

**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

In the Matter of:)
)
Town of Newmarket Wastewater)
Treatment Plant)
)
NPDES Permit No. NH0100196)
_____)

NPDES Appeal No. 12-05

RESPONDENT EPA'S SUR-REPLY

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TABLE OF CONTENTS

TABLE OF AUTHORITIES3

I. INTRODUCTION4

II. ARGUMENT6

 A. The Coalition’s Newly-Styled Argumentation Regarding the Need to Demonstrate Cause and Effect and to Rely on “Scientifically Defensible” Information When Imposing a Water Quality-Based Effluent Limitation is Untimely and Unpersuasive 6

 B. EPA Properly Derived the Permit’s Nitrogen Effluent Limitation By First Conducting a Reasonable Potential Analysis Under 40 C.F.R. § 122.44(d)(1)(i) and, Upon Finding Reasonable Potential, Subsequently Deriving an Effluent Limitation Under 40 C.F.R. § 122.44(d)(1)(vi)(A) 10

 C. EPA’s Opposition Responded to the Coalition’s Petition As Necessary to Dispose of the Issues and Arguments Therein and Nowhere Acknowledged Clear Error 13

 D. The Coalition’s Scientific and Technical Objections are Untimely and, Furthermore, Do Not Demonstrate Any Basis for Review 14

III. CONCLUSION22

TABLE OF AUTHORITIES

Federal Cases

Am. Paper Inst., Inc. v. EPA, 996 F.2d 346 (D.C. Cir. 1993)..... 12
Ethyl Corp. v. EPA, 541 F.2d 1 (D.C. Cir. 1976) 10
Lawyers Committee for Civil Rights v. U.S. Dep’t of Treasury, 534 F. Supp. 2d 1126
(N.D. Cal. 2008)..... 14
Upper Blackstone Water Pollution Abatement Dist. v. U. S. EPA, 690 F.3d 9 (1st Cir.
2012) 9, 10

Environmental Appeals Board Cases

In re Arecibo & Aguadilla Reg’l Wastewater Treatment Plants, 12 E.A.D. 97 (EAB
2005) 4, 9, 15
In re BP Cherry Point, 12 E.A.D. 209 (EAB 2005) 16
In re Keene Wastewater Treatment Plant, NPDES Appeal No. 07-18 (EAB 2008) (Order
Denying Review) 16
In re Keene Wastewater Treatment Plant, NPDES Appeal No. 07-18 (EAB Jan. 31,
2008) (Order Granting Motion for Leave to File a Reply) 5, 15
In re Knauf Fiber Glass, GmbH, 8 E.A.D. 121 (EAB 1999)..... 5, 16
In re Peabody W. Coal Co., 12 E.A.D. 22 (EAB 2005) 6
In re Upper Blackstone Water Pollution Abatement Dist., NPDES Appeal Nos. 08-11 to
08-18 & 09-06 (May 28, 2010)..... 7
In re Zion Energy, LLC, 9 E.A.D. 701 (EAB 2001)..... 5

Regulations

40 C.F.R. § 122.44(d)(1)..... passim

I. INTRODUCTION

For the multiple substantive and procedural grounds previously set forth by EPA in its February 8, 2013, Memorandum in Opposition to the Petition for Review (“Opposition”), the Coalition’s Petition for Review has simply failed to demonstrate any basis for review of the nitrogen effluent limitation at issue in this case. Nothing in the Coalition’s Reply alters that conclusion. While this latest filing contains newly detailed factual explanation and legal argumentation about issues already addressed in previous filings, this late-arriving material cannot help the Coalition at this advanced stage of the proceedings. Rather, it serves only to engender more procedural transgressions. The problem for the Coalition is threefold:

First, there is no reason why the specific argumentation and factual explication appearing for the first time in the Reply could not have been included in the original Petition, *see* January 11, 2013 Order Denying Motion to File Supplemental Brief and Allowing Reply Briefs at 5 (“The Board is not persuaded that the Coalition has not had sufficient time to identify the issues and to substantively support its arguments or that additional time is warranted based on the circumstances presented.”). *In re Arecibo & Aguadilla Reg’l Wastewater Treatment Plants*, 12 E.A.D. 97, 123 n.52 (EAB 2005) (noting that attempt to use reply brief to substantiate a claim with new arguments was tardy and that petitioners should have raised all their claims and supporting arguments in their petitions).

Second, these newly elaborated arguments and explanations do not directly *reply* to assertions made by EPA in its Opposition, but in large part *reargue* more general

points already raised by the Coalition in its Petition, only this time with far more specificity and citation. This is impermissible. The Board will entertain the substance of a reply brief “only to the extent that it indeed addresses arguments newly raised by the Region.” *In re Keene Wastewater Treatment Plant*, NPDES Appeal No. 07-18, at 3 (EAB Jan. 31, 2008) (Order Granting Motion for Leave to File a Reply); *see also* February 27, 2013 Order, at 6 n.3 (“The Coalition should be aware that its response brief may only respond to issues raised in the Region's Opposition Brief. New issues or arguments will not be considered.”).

