

Att. 79 - Factual and Legal Arguments Never Addressed By EPA
Region 1 in Response to Petition for Review

FACTUAL

- The Region also improperly failed to provide the Petitioner with fair notice and the opportunity to comment on basic analyses and information that should have been addressed in the Fact Sheet but appeared for the first time in EPA’s response. **Brief at 1.**
- EPA’s letters acknowledged and endorsed that, in order for an exceedance of the narrative criteria to exist, a demonstration that nutrients are (1) causing excessive plant growth that is, (2) adversely impacting the ecology of the system, must be made. **Brief at 4.**
- EPA’s approval noted that “[i]n developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality related data and information” (See Att. 5, 2012 303(d) Approval, at 3) and that MassDEP updated its analysis to “reflect new data and/or other relevant information ... to address any identified listing errors made during previous listing cycles.” **Brief at 5.**
- MHB is greatly influenced by pollutant conditions in Narragansett Bay, as 80-90% of tidal flows come from Narragansett Bay. *See* Att.11, Kincaid, 2006 at 120. **Brief at 7.**
- TE has the highest nitrogen levels but the lowest algal levels in the MHB system. *See* Att. 12, Krahforst & Carullo, 2006 at 404. **Brief at 7.**
- Stratification in MHB causes low DO conditions in MHB that affect water quality in TE. *See* Att. 13, Zhao, Chen & Cowles, 2006 at 2, 12. **Brief at 7.**
- Nutrient and algal levels have declined in MHB and the TE since the School for Marine Science and Technology (“SMAST”) 2004-6 sampling assessment due to wastewater plant and CSO improvements that have significantly lowered nutrient and organic loadings. *See* Att. 15, EPA Response at 25-26, 63-64, 104-106; Att. 16, PowerPoint slides from USEPA May 7, 2015 FOIA. **Brief at 7.**
- Sakonnett River creates unusual hydrodynamics in the area of MHB16 causing this area to differ in water quality from the rest of the system. *See* Att. 11, Kincaid, 2006 at 128, 137-139. **Brief at 7.**

- It is undisputed that EPA’s Fact Sheet failed to evaluate the findings of these relevant studies, and others, in evaluating the need for stringent TN limitations. **Brief at 8.**
- EPA’s position was based on the same data that MassDEP evaluated in determining, repeatedly, that nutrient violations were not occurring in TE, under higher nutrient loading conditions to the system. **Brief at 8.**
- EPA claimed that the nitrogen concentration at a “sentinel location” eleven (11) miles away, across MHB, in the Sakonnett River (MHB16) defined the TN concentration necessary to meet DO objectives in TE. **Brief at 8.**
- EPA’s Fact Sheet did not evaluate any of the available hydrodynamic studies, load reductions, or documented water quality improvements occurring in MHB/TE since 2006 in rendering the decision. **Brief at 8.**
- Similarly, the Fact Sheet contained no assessment of the well-known physical factors affecting DO in estuarine environments or any evaluation of how nutrients affect algal growth or DO anywhere in the TE system. **Brief at 8.**
- The City repeatedly sought meetings with the Region and EPA Headquarters to discuss these issues, only to be rebuffed at each request. See Att. 27-29, Meeting requests and EPA replies. **Brief at 9.**
- EPA provided no documentation to support (1) the City’s technical objections were misplaced, (2) the sentinel method was scientifically defensible, (3) new analyses and data from the TE confirmed EPA’s approach was proper, and (4) the closure of Brayton Point, and all of the other system improvements occurring since 2006, resulted in no material change in water quality. *See* Att. 28.7. **Brief at 9.**
- Both of these reports [from Dr. Steven Chapra and Dr. Swanson] noted gross deficiencies in EPA’s technical assessments (e.g., that MHB16 predicted TN effects in the TE, unsupported assumptions regarding TN in TE, failure to account for Brayton Point thermal improvements on DO regime). **Brief at 10.**
- EPA HQ agreed that the sentinel method, as applied by EPA Region I, had never undergone peer review and there was no information showing that the Region’s approach to permit limit derivation under 40 C.F.R. § 122. 44(d) was scientifically defensible. **Brief at 10.**

