction of more protective criteria by undertaking additional studies. (Hearing Officer’s Report, dated 1/4/11, “HO” or the “Report”, at 80-81). DEEP’s deletion of its proposed temperature criteria was very disappointing. Moreover, for the reasons set forth below, its explanation for this action appeared unpersuasive .

As noted above, in its December 2009 proposed revision, DEEP proposed a set of numeric temperature criteria for cold water fisheries far more protective than its existing criteria, and supported these proposed criteria with an extensive technical support document, suggesting that they were ready for implementation. (Administrative Record, Exhibit 17). In the Report, DEEP stated that the purpose of the proposed temperature criteria was to achieve consistency with EPA recommendations and to provide improved protection for fish populations. (“HO” at 11). At pages 80-81 of the Report, DEEP sought to explain in more detail its deletion of the temperature criteria on the ground that numerous conflicting comments created such uncertainty that while it was committed to establishing more protective temperature criteria, it was constrained to undertake additional studies, the results of which would allow for the identification of an appropriate statewide temperature regime. A review of the comments does not support this explanation.

There were indeed some comments from industry representatives in opposition to the proposed temperature criteria, but these were so broad and general that, in my opinion, they did not constitute evidence let alone the substantial evidence necessary to require deletion of the proposed criteria. Two negative comments, #s 43 and 49, from the Regional Water Authority and the CT. Dept. of Health, respectively, posed a valid concern, noting that the temperature of required releases from reservoirs or other large, dammed impoundments, unlike those from discrete point sources, could not be controlled and therefore, might be unable to comply with the proposed temperature criteria. There were also a number of comments in support of the proposed temperature criteria from conservation and environmental groups. EPA, in its comments (#53), stated that “[o]verall EPA supports [DEEP’s] new approach to temperature requirements, but that [DEEP’s] proposed criteria were insufficiently stringent to protect the most sensitive species.” (At 6).

This mixture of comments suggests that a more reasoned and protective approach for DEEP would have been: (1) to proceed with the proposed temperature criteria on an interim basis, but to create an exception for the managers of reservoirs or large impoundments, or at least grant them the option to request a variance; and (2) to

pursue a further study of the issue to identify a more stringent set of criteria capable of protecting the most sensitive species of fish, in conformance with EPA's comments. In sum, DEEP's explanation of its decision to rescind its proposed temperature criteria and to restore its admittedly unprotective existing regime, while pursuing a potentially very lengthy study, appears unpersuasive and environmentally unsound.

DEEP has acknowledged that the revision to its temperature criteria, on which it is working, will not be ready for adoption in the "near-term". If in fact the "near-term" is anticipated to be a lengthy period, would it be possible for DEEP to issue the temperature criteria proposed in December 2009, on an interim basis, with the additional provisions meeting the objections of the Regional Water Authority and the CT. Dept. of Health, as suggested above? At the very least, I believe it would be helpful to stakeholders if DEEP could provide them in its responsiveness summary with a rough estimate of when DEEP will be able to propose revised temperature criteria. (Pursuant to EPA's regulations, a responsiveness summary is a required component of any triennial review. See 40 CFR 131.20(b), 40 CFR, part 25.1 (b), and 40 CFR 25.8).

2. Phosphorus Criteria – In my 2009 comments in Appendix A, I argued in favor of the development of numeric phosphorus criteria. Since it was my understanding that this was an issue that had been the subject of a prolonged debate, which was unlikely to be resolved shortly, I also argued for two proposals that I believed were both cost effective and could be implemented in the short term, as follows: (1) a requirement that all towns install phosphorus removal equipment in their waste treatment plants ("WTPs"); and (2) the elimination of DEEP's policy permitting WTPs (or other facilities) to shut down their phosphorus removal equipment from October 1 through April 30 each year. At least one other commenter (the Connecticut Fund for the Environment) addressed DEEP's seasonal closure policy, arguing that there was no "reasonable justification" for it. ("HO" at 67).

DEEP failed to implement either of the above proposals, and evincing a lack of appropriate transparency, provided no explanation of its negative response. The current triennial review provides DEEP with an opportunity to correct these omissions, either by indicating its willingness to implement the two above proposals, or by providing stakeholders with a forthright explanation as to why this low-hanging fruit will not be harvested.