Finally, the Coalition also attempts to raise entirely new issues and arguments that it was perfectly capable of making—and was required to make—in its Petition. New issues raised in a reply are “equivalent to late filed appeals and must be denied on the basis of timeliness.” *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 126 n.9 (EAB 1999).¹

In sum, the Coalition has misconstrued the proper purpose and function of a reply, which may *not* be used by the Coalition as means to rectify—belatedly—the many procedural and substantive shortcomings of, as EPA’s Opposition details, a “facially inadequate Petition.” *In re Zion Energy, LLC*, 9 E.A.D. 701, 707 (EAB 2001) (rejecting as untimely a petitioner’s attempt to correct its failure to explain in the petition why the permit issuer’s response to comments on the draft permit was clearly erroneous or otherwise warranted review).

¹ Included in this category is extra-record argument drawn from three affidavits and correspondence between certain Coalition communities and professors at the University of New Hampshire. Reply at 5, n. 9, 7, 11, 16, 19, 21. These documents, which the Coalition did not include as exhibits to their filing, were created after permit issuance—indeed, most were generated after EPA filed its Opposition. EPA has opposed the Coalition’s motion to supplement the record with these documents. *See* Respondent EPA’s Opposition to Petitioner’s Motion to Supplement the Administrative Record and Depose the Experts Relied on by EPA, dated March 15, 2013.

Substantively, the Coalition spends 20 of 25 pages of its Reply setting out detailed alternative explanations of technical and scientific issues pertaining to nitrogen in the Great Bay Estuary. The Coalition has emphatically underscored its disagreement with EPA over the inherently technical issues pending before this Board, and over the degree of scientific certainty necessary before EPA may impose a water quality-based effluent limit in an NPDES permit under the Act. But merely pointing out differences over EPA’s scientific interpretation of data and other technical information contained in a complex record does not show reviewable error or abuse of discretion on EPA’s part. *In re Peabody W. Coal Co.*, 12 E.A.D. 22, 34 (EAB 2005) (“[W]here a permit decision pivots on the resolution of a genuine technical dispute or disagreement, the Board prefers not to substitute its judgment for the judgment of the decisionmaker specifically tasked with making such determinations in the first instance.”). As in the Petition, what the Coalition uniformly fails to demonstrate—or, in almost all cases, even *attempts* to demonstrate—is why EPA’s specific responses to comments on specific issues were inadequate or why its decision was otherwise irrational in light of the entire record. Review of the permit should accordingly be denied.

II. ARGUMENT

A. The Coalition’s Newly-Styled Argumentation Regarding the Need to Demonstrate Cause and Effect and to Rely on “Scientifically Defensible” Information When Imposing a Water Quality-Based Effluent Limitation is Untimely and Unpersuasive

As it did in its Petition, the Coalition claims in its Reply that EPA may only include water quality-based effluent limits if “the discharge ‘causes’ a water quality

criteria excursion.” See Reply at 21. The Coalition posits that 40 C.F.R. § 122.44(d)(1) “on its face” compels that conclusion. *Id.*

The Coalition has once more simply chosen to ignore EPA’s Response to Comments on the issue of whether a definitive causal link is required to be established between a specific pollutant discharge and the water quality impairment of a receiving water prior to imposing a water quality-based effluent limitation. See Opp. Ex. 1 at 57-59 and 79-80 (RTC) (AR B.1); see also *id.* at 16 fn. 15, 39-40, 86 fn. 38, 123-24. As EPA explained in its Opposition:

Although the question facing this Board turns on whether the Newmarket Treatment Plant’s nitrogen effluent discharge has a reasonable potential to cause or to contribute to an excursion of the State’s water quality standards in the Lamprey River and Great Bay proper, the words “reasonable potential” do not appear in the Coalition’s 101-page Petition. [Footnote omitted] Simply ignoring the relevant legal standard does nothing to diminish its applicability, and certainly does nothing to demonstrate legal error on the part of EPA, let alone clear error. The Coalition opts to leave EPA’s extensive legal analysis of the reasonable potential standard under section 122.44(d)(1)(i) unanswered.

Opp. at 43. The Coalition in its Reply again fails to even reference the “reasonable potential” standard, and thus does not substantively confront EPA’s interpretation of Section 301(b)(1)(C) and 40 C.F.R. § 122.44(d)(1), and EPA’s conclusion that the “[Agency] does not need to justify the decision to impose a permit limit based on a site-specific demonstration that nutrients are causing the claimed impairments in the water body of concern, but need only demonstrate that the discharge causes, *has the reasonable potential to cause, or contributes* to an in-stream excursion above a numeric or narrative criteria within a state water quality standard.” Opp. Ex. 1 at 16 n. 15 (RTC) (AR B.1), quoting *In re Upper Blackstone Water Pollution Abatement Dist.*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06, slip op. at 32 (May 28, 2010) . To the extent that the Coalition

in its Reply argues that Section 301(b)(1)(C) requires EPA to definitively prove a causal link between a specific discharge and a particular violation of water quality standards prior to the imposition of a water quality-based effluent limitation, *see* Reply at Section II.1-5 and Section III.1-2, review of these issues must, as a category, be denied.

