



For a thriving New England

CLF Massachusetts 62 Summer Street
Boston, MA 02110
P: 617.350.0990
F: 617.350.4030
www.clf.org

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Michele Cobban Barden
Environmental Scientist
EPA Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Re: EPA's 2023 Draft Permit for the Massachusetts Water Resources Authority Deer Island Treatment Plant Outfall and CSOs, NPDES Permit No. MA0103284.

Dear Ms. Barden,

Thank you for the opportunity to comment on the EPA's 2023 Draft Permit ("Draft Permit") for the Massachusetts Water Resources Authority ("MWRA") Deer Island Treatment Plant Outfall and Combined Sewer Overflows ("CSO"). Conservation Law Foundation, Inc. ("CLF"), on behalf of its members, protects New England's environment for the benefit of all people. CLF's advocates use law, policy, economics, and science to design and implement strategies that conserve natural resources, protect public health, and promote vital communities in our region.

CLF recognizes and commends EPA's efforts during this permit renewal process. Since the expired permit is over twenty years old, updated requirements are vital to ensure a cleaner Boston Harbor and Massachusetts Bay for all. CLF writes to address three principal concerns: (1) the need for increased effluent limitations and monitoring for nutrients contributing to dangerous algal blooms and hypoxic events, (2) the need for a Per and Polyfluoroalkyl Substances ("PFAS") response that extends beyond monitoring, and (3) making Deer Island climate ready. CLF respectfully submits the following comments on the Draft Permit.

I. Effluent Limits and Monitoring

CLF encourages EPA to require effluent limits for nutrients and extended monitoring for toxic pollutants. Effluent limitations play a key role in the regulatory scheme that keeps Massachusetts waters clean. Massachusetts Water Quality Standards require that all "existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."¹ For Massachusetts Bay, Deer Island's receiving water, this means protecting the Bay and its status as a Class SA water.² Class SA waters are designated as an "excellent habitat for fish, other aquatic life and wildlife."³ Additionally, Class SA waters must have "excellent aesthetic value."⁴

¹ 314 MASS. CODE REGS. 4.04 (2021).

² Draft Permit Fact Sheet at 4.1.1.

³ *Id.*

⁴ *Id.*

Effluent limits and permit compliance ensure a waterbody's class and use is maintained. Controlling the discharge of nutrients and toxic pollutants prevents harms to the water, like algal blooms and hypoxic events. These and other harms may prevent Massachusetts Bay from remaining an "excellent" habitat for aquatic life, ruin the aesthetic value of the Bay, and ultimately violate the water quality standard. More regular monitoring keeps MWRA and EPA accountable to the public with recorded values of toxics and allows communities to monitor important water quality information. EPA should establish effluent limits for Total Nitrogen, Ammonia Nitrogen and Dissolved Oxygen. Additionally, MWRA should extend its existing Nuisance Algae monitoring program.

A. *Nutrient Pollution*

In a local environment overwhelmed by nutrient pollution, there is a concerning absence of numeric effluent limitations for nutrients and indicators of nutrient pollution. Nitrogen is one of the two leading nutrients that cause nutrient pollution. Excessive amounts pose environmental and health concerns; nitrogen caused algal blooms depleting oxygen levels in water, increasing toxin and bacterial growth, leading to the potential human consumption of tainted fish and water.⁵

MWRA is only required to monitor and report Ammonia Nitrogen, Total Nitrogen, and Dissolved Oxygen values.⁶ The lack of numeric limits and sufficient monitoring exists despite EPA's acknowledgement of the impacts nutrient pollution can have on Massachusetts' waters. In EPA's own words, "nutrient overenrichment is a common thread that ties together a diverse suite of coastal problems such as harmful algal blooms, fish kills, some marine mammal deaths, outbreaks of shellfish poisonings, loss of seagrass and bottom shellfish habitats, coral reef destruction, and hypoxia and anoxia."⁷

Given these impacts, CLF recommends EPA include in MWRA's permit numeric effluent limits for Total Nitrogen, Ammonia, and Dissolved Oxygen.

1. *EPA Should Include Numeric Effluent Limits for Total Nitrogen, Ammonia, and Dissolved Oxygen.*

While monitoring efforts are extremely helpful, numeric effluent limits for Total Nitrogen, Ammonia, and Dissolved Oxygen are necessary to fully address the harm posed by nutrient pollution. EPA already noted two recent hypoxic events in southwestern Cape Cod Bay. Draft Permit Fact Sheet 5.1.10.4. These events led to "mortality of bottom fish and lobsters in traps in the area." *Id.*

Nutrient pollution will increase with time and climate change, so the likelihood of these fatal events will also increase. Harmful algal blooms typically occur during summer when the water is warmer. As the climate warms Massachusetts waters, Massachusetts Bay will become more hospitable to

⁵ *The Issue*, EPA (July 21, 2023),

<https://www.epa.gov/nutrientpollution/issue#:~:text=Excess%20nitrogen%20in%20the%20air,visibility%20and%20alter%20plant%20growth.&text=Nutrient%20pollution%20is%20one%20of,in%20the%20air%20and%20water.>

⁶ Draft Permit at I.A.1.