3. RCSA 22 a-430-4(p)(2)(B) - I wish to comment on the importance of the preceding regulation, which effectively prohibits the issuance of a permit to a developer for a project located on a water body where the proposed discharge from the site would worsen a listed impairment, or violate the limitations in a Total Maximum Daily Load. This regulation is critical to stakeholders like me and others who are engaged in seeking to protect impaired waters from further degradation. In this context, I wish to express my appreciation to DEEP for retaining in its recent reissuance the "General Permit for the Discharge of Stormwater and Dewatering Wastewaters from

Construction” section 5 (e), which provides that permittees must comply with section 22a-430-4 of RCSA, and incorporates this latter section into the General Permit.

Respectfully submitted,  
Richard J. Weisberg  
December 4, 2013

## APPENDIX A

### Comments Of Richard J. Weisberg Concerning Temperature Criteria, and Standards and Criteria For Phosphorus, Submitted On 7/6/09, In Reponse to DEP's Notice Of Triennial Review, Dated 4/16/09

#### 1. DEP's Temperature Criteria For Class AA, A, and B Surface Waters Fail To Protect Cold Water Fisheries, Including Trout, And Should Be Revised Accordingly

Under Connecticut law, pollution includes "harmful thermal effect", which is defined as "any significant change in temperature of any waters resulting from a discharge therein, the magnitude of which temperature change does or is likely to render such waters harmful, detrimental or injurious to...recreational or other legitimate beneficial uses, or to...fish or to other aquatic life;" (CGS §22a-423).

Trout are universally recognized as cold water species, sensitive to changes in water temperature. Specific data obtained from DEP on the impact of temperature on trout, is set forth below.

<u>Species</u>	<u>Temperature and Impacts</u>			
	Growth Limited	Long-Term lethal	Short-Term lethal	Critical Thermal
Max				
Brook Trout	18C/64.4F	20C/68F	22C/71.6F	25 C/77F
Brown Trout	20C/68F	24.9C/76.82F	27C/80.6F	29.7C/85.46F

Long-term lethal: 50% mortality after 7 days exposure

Short-term lethal: est. 50% mortality occurs after 2 days exposure

Critical thermal Maximum: mortality in 20-30 minutes

The foregoing conforms to data published by EPA, as follows.

<u>Species</u>	<u>Temperature and Impacts</u>	
	Growth Limited	Critical Thermal Max
Brook Trout	19C/66F	24C/75F
Rainbow Trout	19C/66F	24C/75F

Quality Criteria for Water (AKA "The Gold Book", EPA 5/1/86) See Table 11 in chapter entitled "Temperature".

Connecticut's Class A, AA and B surface waters are designated for "habitat for fish and other aquatic life and wildlife [and] recreation". Surface Water Quality Standards, Effective December 17, 2002 (the "WQS") at 8. Trout fishing is also an existing use in many of Connecticut's rivers. For example, trout fishing has been conducted in the Norwalk River well before November 28, 1975, thereby satisfying DEP's definition of an existing use. WQS at A-

3. Furthermore, the Norwalk River is stocked with trout by DEP twice annually, and has been designated as a Class 3 Wild Trout Management Area between Ridgefield and Wilton.

DEP's surface water quality standards contain criteria to support the designated and existing uses of Class AA, A and B waters. The water temperature criteria are found in a provision entitled "Allowable temperature increase", which contains one narrative criterion and two numeric criterion, as follows, [t]here shall be no changes from natural conditions that would impair any existing or designated uses...and , in no case exceed 85 degrees F, or in any case raise the temperature of surface water more than 4 degrees F." (WQS at 10, 11 and 12). These temperature criteria are longstanding, and have no known rationale. Thus, in an e-mail dated April 15, 2002, Lee Dunbar, Assistant Director of the Planning and Standards Division, Bureau of Water Protection and Land Reuse, stated that the two numeric criterion "were developed many years ago – probably 'BPJ' based on EPA guidance at that time. There is no technical support document explaining how it was done that I know of. We haven't revised the temperature criteria in many years." (Copy annexed as Exhibit A). In a letter to me dated August 6, 2008 (Exhibit B), Mr. Dunbar stated more precisely that the WQS' temperature criteria were established in 1973, 36 years ago, and have remained relatively unchanged since then.