The Coalition inexplicably claims that EPA in its Opposition “raises a new defense: the CWA and implementing regulations do not require ‘cause and effect or the use of scientifically defensible information’” which it characterizes as a “post-hoc rationalization.” Reply at 19-22. While this assertion is obviously untrue— EPA has consistently taken the position throughout these permit proceedings that the CWA and its implementing regulations do not require cause-and-effect demonstrations prior to establishing water quality-based limitations, *see, e.g.*, Opp. Ex. 1 at 16 fn. 15, 63, 77-78 (RTC) (AR B.1), and furthermore maintained that scientific information used to derive such limitations need not under the plain language and preamble of the regulation be subject to any standard other than to be “relevant,” *see, e.g.*, *id.* at 69, n.43 —the Coalition tries to use this fictional shift in EPA’s position to introduce new argumentation regarding *Upper Blackstone* that should have appeared in its Petition and, moreover, to introduce additional extra-record materials that the Coalition claims substantiates its position.

In light of EPA’s unambiguous positions on these preexisting issues, there is simply no reason why the Coalition could not have timely presented this argumentation and supporting material in its Petition. For example, the Coalition makes new arguments based on a memorandum from Matt Liebman (AR H.72 at 1), which is a document cited in the Response to Comments. *See, e.g.*, Opp. Ex. 1 at 10-11 fn. 11(RTC) (AR B.1). As

another example, the Coalition cites to the Technical Guidance Manual for Developing Total Maximum Daily Loads Book 2: Rivers and Streams; Part 1: Biochemical Oxygen Demand/Dissolved Oxygen and Nutrients/Eutrophication for the proposition that “nutrient wasteload allocations must be based on a documented ‘cause and effect’ relationship using appropriate models.” Yet this guidance, which pertains to the development of TMDLs, not the establishment of water quality-based effluent limitations, has been available since 1997 and was obviously available to the Coalition at the time of its Petition; it is, furthermore, not even in the administrative record. The Coalition’s new argumentation is procedurally barred. *In re Arecibo & Aguadilla Reg’l Wastewater Treatment Plants*, 12 E.A.D. 97, 123 n.52 (EAB 2005).

The Coalition’s arguments are also substantively without merit. The Coalition contends that the *Upper Blackstone* decision actually stands for the proposition that “causation” must be proven prior to imposition of a water quality-based effluent limitation under 40 C.F.R. § 122.44(d), pointing facilely to the Court’s use of the word “causing” and its reference to EPA’s conclusion, based on a laboratory experiment, “that the basic causal relationship demonstrated in the MERL experiments ‘corresponds to what is actually occurring in the Providence /Seekonk River system.’” Although the Court in *Upper Blackstone* may indeed have been convinced that EPA’s record demonstrated that the District’s treatment plant was “causing” a water quality standards excursion, it nowhere suggested that such a finding was necessary. On the contrary, the court specifically acknowledges the full breadth of the regulations:

EPA regulations require permitting authorities to include in NPDES permits conditions which control all pollutants or pollutant parameters . . . [that] are or may be discharged at a level which will cause, *have the reasonable potential to cause*, [emphasis supplied] or contribute to an excursion above any State water

quality standard, including State narrative criteria for water quality. We thus reject the notion that in order to strengthen the District's discharge limits, the EPA must show that the new limits, in and of themselves, will cure any water quality problems [internal quotation marks and citations omitted].

Upper Blackstone Water Pollution Abatement Dist. v. U. S. EPA, 690 F.3d 9, 33 (1st Cir. 2012). The Coalition's reading of the case is impossible to reconcile with the Court's view that, "[R]ecognizing...the developing nature of [the field]...[t]he [EPA] Administrator may apply his expertise to draw conclusions from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, from probative preliminary data not yet certifiable as 'fact,' and the like." *Id.* at 24 (quoting *Ethyl Corp. v. EPA*, 541 F.2d 1, 27-28 (D.C. Cir. 1976)). The Coalition's reliance on the case is ironic in addition to being unpersuasive. The central tenet of its Petition is, after all, that correlations cannot be used to support establishment of a water quality-based effluent limit in a permit or as evidence of causal relationships between pollutants and water quality impairments. But the court in *Upper Blackstone* upheld EPA's reliance, in significant part, on *correlations* between laboratory and real world datasets in establishing the District's permit limitation. *Id.* at 25-26.