- EPA later clarified that the new information was contained in the Brockton fact sheet. *See* Att. 55, Email S. Bukhari to J. Hall. However, no new significant information or analyses were presented in Brockton’s Fact Sheet and none of the City’s major objections were addressed in that document. **Brief at 10.**
- The City submitted FOIA requests to obtain the new assessments and data, Region refused to grant Taunton access to that information. **Brief at 10.**
- Ultimately, upon issuance of the final permit, EPA’s response to comments failed to address every supplemental document filed, including the multiple expert reports, EPA’s own conclusions regarding the significant effect of Brayton Point thermal loads, and available hydrodynamic studies. **Brief at 11.**
- Rather, the final Permit contained numerous new analyses and factual/scientific claims that had not been previously produced to the public (*infra*, at 25-27), now claiming that (1) none of the 2004/6 SMAST data were sufficient to document how nutrients impacted algal growth or DO, and (2) EPA is not required to demonstrate a TN impact on plant growth when implementing the state’s narrative standard under 40 C.F.R. § 122.44(d). **Brief at 11.**
- According to EPA, the TN limit in the Permit was imposed to correct an *existing* nutrient impairment in TE because, in EPA’s opinion, the TE was currently exceeding its assimilative capacity for TN. *See* Att. 1, Permit Fact Sheet, at 19, 30. **Brief at 13-14.**
- ... MassDEP has repeatedly determined, and EPA has repeatedly approved that nutrients are *not* impairing TE. *See* Atts. 18-20, 2008-2012 Mass. Integrated Lists; *see also* Atts. 3-5, 303(d) Approvals 2008-2012. **Brief at 14.**
- EPA nowhere seeks to explain precisely what MassDEP failed to properly assess or what new information has been brought to bear such that the prior, approved state analyses were misplaced. **Brief at 14.**
- These EPA-approved decisions were all based on the MassDEP CALM document, which expressly describes how to evaluate narrative criteria compliance in Massachusetts waters. *See* Att. 2, CALM; *supra*, at 4-6. **Brief at 14.**
- As noted by EPA, if TE was not currently nutrient impaired, existing loads would be acceptable and only a cap on future load increases would occur. *See* Att. 15, Response, at 81. However, EPA has declared that the system presently exceeds its assimilative

capacity and major reductions are required (*i.e.*, there is an existing nutrient impairment).
Brief at 14, FN 8.

- As referenced above, MassDEP has repeatedly determined that – unlike other waterbodies in the region – TE is not impaired for nutrients. **Brief at 15.**
- As raised in the comment period (*See* Att. 14, Comments, at 1(40)), the TN limitation imposed on Taunton was based on the evaluation of data that were collected in 2004/05 and no consideration of subsequent improvement in effluent quality throughout the system. *See* Att. 1, Permit Fact Sheet, at 26, 30. **Brief at 17.**
- First, since the 2004/05 MEP study, there have been several more recent water quality monitoring and hydrodynamic and hydrothermal modeling efforts for TE and the surrounding waterbodies. *See* Att. 67, List of Available Water Quality Studies. EPA was certainly aware of all such studies, but failed to consider them in the Fact Sheet because, according to EPA, the more recent studies were not as “comprehensive.” *See* Att. 15, Response, at 58, 112. **Brief at 17.**
- EPA claims that it included consideration of post 2004/5 MHB data, referencing 2010 MHB data. Att. 1, Fact Sheet, at 25. However, this assertion is, at best, a red herring. As previously noted, the TN limit in Taunton’s permit was derived based on purported impacts in the TE, not MHB. **Brief at 17, FN 13.**
- EPA did not use the 2006 MEP data because it was an extreme wet year. *See* Att. 15, Response at 15, 81. **Brief at 17, FN 14.**
- TE is more sensitive to oxygen demand loadings than MHB. *Id.*, at 92. **Brief at 18.**
- Based on prior studies, it is apparent that TN levels in the TE are not even controlling algal growth, as TE has the highest TN levels but the lowest algal growth in the system. **Brief at 20, FN 16.**
- EPA picked the algal levels from a draft report that MassDEP has never used to define nutrient impairment. *See* Att. 1, Fact Sheet at 22. Because the TE exceeded this criterion, EPA declared it nutrient impaired. **Brief at 20, FN 17.**
- EPA did not even present an analysis showing that nutrient and algal levels in TE are materially affecting the DO regime, versus other parameters known to influence DO. **Brief at 22.**