The structure of the WQS' temperature criteria raises the question as to how the narrative criterion, which is seemingly protective of "existing or designated uses", interacts with the numeric criteria. In both his 4/15/02 e-mail and 8/6/08 letter, Mr. Dunbar indicates that determinations of the thermal impacts of new or revised discharges are "based on best professional judgment". This, however, introduces an element of subjectivity pursuant to which the narrative criterion could be subordinated to the more explicit and objective numeric criteria. In a meeting that I had on October 8, 2008, with Mr. Dunbar, Chris Bellucci and Rosemary Gatter, the DEP representatives acknowledged that in the context of a water quality standard which contains both narrative and numeric criterion, the numeric criterion is apt to get more consideration. This indicates that in the context of any permit application to DEP for a new or revised discharge, the thermal component of the discharge is likely to be permitted as long as it complies with the two numeric criteria. This would not be objectionable, except that the two numeric criterion in the WQS are severely flawed, and fail to protect trout.

The 85 degree maximum numeric criterion is uniquely useless, since according to DEP and EPA critical thermal max (mortality in 20-30 minutes) is 75 - 77 degrees F for brook and rainbow trout. The long-term lethal temperature (50% mortality after 7 days exposure) for brook and brown trout ranges from 68 to approximately 77 degrees F. Thus, it is clear that permitting surface water temperatures to rise to levels far short of the 85 degree maximum numeric criterion would result in the extermination of every trout in Connecticut.

The 4 degree F allowable temperature increase criterion also appears useless, as applied. In his 8/6/08 letter (Exhibit B), Mr. Dunbar acknowledged that DEP does not apply the 4 degree F criterion from a fixed baseline temperature, but rather, applies it cumulatively (i.e., incrementally). Regulating temperature increases to Connecticut's surface waters resulting from new or modified discharges without reliance on a fixed baseline, however, inevitably

results in water temperatures substantially in excess of the 4 degree limitation. This point is perhaps best explained by means of a hypothetical.

Take a hypothetical river segment (the “segment”) which harbors a cold water trout fishery. Assume that upstream of the segment are two or more dischargers each of whose discharge has a thermal component which can elevate the ambient temperature of the segment. Assume further, that over the course of 10 years these dischargers make a total of 4 applications to DEP for revisions to their discharge permits. It is determined that each such discharge revision will raise the average, annual ambient temperature in the segment by 3 degrees F. Assume also that at the beginning of the 10 year period the average ambient temperature in the segment is 66 degrees F.

In this hypothetical, since each of the 4 revised discharges would result in an average temperature increase in the segment of 3 degrees F, there arguably would be no basis for denying any of the four applications on the basis of the numeric 4 degree F criterion. Nevertheless, granting all the applications would raise the average ambient temperature in the segment by 12 degrees to 78 degrees F, and would not necessarily violate the numeric 85 degree F maximum numeric criterion. However, an average annual ambient temperature of 78 degrees F, and even higher during the warmer months, would be deadly to trout.

The above may lack technical rigor, but suffices to make the point that in the long-term the 4 degree F criterion fails to protect cold water fisheries, since it is applied in a manner which permits incremental increases in water temperature far beyond 4 degrees F that are lethal to trout. Framed somewhat differently, the 4 degree F criterion as applied impairs existing and designated uses.

In light of the foregoing, it is essential that DEP revise the numeric temperature criteria in its WQS so as to eliminate their potential for the impairment of existing and designated uses. Since application of the 4 degree F allowable temperature increase criterion over the last 36 years has undoubtedly contributed to a general rise of surface water temperatures above “natural conditions”, this may be difficult. Alternatively, DEP could at a minimum delete the two numeric criterion from its WQS, and leave only the narrative prohibition on the impairment of existing and designated uses. This, hopefully, would serve to protect cold water fisheries from further impairment, if applied rigorously. In an era of global warming, more attention must be paid to the protection and preservation of existing cold water fisheries.

## 2. The WQS Lack Adequate Standards And Criteria For Phosphorus And Should Be Revised To Provide Numeric Criteria For This Destructive Pollutant.

Phosphorous is a member of the class of pollutants known as “nutrients” and causes a condition known as “eutrophication”, which is characterized by excessive subsurface plant growth and the accumulation of algae at the water’s surface. When this plant life dies, the chemical reaction associated with its decomposition depletes the water of oxygen. Eutrophication is primarily a warm weather phenomena. As the weather warms, phosphorus combines with a relatively small amount of nitrogen to effectively fertilize the water to produce choking plant growth. During

the warmer months the resulting deoxygenation of the water column can create a dead zone in as much as the bottom one-third of an afflicted water body. Fish and other animal life in this zone must either vacate it, or die.

Phosphorus discharged to surface waters has several sources. Waste treatment plants (“WTPs”) are a primary source. Other significant sources include nonpoint source discharges and malfunctioning septics.