B. EPA Properly Derived the Permit's Nitrogen Effluent Limitation By First Conducting a Reasonable Potential Analysis Under 40 C.F.R. § 122.44(d)(1)(i) and, Upon Finding Reasonable Potential, Subsequently Deriving an Effluent Limitation Under 40 C.F.R. § 122.44(d)(1)(vi)(A)

The Coalition alleges that EPA determined that a nitrogen effluent limitation was necessary solely on the basis of a projected in-stream exceedance of "a selected numeric value [for nitrogen] to the receiving water," as opposed to finding that the Newmarket discharge was causing in-stream impacts associated with cultural eutrophication. Reply

at 3-5. The Coalition further claims that EPA, in deriving this in-stream numeric value to interpret the State's narrative nutrient criterion, mistakenly utilized the procedures set forth at section 122.44(d)(1)(vi)(A) rather than section 122.44(d)(1)(i). Reply at 22-24.²

The Coalition's inaccurate depiction of EPA's actions in this permit proceeding—that EPA determined the existence of a narrative water quality criterion exceedance by merely comparing existing in-stream nitrogen concentrations with its calculated in-stream target—cannot be reconciled with the record before this Board, or with EPA's description of that record in its Opposition. In both the Fact Sheet and Response to Comments, EPA detailed its conclusion that the Lamprey River had reached its assimilative capacity for nitrogen based on the presence of water quality responses associated with nitrogen-induced cultural eutrophication—these response indicators included but were not limited to eelgrass loss, low DO levels and elevated chlorophyll-a levels. Ex. 1 at 3-16 (RTC) (AR B.1); Ex. 2 at 10-28 (Fact Sheet) (AR A.8). Upon concluding that the Lamprey River had reached its assimilative capacity for nitrogen, and was exhibiting signs of cultural eutrophication, EPA then conducted its reasonable potential determination under 122.44(d)(1)(i), concluding that the Newmarket nitrogen discharge had a reasonable potential to cause, or to contribute, to excursions above the State's narrative nutrient water quality criterion, given the high background concentrations of nitrogen and limited available dilution. Ex. 1 at 16, 39-41, 57-59 (RTC) (B.1); Ex. 2 at 25-28 (Fact Sheet) (AR A.8). All of this is consistent with EPA's explanation in its Opposition:

² Section 122.44(d)(1)(vi)(A) governs the derivation of permit effluent limitations to implement narrative criteria and fully protect designated uses once the need for such limits have been established under section 122.44(d)(1)(i), which requires the imposition of effluent limitations on pollutants that "are or may be discharged [from a point source] at a level which will cause, have the reasonable potential to cause, or contribute to an excursion" of the narrative or numeric criteria set forth in state water quality standards.

EPA's analysis of the available information, including NHDES documentation of cultural eutrophication related impacts in the Lamprey River and downstream in Great Bay and Little Bay; high background levels of nitrogen in the Lamprey River; and the NHDES report "Analysis of Nitrogen Loading Reductions for Wastewater Treatment Facilities and Non Point Sources in the Great Bay Estuary Watershed-Draft," Ex. 28 ("NHDES Nitrogen Loading Reduction Report") (AR K.13), [footnote omitted] resulted in a determination that the Treatment Plant's nitrogen discharge has a reasonable potential to cause or contribute to an exceedance of water quality standards. *In order to further evaluate the significance of Newmarket's nitrogen contributions* [emphasis added], EPA estimated the increase in receiving water total nitrogen concentration currently caused by the Newmarket Treatment Plant at the point of discharge by dividing the effluent concentration by the dilution factor. At a discharge concentration of 30 mg/l and a dilution factor of 55, the resulting receiving water concentration after initial mixing is 0.55 mg/l, which exceeds the target in-stream concentration of 0.3 mg/l.

This analysis is entirely in keeping with the factors relevant to reasonable potential determinations (*e.g.*, consideration of existing levels of nitrogen in the discharge; background sources of nitrogen; available dilution) set forth in 40 C.F.R. § 122.44(d)(1)(ii). EPA then set about to derive the permit limit to implement the narrative criterion using the procedures set forth at 40 C.F.R. § 122.44(d)(1)(vi)(A). Opp. Ex. 1 at 10-21 (RTC) (AR B.1); Opp. Ex. 2 at 25-30 (Fact Sheet) (AR A.8).

The Coalition's claim that EPA erred by consulting 40 C.F.R. § 122.44(d)(1)(vi)(A) for guidance on how to interpret the narrative criterion is unfounded. EPA in issuing an NPDES permit must, by necessity, translate existing narrative criteria into in-stream numeric concentrations when developing water quality-based effluent limitations. *Am. Paper Inst., Inc. v. EPA*, 996 F.2d 346, 351 (D.C. Cir. 1993). The process of translating or interpreting a narrative criterion is governed by 40 C.F.R. § 122.44(d)(1)(vi), subsection (A) of which describes a process for calculating a protective in-stream numeric concentration for the pollutant of concern. This calculated numeric in-stream target, along with other information relied on by EPA such as evidence of low

dissolved oxygen and excessive plant growth in the receiving waters, is facially relevant and material to EPA's determination of whether the receiving water's assimilative capacity for nitrogen had been reached, and whether a reasonable potential for the discharge to cause, or to contribute, to a water quality criterion exceedance exists. As EPA explained in the Response to Comments, "[T]he *NHDES Great Bay Nutrient Report* in EPA's view represents NHDES's effort to translate and give meaning to its narrative nutrient criterion and, independently, constitutes scientifically useful and relevant information." Opp. Ex. 1 at 61. The Coalition fails to identify any reason why EPA should be precluded from utilizing an in-stream numeric target as a part of its reasonable potential analysis. The Coalition, moreover, neglects to describe what alternative technical methodology, other than a conclusive cause-and-effect demonstration,³ it would employ in order to make such a reasonable potential determination. Finally, EPA's reliance on the procedures set forth in 122.44(d)(1)(vi) for assistance in interpreting the narrative nutrient criterion was perfectly apparent from the record below, but the Coalition failed to raise in the Petition its claim that EPA erred in relying on this provision. Therefore, in addition to being substantively unavailing, it is procedurally barred. Review of this issue should be denied.