- EPA leaps past this prerequisite, and simply makes the claim that, based on dissolved oxygen conditions at a “sentinel station” in MHB (MHB16) 11 miles away, TE needs the same ambient TN concentration. **Brief at 22, FN 19.**
- The absence of any DO-TN analysis is critical because it is universally understood that dissolved oxygen concentrations, and daily fluctuations thereto, are influenced by a wide array of physical, chemical, and biological parameters. *See* Att. 15, Response at 82-83, 101-102; Att. 38; Att. 62. **Brief at 23.**
- EPA fully concedes the complex relationship between nutrients and dissolved oxygen in estuarine systems and the fact that other factors often control the DO regime. EPA determined that there was an absolute need for a stringent TN limit without analyzing any of the other major factors influencing DO. **Brief at 23.**
- EPA’s claim that it possesses a “model” that predicts DO effects from the loading reductions and ecological changes small is utterly false. *See* Att. 15, Response at 4, 101. The TN loading analysis – to which EPA refers as its “model” – is certainly not a water quality model and makes no attempt to demonstrate how either (1) TN affects algal levels or (2) those algal levels affect the DO regime. Thus, it is impossible for the loading analysis to “verify” that stringent TN reductions are still required. **Brief at 23, FN 20.**
- No decision of this Board or any Circuit Court has ever stated that EPA could impose new water quality-based requirements without a reasonable causation demonstration using site-specific information. **Brief at 24.**
- EPA also made new (conclusory) claims that (1) nutrient reductions occurring in Narragansett Bay do not affect MHB, and (2) it had conducted a MEP style analysis and (3) that the available SMAST data were not sufficient for any type of “stressor-response” relationships between TN, DO and algal levels in MHB or the TE. **Brief at 25.**
- Chl-a decreased and DO increased at Narragansett Bay station closest to MHB since 2006, confirming system improvements since 2005 had the beneficial effects identified by Taunton (*See* Att. 16, at 9, 13). **Brief at 26.**
- DO exceedances were far more prevalent in wet weather years, confirming the significance of CSO reduction ignored by EPA (*See* Att. 16, at 7, 8). **Brief at 26.**
- Data were sufficient to perform a “stressor-response” analysis and that analysis demonstrated that, when seasonal Chl-a is less than 10 ug/L (as is the case in TE), DO is

expected to be above 5 mg/L. Thus, attaining a 3-5 ug/l chl objective is unnecessary. *See* Att. 16, at 10. **Brief at 26.**