The WQS contain some general narrative standards pertaining to phosphorus. (See standards 19 and 20 at 5). Additionally, with reference to Class AA and A surface waters, the WQS provide the following narrative criteria “[n]one other than natural origin”. *Id.* at 10, 11. With reference to rivers and streams, the WQS contain no numeric criteria for phosphorus, and in the case of Class B rivers and streams, contain no criteria, either narrative or numeric, regulating the discharge of phosphorus. These limited standards and criteria are an apparent failure, in light of the serious eutrophication afflicting many of Connecticut’s surface rivers and streams, as will be discussed more fully below.

The WQS do contain numeric criteria for phosphorus for lakes. *Id.* at 13, 14. According to these criteria, a lake is considered eutrophic when its phosphorus concentration reaches 30-50 ug/l (parts/billion), and highly eutrophic when its phosphorus concentration reaches 50 + ug/l. DEP defines highly eutrophic in this portion of the WQS as “[e]xcessive enrichment with plant nutrients...characterized by severe blooms of algae and /or extensive areas of dense macrophyte beds. Water contact recreation may be extremely limited.”

The severe impacts of phosphorus pollution on Connecticut’s surface waters can be exemplified by reference to data concerning the Norwalk River. This data was provided to me in my capacity as a representative to the Norwalk River Watershed Initiative, by Harbor Watch/River Watch (“HWRW”) a Westport laboratory often relied on by DEP. The Norwalk River has three upstream WTPs as follows: Ridgefield Main (site # NR22); Ridgefield Route 7 (site # NR16); and Redding (site # 9.8). Two of these WTPs, Ridgefield Main and Redding, are equipped with phosphorus removal equipment, which I am advised is relatively inexpensive and effective. Inexplicably, Ridgefield Main and Redding are authorized by DEP to shut down their phosphorus removal equipment annually, for seven months, from October 1 through April 30. The Redding WTP, however, voluntarily keeps its phosphorus removal equipment operative for the entire year. Data collected by HWRW for the spring, summer and early fall of 2008, on 5/1, 6/19, 8/21 and 9/24 indicate the following. The phosphorus for Ridgefield Main and Redding were non detect, except for Redding on 5/1 when the reading was 5.2 mg/l (parts/million, or 5,200 ug/l). This latter reading on 5/1 was probably connected to some sort of atypical upset. The four readings for the Ridgefield Route 7 WTP, which lacks phosphorus removal equipment, were consecutively from 5/1 through 9/24, as follows: 5.4 mg/l (5,400 ug/l); 5.15 mg/l (5,150 ug/l); 5.07 mg/l (5,070 ug/l); and 4.57 mg/l (4,570 ug/l). HWRW, Water Quality Data Report For the Norwalk River Watershed, May 2008 through September 2008, Table 4 at 4. (Exhibit C). Data collected by HWRW on four occasions during the winter of 2008 - 2009, on 11/4/08, 12/16/08, 1/20/09, 3/10/09, when the phosphorus removal equipment of Ridgefield Main was shut down, reflect phosphorus concentrations as follows: Ridgefield

Main - .07 mg/l (70 ug/l) to 2.1 mg/l (2,100 ug/l); Ridgefield Route 7 - 4 mg/l (4,000 ug/l) to 5.2 mg/l (5,200 ug/l); and Redding - .07 mg/l (70 ug/l) to 5.1 mg/l (5,100 ug/l). (Exhibit D)<sup>1</sup>. Since Ridgefield Main is a much larger facility than either Ridgefield Route 7 or Redding, its discharge of phosphorus to the Norwalk River during the period that its phosphorus removal equipment was off, measured in pounds, was larger than the discharge of Ridgefield Route 7 and the disabled Redding WTP combined. (Exhibit E).

Given that DEP considers a concentration 50 ug/l or more to engender highly eutrophic conditions, the above discharges, primarily from the Ridgefield WTPs in the thousands of ug/l, represent a seemingly massive level of contamination. This no doubt contributes to the fact that most of the impoundments along the Norwalk River are highly eutrophic during the warmer months.<sup>2</sup> Further, the above data evidences the insensibility of allowing Ridgefield Main and any other WTP to shut down their phosphorus removal equipment during the winter. In the Norwalk River Watershed, this has, and will continue to result in massive additional discharges of phosphorus to the Norwalk River, that could otherwise be avoided. Some of this phosphorous will be carried downstream into Long Island Sound, but the bulk will be retained in the River's sediment where it will be available in the spring to contribute to eutrophication.