C. EPA's Opposition Responded to the Coalition's Petition As Necessary to Dispose of the Issues and Arguments Therein and Nowhere Acknowledged Clear Error

The Coalition alleges that EPA admitted error in its Opposition. The Coalition specifically asserts that EPA did not address "critical" issues or factual assertions made by the Coalition in its main brief; that it failed to respond to the argument that the wrong

³ EPA has explained at length that § 122.44(d) does not require a showing that a pollutant is causing an excursion above a state's narrative water quality criterion. *See, e.g.*, Ex. 1 at 57 (RTC) (AR B.1).

form of pollutant was being regulated and that nitrate is not at a toxic level in the receiving waters; and that it did not contest inferences drawn by the Coalition from EPA's responses to FOIAs. Reply at 25.

The Coalition is mistaken on all counts. While the Coalition claims that EPA "did not dispute the vast majority of these facts in response with references to relevant scientific data or analyses," such a generic allegation, which does not even specify the facts at issue, or for that matter what would constitute "relevant" information, is meritless. The Coalition seems to ascribe significance to the fact that some issues were addressed in the Appendices, rather than the main brief, but this is plainly immaterial. *See* February 27, 2013 Order (denying motion to strike Appendices). As to the Coalition's more specific claims, EPA indeed responded to the assertions related to the form of nitrogen being regulated and nitrate toxicity, finding the Coalition's claims to be unconvincing. *See* Appendix A at 9, 18, 20, 34-37.

Finally, the Coalition's allegation that EPA admitted facts through the mere provision of documents in response to FOIA requests is without legal foundation. *See, e.g., Lawyers Committee for Civil Rights v. U.S. Dep't of Treasury*, 534 F. Supp. 2d 1126, 1134 (N.D. Cal. 2008) ("The law is clear that FOIA requests properly seek *records* - and *not* information or answers.").

D. The Coalition's Scientific and Technical Objections are Untimely and, Furthermore, Do Not Demonstrate Any Basis for Review

In its Reply, the Coalition outlines a litany of scientific and technical inferences, for the most part drawn from deposition testimony, that it claims EPA did not dispute in its Opposition and, for the first time, includes detailed argumentation, explanation and

citation based on the “most salient (undisputed) record information confirming EPA’s actions are clear error...” *See* Reply, Section II.1-2, 4.

The Board should reject this newly developed argumentation as untimely, *in toto*. The Coalition has offered no explanation why it could not have included this new argumentation and explication (finally accompanied by pinpoint citation) in its Petition. If the Coalition believed that EPA failed to substantively address or encompass these issues in its Opposition, the Coalition was free to point out that alleged failing in its Reply. What the Coalition was not permitted to do is to reargue and elaborate these points, this time supplying the Board with the specificity and citation missing from its Petition. Moreover, a demonstration that a petitioner has satisfied procedural thresholds must be made in its petition; a petitioner cannot rely on a reply to make such showings. *In re Arecibo & Aguadilla Regional Wastewater Treatment Plants*, 12 E.A.D. 97 (EAB 2005). It is thus axiomatic that a petitioner must raise all claims *and supporting arguments* in its petition and that an attempt to substantiate a claim with new arguments or otherwise supplement a deficient appeal through later filings must be rejected as tardy. *Id.*, 12 E.A.D. at 123 n.52. The Coalition is simply too late in its wholesale provision of facts and accompanying argumentation contained its Reply.

Not only is the Coalition’s new argumentation untimely, the Coalition also fails to limit itself to “arguments newly raised by the Region.” This is directly contrary to the Board’s precedent governing reply briefs. *In re Keene Wastewater Treatment Plant*, NPDES Appeal No. 07-18, at 3 (EAB Jan. 31, 2008) (Order Granting Motion for Leave to File a Reply). By way of illustration, the Coalition in Section II.4 presents a series of catechisms based on the deposition testimony, posing technical questions and then

providing detailed responses—effectively replying to *itself*, rather than anything in EPA’s Opposition. This tactic is far outside the proper boundaries for the content of a reply and is, furthermore, contrary to the Board’s February 27, 2013 Order, at 6 n.3 (“The Coalition should be aware that its response brief may only respond to issues raised in the Region’s Opposition Brief. New issues or arguments will not be considered.”).⁴

Substantively, the multiple allegations made in the Coalition’s Reply are without merit and have already been encompassed by EPA’s Opposition and permit record.