- EPA's public release of highly relevant documentation did not conclude with the issuance of Taunton's permit. **Brief at 26.**
- The MEP procedures require, at a minimum, consideration of system hydrodynamics to choose a proper sentinel location. *See* Att. 15, Response at 5. **Brief at 29, FN 23.**
- First, the site does not appear to have any obvious relevance for predicting nutrient effects in the Taunton Estuary as it is far removed from that location and is subject to far different stressors and physical constraints. Second, MHB16 was confirmed by other researchers to exhibit very different hydrodynamic characteristics from the rest of the system, including Mount Hope Bay itself (*See* attached figures (Kincaid, 2006); *see*, also hydrodynamic analyses (Zhao, Chen & Cowles, 2006; Chen, Zhao, Cowles & Rothschild, 2008)). Consequently, the nutrient response at this site would not be representative of the expected response elsewhere in the system. **Brief at 31.**
- ... EPA's record nowhere contains objective evidence that MHB16 is an appropriate sentinel site under the MEP Process to predict the DO response in the TE... **Brief at 31.**
- EPA claimed that algal levels at the protective sentinel site were "lower than in TE in a normal year" (i.e., 2004-5) to refute the City's observation that TE levels were lower and, therefore, acceptable. *See* Att. 15, Resp. at 48. However, data in Table 5 of the Fact Sheet (Att. 1) unquestionably confirm that growing season algal levels are lower in the Upper Taunton River (MHB stations 18, 19, 21) (the area that EPA addressed in its loading analysis and effluent limit derivation). **Brief at 32.**
- As the purpose of TN control is to remove excessive plant growth and the Upper TE has lower algal growth than the sentinel site (and less than 10 ug/l), it was plainly erroneous for EPA to conclude that algal levels were excessive in TE and impairing DO. **Brief at 32-33.**
- EPA's assertion, if correct, means that no one can rely on any of the SMAST data for nutrient impact analyses on the DO regime. *See* Att. 2, CALM at 6. Finally, EPA's confirmation that TE and MHB respond very differently to inputs (*See* Att. 15, Response at 92-94; Figures R6 and R7) confirms that it was inappropriate to use MHB16 (the MHB station second farthest away from TE) as the location that predicts TN/DO effects

for TE without accounting for the conditions that cause the different effects to occur.

Brief at 35.

- EPA issued a conclusory statement (with no supporting documentation) that the Brayton Point effect was negligible. **Brief at 36.**
- EPA’s selection of a sentinel site as establishing the “necessary” level of TN control (See Att. 1, Fact Sheet at 30) is based on the presumption that the TN “stressor” at that site predicts the minimum DO “response” for the system. **Brief at 37.**
- EPA’s Fact Sheet contained no justification for the year-long condition, contrary to the requirement that only “necessary” limitations be imposed. **Brief at 38.**

LEGAL

- All water quality-based limitations are based on a causation analysis - the pollutant reduction “necessary” to achieve applicable “water quality standards.” CWA § 301(b)(1)(C); 40 C.F.R. § 130.7(b)(4). **Brief at 2.**
- Rather, the pollutant of concern – in this case total nitrogen (“TN”)– must cause or threaten to cause or contribute to a specific adverse ecological effect (e.g, excessive plant growth causing low DO) – to be in violation of the criteria. **Brief at 3.**
- Moreover, the state is required to use procedures/simplified models that consider dilution and known wastewater loadings to project whether a criteria exceedance may exist. **Brief at 3. [Referring to Section 303(d) evaluations]**
- Before approving a state’s section 303(d) list, EPA ensures that the state has satisfied the detailed evaluation requirements of 40 C.F.R. § 130.7. **Brief at 4.**
- Waters that are not impaired, or are not projected to be impaired based on dilution models and loading assessments, do not receive WLAs. **Brief at 4.**
- MassDEP has published a guidance document that informs EPA and the public how compliance with the narrative standard for nutrients is to be evaluated. See Att. 2, 2012 CALM at 1-2. These procedures were reviewed and accepted by EPA as sufficient to protect uses when evaluating the submitted Section 303(d) lists. **Brief at 4.**