The negative impacts of phosphorous pollution should also be viewed in the context of the warming of the Norwalk and other rivers as a result of DEP's deficient temperature criteria. As the temperature in Connecticut's rivers rises during the warmer months, trout seek refuge in colder river segments to survive. Many impoundments are both large and deep with the bottom of their water column being significantly colder than more shallow river segments. Consequently, impoundments should be an ideal refuge for trout during the warmer months. As indicated above, however, eutrophication turns the deeper, colder, bottom portions of afflicted impoundments into deoxygenated dead zones. Thus, eutrophic impoundments cannot be utilized by trout as a refuge. This, plus the heavy surface and subsurface growth associated with eutrophication, precludes the utilization of such impoundments by anglers, as well as other user groups, and increases trout mortality. There are numerous examples of eutrophic impoundments along the Norwalk River, including Fox Hill Pond, Topstone Pond, Factory Pond, Little Pond, and Stonehenge Pond. Another example is Lees Pond, which is a large very deep impoundment on the Saugatuck River, which could serve as an excellent trout refuge, but for the fact, as reported by HWRW, that it is highly eutrophic and burdened by an extensive dead zone in its deeper portions.<sup>3</sup>

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<sup>1</sup> These numbers are estimates, since Exhibit D is a bar graph. I am informed that the high readings for Redding on 12/16/08 and 1/20/09 were due to an upset involving the phosphorus removal equipment. The reading for 3/10/09, after the equipment had been repaired, is non detect for phosphorous.

<sup>2</sup> While impoundments are somewhat different from lakes, they are quite similar in terms of their characteristics, and are usually referred to as "ponds". In any event, they are sufficiently similar to lakes so that the discharge of phosphorus to the Norwalk River in concentrations of thousands of ug/l, up to a hundred times greater than DEP deems highly eutrophic, cannot be justified by any conceivable rationale.

<sup>3</sup> Impoundments, if not eutrophic, can serve as a refuge for anadromous cold water species, as well as

In short, phosphorus is a pollutant with severe adverse impacts. It is a major contributor to eutrophication, which depletes water bodies of oxygen, destroys their aesthetic values, and precludes fishing and other recreation. DEP's current regulations governing phosphorus are aptly described as minimal and ineffective. To remedy this situation DEP should revise the WQS to include appropriate numeric criteria for phosphorus. The phosphorus removal equipment that would be universally required for dischargers by such criteria is relatively inexpensive and effective. Further, DEP should not permit WTPs, or other dischargers, to shut down their phosphorus removal equipment during the winter.

Respectfully submitted,  
Richard J. Weisberg  
July 6, 2009

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trout.

## APPENDIX B

### Comments Of Richard J. Weisberg Concerning Temperature Criteria, and Standards and Criteria For Phosphorus, Submitted On 2/3/10, In Reponse to DEP's Notice Of Proposed Revisions Dated 12/22/09 (the "Proposed Revisions").

Previously, by a notice dated April 16, 2009, and entitled Notice of Intent To Conduct a Triennial Review of Water Quality Standards, DEP solicited comments from interested parties on any aspect of its water quality standards that it was believed DEP "should consider for potential revision." In response, I submitted comments dated July 6, 2009. These prior comments (the "RJW 7/09 Comments") are annexed as Appendix A (without exhibits) and will be referred to as necessary.

### Comments

#### 1. In One Remaining Respect, DEP's Revised Temperature Criteria For Class AA, A, and B Surface Waters Seemingly Fail To Protect Cold Water Fisheries, Including Trout, And Should Be Further Revised Accordingly

The Proposed Revisions contain criteria to support the designated and existing uses of Class AA, A and B waters. The water temperature criteria are found in a provision entitled "Temperature" (Revised Provisions at 9, 11 and 13) and in Appendix F. I am very pleased to note that the proposed revisions to the water temperature criteria represent a protective and substantial improvement over DEP's current temperature criteria. There remains, however, one criterion that appears to be flawed and unprotective of cold water fisheries, including trout. This is the 4 degree F allowable temperature increase criterion, which is set forth in all four Sections of Appendix F of the Proposed Revisions, and which provides that "[i]n any case, the ambient instream temperature should not be raised by more than 4" degrees F.

The 4 degree F allowable temperature increase criterion is a holdover from DEP's current water quality standards ("WQS"). As noted in my prior, 7/09 comments, it was acknowledged to me by DEP management that DEP does not apply the 4 degree F criterion from a fixed baseline temperature, but rather, applies it cumulatively (i.e., incrementally). (RJW 7/09 Comments at 3). Nothing in the language of Appendix F indicates that this will not continue to be the case.