The Coalition, for example, claims that “if there is one fact that is irrefutable at this point, it is that nutrient increases never caused any change in algal growth in the system impacting either water column transparency or DO.” Reply at 4. In fact, this has been thoroughly refuted, by both EPA and NHDES, in multiple documents, as outlined in EPA’s Opposition.⁵

⁴ This case is closely akin to *In re Keene Wastewater Treatment Plant*, NPDES Appeal No. 07-18, at 26 (EAB 2008) (Order Denying Review) (citing *In re BP Cherry Point*, 12 E.A.D. 209, 216 n.18 (EAB 2005); *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 126 n.9 (EAB 1999)), where the Board held:

The same result obtains with respect to the arguments presented in the City’s reply brief. As was the case with the factual issues analyzed in the preceding section, we have been unable to identify anything in the City’s reply brief that speaks to something ‘new’ the Region raised in its response to the petition, and the City itself makes no effort to point us to such ‘new’ arguments in the Region’s response. See Reply Br. at 15-19. Instead, the reply merely repeats variations on comments submitted on the draft permit and belatedly adds some new contentions regarding the Region’s purportedly erroneous use of the Gold Book criteria to derive the phosphorus WQBELs. Compare Reply Br. at 15-19 with RTC cmts. B2, B3, B4, B5, B6, B7, B8, B9, B11 (a), B11 (c), B11 (g), C1, C3, C7, at 19, 20-21, 29, 31-35, 37, 39-40, 42-43, 53-54. All of these matters could have been included in the City’s petition, and their presentation at this juncture is untimely.

⁵ More generally, the Coalition’s heavy reliance on the deposition materials and isolated statements by individual NHDES employees from a state superior court proceeding is misguided, as EPA exercised its independent judgment under 301(b)(1)(C) in arriving at the permitting determinations in this case. See Opp. Ex. 1 at 7 n.8, 9, 11-13, 43, 83, 96 (“EPA did not, as characterized in the comment, rely on any DES assumption regarding the relationship between DO and algal growth. EPA has conducted an independent review of the available data, including but not limited to the analyses performed by NHDES and the additional information provided by the Coalition, and has concluded as a technical matter that DO impairments in the Lamprey River are related to algal growth.”).

First, the record basis the Coalition cites (fn 8) in support of its assertion – a statement in a 2012 NHDES letter that “it is correct that there have been no clear trends in chlorophyll-a . . . measured in Great Bay over the full period of record from 1974 to 2011”—does not equate to the far broader assertion that the Coalition seeks to present as an “irrefutable fact.” That assertion is not only conclusory and unsupported, but is clearly belied by the record.⁶ See Opp. Ex. 32(Burack letter dated October 19, 2012), attachment at 1, 7; Opp. Ex. 1 (RTC) at 84-85, 91-93; Appendix A at 3-4, 10, 22.

Second, the Coalition misleadingly suggests that “algal growth” has not changed based on a statement that refers solely to chlorophyll-a. As EPA and NHDES have repeatedly explained, algae include macroalgae and phytoplankton and only the latter is measured by chlorophyll-a. Therefore a statement that there is no clear trend in chlorophyll-a does not lead to the simplistic conclusion that algal growth has not changed. To the contrary, macroalgae has increased over that time period. The Burack letter, from which the above quotation was drawn, specifically makes this distinction. See Opp. Ex. 32 at attachment 1-4; Opp. Ex. 1 (RTC) at 84-85; Opp. Ex. 18 (PREP 2006

Moreover, the Coalition’s continued fixation on narrow timeframes or datasets throughout its Reply to draw its conclusions simply does not confront EPA’s explanation that it utilized central trends from long-term data sets in this permitting action. Opp. Ex. 1 (RTC) at 15 (“Because the NHDES approach is based on the central tendencies of the long-term data set, it is to be expected, based on normal variability, that there would be subsets of the data that do not show the same relationships seen in the long term data.”)

⁶ It is, in addition, based on a hypothetical scenario—EPA has addressed the use of this misleading tactic in Opposition Appendix B at 8-9. The Coalition routinely blurs the distinction between hypothetical factual scenarios and actual facts pertaining to the Estuary, and then takes the deponent’s answer to a hypothetical factual scenario and cites to it *as if* the answer confirms the specific scientific proposition asserted by the Coalition. In this case, Currier did not “observe” what the Coalition alleges.

EPA has also made note in Appendix B of the Coalition’s tendency to cherry pick quotations from the record and to ignore record evidence that countervails its position. Deposition testimony from Phil Trowbridge on the relationship between chlorophyll-a and nitrogen trends is an example of this. See Attachment A to Appendix B at p. 1.

State of the Estuaries Report) at 20; Appendix A at 10, 30. Moreover, trend analysis of chlorophyll-a (the indicator of phytoplankton algae) is more complicated than indicated by the Coalition and is discussed at length in the Response to Comments. Opp. Ex. 1 at 102. Although analysis of data through 2011 did not demonstrate a statistically significant trend, data through 2008 indicated an increasing trend (*i.e.*, the statement that “there was never an indication that algal growth increased” is clearly false). *Id.* In addition, algal growth includes macroalgae, populations of which were documented in 1996 and 2007 and showed a dramatic increase during that period. *Id.*; Opp. Ex. 50 (PREP 2009 Data Report) (containing chlorophyll-a trends); Appendix A at Page 30.