- EPA is required to utilize the state’s published methods, where available, in implementing narrative criteria. **Brief at 5.**
- *In re Ina Road Water Pollution Control Facility*, 2 E.A.D. 99 (CJO 1985) (Region should ordinarily defer to State’s interpretation of its own water quality standard regulations unless that interpretation is clearly erroneous). **Brief at 6.**
- Thus, it is not enough for EPA to claim a particular demonstration was made; such averments must be supported by evidence and the public must have had an opportunity to challenge that evidence and those findings. *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 665 n.8 (EAB 2001). **Brief at 12.**
- The analysis must be based on the state’s published narrative criteria guidance, if available, and seek to match the state’s approach as closely as possible. 40 C.F.R. § 122.44(d). **Brief at 13.**
- The analysis must be based on current data and pollution control measures, supplemented by relevant studies of the waters in question. **Brief at 13.**
- 40 C.F.R. § 122.44(d) contemplates that permitting decisions will be consistent with Section 303(d) decisions. **Brief at 15.**
- In the other recent EAB challenges to nutrient limits in NPDES permits, the limits had always been imposed on dischargers to waterbodies that were identified as nutrient impaired on the 303(d) list. *See In re Town of Newmarket Wastewater Treatment Plant*, 16 E.A.D. ___, 22-23 (EAB 2013); *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 594-601 (EAB 2010); *In re City of Attleboro, MA Dep’t of Wastewater*, 14 E.A.D. 398, 448 (EAB 2009). **Brief at 15, FN 9.**
- *See* 40 C.F.R. § 130.12(a) (requiring consistency between the approved state Water Quality Management Plan under Section 303 and Section 402 permitting actions). **Brief at 16.**
- EPA must base its regulatory decisions on the latest and most current scientific information. *See Sierra Club v. United States EPA*, 671 F.3d 955, 968 (9th Cir. 2012). **Brief at 16.**
- EPA’s imposition of the TN limit simply failed to assess the effects of its prior regulatory mandates (e.g., CSO reduction measures, Brayton Point cooling tower, TN reductions to

TE, MHB and RI waters) despite the fact that such measures have materially lowered algal levels and improved DO in the system. **Brief at 19.**

- EPA’s claim is conclusory because it is based on generic information on the possible effects of nutrients on estuarine systems, not an analysis of the actual data for TE showing that TN and algal growth are actually causing or materially contributing to the alleged DO violation. **Brief at 20, FN 16.**
- It is undisputed that ... the state’s narrative criteria specifically state the need to address causation and not presume that nutrients were causing a given condition (periodic low DO). **Brief at 21.**
- EPA’s “strawmen” responses, which cite cases confirming that causation need not be demonstrated “conclusively” (See Att. 15, Response at 46-49), have no relevance to the situation where EPA presents no site-specific causation analysis whatsoever. **Brief at 21, FN 18.**
- [The] Board’s *Upper Blackstone* decision does not support a “no site-specific causation” regulatory interpretation; it simply stated that a *conclusive* causal demonstration is not required. **Brief at 24.**
- EPA may not publish a plainly deficient Fact Sheet, issue broad conclusory scientific statements, and then, in the final hour, create and rely on new technical assessments in response to public comments pointing out that the dozens of relevant studies had been ignored (including EPA’s prior findings on Brayton Point impacts). Neither Taunton nor the rest of the public has had an opportunity to review or comment on such information and, therefore, the City’s due process rights have been abrogated. As EPA’s final permit action plainly relies on new, substantive positions to justify the TN requirements, EPA must re-publish this permit and give the public an opportunity to comment on all of the new information and analyses recently produced by EPA. **Brief at 27.**
- Given the post hoc rationalizations of EPA and the shifting target they created, this Court should direct EPA to evaluate and fully respond to the “late-filed” information. *Connecticut Light & Power Co. v. Nuclear Regulatory Com.*, 673 F.2d 525, 530 (D.C. Cir. 1982). **Brief at 29.**

- This EPA response is plainly deficient as EPA presents no information, whatsoever, to confirm it followed the MEP process. *See Defenders of Wildlife v. Babbitt*, 958 F. Supp. 670, 685 (D.D.C. 1997). **Brief at 30.**
- EPA's MEP and Reference waters approach consistency claims are purely conclusory, with no information or analyses identified in support of this claim. **Brief at 34.**
- EPA's statement that the SMAST data are insufficient to conduct stressor response is an irrational and unsupported conclusory statement. **Brief at 35.**
- EPA was also required to account for the effect of any projected reductions by RIDEM (e.g., NBC load reduction affecting MHB)... **Brief at 36.**
- EPA's Response created a rationale, for the first time, implying that there was a need to operate the facilities year round due to concerns over nutrient cycling in the estuary. *See* Att. 15, Resp. at 10-13. First, this is an entirely new rationale that the public must be allowed to address. Second, EPA's response is simply conclusory and has no demonstrated basis in the record. **Brief at 38.**