As I stated in my prior comments, regulating temperature increases to Connecticut's surface waters resulting from new or modified discharges without reliance on a fixed baseline inevitably results in water temperatures substantially in excess of the 4 degree limitation. (Id.) I explained this point by means of a hypothetical. (Id.) I have set forth immediately below a similar hypothetical to explain my continuing concern with this provision, which hypothetical utilizes the new numeric criteria proposed in Appendix F, in Sections F1 and F4 applicable to cold water fisheries, rather than the numeric criteria found in DEP's current WQS.

Take a hypothetical river segment (the "segment") which harbors a cold water trout fishery. Assume that upstream of the segment are two or more dischargers each of whose discharge has

a thermal component which can elevate the ambient temperature of the segment. Assume further, that over the course of 10 years these dischargers make a total of 4 applications to DEP for revisions to their discharge permits. It is determined that each such discharge revision will raise the average, annual ambient temperature in the segment by 3.5 degrees F. Assume also that at the beginning of the 10 year period the average ambient temperature in the segment is 63 degrees F.

In this hypothetical, since each of the 4 revised discharges would result in an average temperature increase in the segment of 3.5 degrees F, there arguably would be no basis for denying any of the four applications on the basis of the numeric 4 degree F criterion. Nevertheless, granting all the applications would raise the average ambient temperature in the segment by 14 degrees to 77 degrees F. However, an average annual ambient temperature of 77 degrees F would be deadly to trout. Seventy-seven degrees is at or exceeds the critical thermal maximum temperature (mortality in 20 – 30 minutes) for brook and rainbow trout, and exceeds the long-term lethal temperature (50% mortality after 7 days exposure) for brown trout. (Mortality data obtained from DEP and EPA Goldbook. See RJW 7/09 Comments at 1-2).

The above may lack technical rigor, but should suffice to make the point that in the long-term the 4 degree F criterion fails to protect cold water fisheries, if it is applied cumulatively, which permits incremental increases in water temperature far beyond 4 degrees F that are lethal to trout. A similar point can be made with reference to cool and warm water fisheries, covered by Sections F2 and F3. This adverse, unprotective consequence of the 4 degree F criterion can be avoided, however, if: (1) it is applied from a fixed temperature baseline; or (2) it is made clear in the Proposed Revisions that application of the 4 degree F criterion is limited by the other numeric criteria in Appendix F.

It could be argued that the 4 degree criterion is indeed limited by the other numeric criteria in Appendix F in view of the language in the “Temperature” provision for Class AA, A and B waters (the Proposed Revisions at 9, 11, and 13), which provides that “that in no case shall minimum requirements for cold, cool and warm water habitats defined by the presence of indicator fish species or other acceptable measure for each habitat type be exceeded as defined in Appendix F.” (Emphasis added). This, however is far from clear. First, the terms “indicator fish species” and “acceptable measure for each habitat type” are nowhere defined and are unknowns. Moreover, the above language is framed in terms of “minimum requirements” while the numeric criteria in Appendix F (other than the 4 degree F criterion) are framed in terms of average or maximum temperatures which may not be exceeded.

In sum, the proposed, revised temperature provisions are ambiguous, confusing and do not provide the necessary assurance that the 4 degree F criterion will not be applied cumulatively, as in the past, to the serious detriment of cold water and other fisheries. This problem can be readily corrected, however, by modifying the relevant language in Appendix F as follows. “In any case, the ambient instream temperature should not be raised by more than 4 degrees F, and in no case may the ambient instream temperature be raised in excess of the numeric criteria cited above.”

2. The Proposed Revisions Lack Adequate Standards And Criteria For Phosphorus And Should Be Further Revised To Provide Numeric Criteria For This Destructive Pollutant.

There does not appear to be any change in the Proposed Revisions with reference to phosphorus to the extent that DEP's proposed phosphorus strategy does not provide for numeric criteria to regulate the discharge of phosphorus to Connecticut's rivers and streams. Similarly, the Proposed Revisions make no apparent change to DEP's inexplicable policy pursuant to which waste treatment plants are permitted to shut down their phosphorus removal equipment (if they have any) from October 1 through April 30 each year. This is very disappointing. Since there has been no meaningful change in DEP's phosphorus criteria or regulations, I stand on my prior comments on phosphorus. (See, RJW 7/09 Comments at 4-6).

Respectfully submitted,  
Richard J. Weisberg  
February 3, 2010