Third, NHDES’s limited factual statement cited by the Coalition applies only to Great Bay proper and not to “the system” as a whole, as the Coalition misleadingly states. EPA has explained the relationship between nitrogen and chlorophyll-a in the tidal rivers; there are no long term trend data available for those areas.⁷ Opp. Appendix A at 15; Opp. Ex. 43 (NHDES 2009 Great Bay Nutrient Report) at 35. EPA has consistently explained that impacts on water column transparency are linked to the overall amount of organic matter in the system, which depends on macroalgae as well as phytoplankton and has been related to total nitrogen concentrations. Opp. Ex. 1 (RTC) at 84-85; Opp. App. A at 10; Opp. Ex. 32 (Burack letter) attachment at 1-4. Notwithstanding EPA’s explanations, the Coalition persists without scientific foundation in characterizing transparency impacts

⁷ Monitoring shows that the Lamprey River has the highest measured chlorophyll-a concentrations in the Estuary and is listed on the 2010 303(d) list for chlorophyll-a based on primary contact recreation impacts. Opp. Ex. 26. Based on the State’s Consolidated Assessment Listing Methodology, this means that the threshold value of 20 ug/l was exceeded, which indicates excessive algal growth in this receiving water irrespective of whether chlorophyll-a has increased recently or not.

as solely due to phytoplankton, which at once mischaracterizes the scientific evidence in the record and fails to grapple with the substance of EPA's responses to comments.

Also unfounded is the Coalition's contention that EPA had "no basis" for the position that nutrients contributed to changing algal/transparency levels over time and that EPA's position in this regard was contradicted by the PREP reports, DES under oath, and the 2012 Burack letter. Reply at 4, n. 8. To the contrary, EPA's technical conclusion that nitrogen discharges have caused, have the reasonable potential or cause, or have contributed to the observed water quality impairments was based on extensive scientific literature concerning nitrogen related impact to eelgrass communities and estuarine environments; monitoring data from the Lamprey River and the Great Bay Estuary; site specific studies performed by the NHDES in the 2009 Great Bay Nutrient Report; site specific data and trend analysis developed by PREP; recommended DIN thresholds in EPA guidance, nitrogen thresholds developed in other states (MA and DE), and CWA § 303(d) listing materials. *See* Opp. Ex. 2 (Fact Sheet) at 12-27; Opp. Ex. 1 (RTC) at 83-94. The basis for EPA's conclusion regarding the relationship between nitrogen concentrations and algal growth is set forth in detail in the Response to Comments. *See, e.g.,* Opp. Ex. 1 at 85. While the Coalition may disagree with EPA's finding based on its alternative scientific theories, this amounts only to a difference in technical judgment and not a demonstration of clear error. *See* Opp. Appendix A at 7, 12.

The Coalition in its Reply makes a multitude of other allegations of technical and scientific error, all of which are unpersuasive and may be swiftly disposed of by reference to the permit record. The Coalition in Section II.2 sets forth six discrete technical assertions that it claims constitute a basis for review. The first is addressed at

Opp. Ex. 2 (Fact Sheet) at 12 - 27; Opp. Ex. 1 (RTC) at 15-16, 73, 108, 83-94, 88-102; Opp. Ex. 18 (2006 State of Estuaries Report) Appendix at 7, 30, 31. The second is dispensed with at Opp. Ex. 1 (RTC) 84-85; Opp. Appendix A at 10; Opp. Ex. 32 (Burack letter) at 1-4. The third is disposed of at Opp. Ex. 1 (RTC) at 91-93, Opp. Ex. 32 (Burack letter) at 5-6; Appendix A at 12-14. The fourth is rendered at Opp. Ex. 2 (Fact Sheet) at 12-27; Opp. Ex. 1 (RTC) at 83-94; Opp. Appendix A at 17-19; Opp. Ex. 32 (Burack letter) at 7; PREP Draft Data Report (July 16, 2012). The fifth is addressed at Opp. Ex. 1 (RTC) 94-96, 102-105; Opp. Appendix A at 49. And the sixth at Opp. Ex. 1 (RTC) at 65-67; Opp. Appendix at 38-39.

The issues outlined in Section II.3, which concern the peer review, are fully addressed in the Opposition at 73-77, and Appendix A at 43-45.⁸

Similarly, the Coalition's Socratic exercise in Section II.4, which goes to the issue of whether nitrogen has been established as the "cause" of water quality impairments in the receiving waters, has been adequately addressed in the record below.⁹

⁸ Section II.3 also raises issues concerning the conceptual model and the assertion that EPA requested DES to amend the 2008 impairment list to declare Great Bay nutrient impaired to avoid litigation with CLF. These issues are addressed at RTC at 84-85 and Appendix A at 9-10.

⁹ Section II.4.a is addressed, *e.g.*, at PREP 2006 State of the Estuaries Report at 20 (Opp. Ex. 18); RTC at 84-85, 102, 105, 111 (Opp. Ex. 1); Burack letter, attachment at 1-4, 8 (Opp. Ex. 32); Trowbridge deposition at 381-84 and 436 (Petitioner Exhibit 12); Opp. Appendix A at 7, 8, 10 and 30.

Section II.4.b is addressed, *e.g.*, at Opp. Ex. 1 (RTC) at 15-16, 73, 83, 88, 102 (noting that eelgrass decline began in 1996), 105 (discussion of reliance on long term trends); Opp. Ex. 18 (2006 State of the Estuaries) (eelgrass decline evident based on data through 2004); Opp. Appendix A at 7-9, 30; Trowbridge Deposition at 63-64.

Section II.4.c is addressed, *e.g.*, at Opp. Ex. 1 (RTC) at 41-45, 61-65, 74-78, 83-85, 111-114; Opp. Ex. 32 (Burack letter) attachment at 1-4; Opp. Ex. 43 (NHDES 2009 Great Bay Nutrient Report) at 56; Opp. Ex. 46 (Morrison 2008) at 48-49; Opp. Ex. 52 (US EPA SAB Stressor-Response Review) Cover Letter; Opp. Appendix A at 10, 19, 20, 43.

Section II.4.d is addressed, *e.g.*, at Opp. Ex. 1 (RTC) at 41-45, 61-65, 74-78, 94-96, 102-105, 111-114; Opp. Appendix A at 43-45, 48-50.

The Coalition in Section II.5 claims that the peer review failed to address its primary objection “that the 2009 stressor-response assessment developed by DES was facially deficient because it failed to assess the other confounding and co-varying factors that could explain, independent of nutrients, why DO and transparency varied as it did,” and claimed that DES admitted under oath that no such “confounding factors” analysis had ever occurred. Reply at 17-19. This is untrue. EPA is fully aware that Mr. Trowbridge stated that the 2009 Nutrient Report did not contain analysis of (1) “sediment oxygen demand, river flow, or low DO coming in from swamp areas” in the DO analysis (AR D.4.i.4 at 438); (2) CDOM and turbidity “specifically in the tidal rivers” (*id.* at 439); or (3) “how the change in rainfall patterns could have influenced the eelgrass losses or the transparency.” *Id.* This, however, does not equate to a statement that “no confounding factors analysis had ever occurred.” The 2009 Nutrient Report did contain an analysis of the confounding factors of CDOM and turbidity within Great Bay proper, along with discussions of impacts of flushing time and stratification. In addition, NHDES conducted further analysis subsequent to the 2009 Nutrient Report, classifying data by salinity zone to assess potential differences between Great Bay proper and the tidal river areas and evaluating the potential influence of extreme rainfall events. *See* NHDES 2009 Great Bay Nutrient Report at 61-66 (Opp. Ex. 43); NHDES, Response to Public Comment on the Draft 2012 Consolidated Assessment and Listing Methodology (CALM) (Opp. Ex. 37); Opp. Appendix A at Page 10; 13-14, 17, 48. EPA’s Response to Comments includes specific discussion of dilution (pages 6, 85, 98 and 112); turbidity’s

Section II.4.e is addressed, *e.g.*, at Opp. Ex. 2 (Fact Sheet) at 17; Opp. Ex. 1 (RTC) at 45; Opp. Appendix A at 12, 13, 15-16, 29.

impact on ambient transparency (pages 45, 85, 90-92, 103, 114 and 115); the impact of turbulent mixing (page 114); color (pages 113 and 115); and stratification (page 94-95). The Coalition's opinion that these analyses are insufficient or should have included additional confounding factors does not amount to a "complete absence" of such analyses in the administrative record and does not excuse the Coalition's failure to engage EPA's actual responses on this issue. EPA is fully aware of and responded in detail to the Petitioner's concern regarding confounding factors and cause and effect, responses that the Petitioner has ignored in favor of mischaracterizing the record and repeating earlier fallacious claims. (EPA notes that the issue of the strength of the stressor-response relationship and levels of uncertainty were not the subject of previous comments or mentioned in the Petition and are waived; however, EPA views the 2009 Great Bay Nutrient Report's treatment of these issues to be sound). Opp. Ex. 1 (RTC) at 6, 45, 85, 90-92, 94-95, 98, 103, 112-115; Opp. Ex. 43 (NHDES 2009 Great Bay Nutrient Report) at 61-66; Opp. Ex. 37 (NHDES, Response to Public Comment on the Draft 2012 Consolidated Assessment and Listing Methodology (CALM)) at 8-16; Opp. Appendix A at Page 10; 13-14, 17, 48.

III. CONCLUSION

For all the reasons stated in EPA's Opposition and herein, this Petition should be denied.

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I hereby certify that a copy of the foregoing Sur-Reply, in connection with NPDES Appeal No. 12-05, was sent to the following persons in the manner indicated:

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