⁷ Draft Permit Fact Sheet at 5.1.10.1.

dangerous algal blooms. Warming is not the only concern climate change brings to Massachusetts Bay. Increases in salinity, higher carbon dioxide levels, and volatile rainfall patterns also contribute to feeding and maintaining harmful algal blooms.⁸ CLF urges EPA to be preventative in its approach to nutrient pollution.

At present, oxygen levels in effected waters support the need for numeric limits. While monitoring has shown “decreasing ammonium levels,” this decrease appears only in stations furthest from MWRA’s outfall.⁹ The fact sheet also shows the Bottom Water Dissolved Oxygen mean-concentrations and percent-saturations at both nearfield and Stellwagen are getting **closer and even surpassing** the caution and warning levels as the years progress.¹⁰ Dissolved Oxygen has decreased over the years, and in 2021, the mean concentration dropped to concerning levels.¹¹ Bottom water is becoming more oxygen-deprived, and if this trend continues, oxygen deprivation will lead to more hypoxic events and aquatic life death.¹²

Other Publicly Owned Treatment Works (“POTW”) are implementing numeric effluent limits for nutrients and nutrient indicators. For example, Bergen Point, a POTW in West Babylon, NY discharging into the Atlantic Ocean, has a maximum daily Ammonia value of 14.6mg/l from May 1–October 31.¹³ The Hinesburg Wastewater Treatment Facility in Vermont, discharging into the LaPlatte River, has planned concentration limits for Nitrogen (40mg/l daily), Nitrogen Ammonia (3.6 mg/l daily), and Oxygen Demand (60.5lbs/day).¹⁴

Considering the dangers nutrient pollution presents, the decreasing oxygen levels in affected waters, and the limits set for nearby POTWs, the Draft Permit should include numeric effluent limitations for Total Nitrogen, Ammonia Nitrogen, and Dissolved Oxygen.

2. *EPA Should Extend Monitoring Efforts for Nuisance and Harmful Algae*

Nuisance and harmful algae are both indicators and harmful results of nutrient pollution. CLF supports an extension of the Nuisance Algae monitoring program beyond its current end point described in the Draft Permit. Currently, the program requires MWRA to enact a rapid response study of nuisance algae species if one of multiple events, such as an algal bloom, or the algae value reaches a specific level,

⁸ *Climate Change and Harmful Algal Blooms*, EPA (Nov. 24, 2023), <https://www.epa.gov/nutrientpollution/climate-change-and-harmful-algal-blooms#:~:text=Climate%20change%20might%20affect%20rainfall,waterbodies%2C%20feeding%20more%20alga%20blooms>.

⁹ Draft Permit Fact Sheet at 5.1.10.3.

¹⁰ Draft Permit Fact Sheet at 5.1.10.4.

¹¹ *Id.*

¹² *Hypoxia*, NOAA, <https://oceanservice.noaa.gov/hazards/hypoxia/#:~:text=In%20ocean%20and%20freshwater%20environments,to%20the%20bottom%2C%20and%20decompose>.

¹³ N.Y. SPDES Permit No. NY0104809 – SUFFOLK CNTY. (2010).

¹⁴ U.S. EPA, NPDES Permit No. VT0101028 – HINESBURG (2023).

occurs.¹⁵ Once these programs are triggered, they end when monitoring results reach a certain value. For example, MWRA is required to measure *Alexandrium* weekly until “abundance decreases below 100 cells/L and the toxicity data are no longer above the closure level.” All three algae types have similar requirements.¹⁶

Considering the danger these algae species cause—red tide events, shellfish poisoning, and food web disruptions¹⁷—the continued and consistent monitoring of these species is crucial. CLF recommends that MWRA be required to continue sampling past the current end point. To ensure the harmful algae remain at their target low level, MWRA should sample until weekly results consistently display low values. Requiring monitoring for an additional year past the first time the target value is reached would allow EPA and MWRA to fully understand the impact of these harmful algae. Enforcing a longer monitoring program also helps preserve the reliability of the data. The low value will likely occur in the winter as algal blooms typically reach their peak in the summer months. Monitoring for a full year past the initial time the target value is reached allows a fuller picture and more accurate understanding of algae mitigation.

B. Toxic Pollutants

CLF is primarily concerned with the decision to stop monitoring mercury¹⁸ for multiple reasons. First, without monitoring there will be no way for regulators or the public to get a full picture of Massachusetts Bay water quality. Second, removing monitoring leaves the public in the dark without access to monitoring data. Finally, since many Industrial Users discharge toxic pollutants, monitoring at Deer Island provides a check on the efficacy of the pretreatment program. With these issues in mind, CLF strongly advocates for the monitoring of mercury.

The decision to remove mercury from monitoring constitutes backsliding. The CWA specifically prohibits backsliding in permits: “a permit may not be renewed, reissued, or modified ... to contain effluent limitations which are less stringent than the comparable effluent limitation in the previous permit.¹⁹” Essentially, EPA cannot issue a permit with less stringent pollutant limitations than the prior permit.²⁰ In the 1999 Permit, mercury was monitored monthly.²¹ Now, not monitoring mercury at all is an obviously less stringent pollutant limitation. CLF does not agree that the twenty years of mercury

¹⁵ Draft Permit Fact Sheet at 5.1.10.7.

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ The Draft Permit Fact Sheet reads: “[T]here is no reasonable potential to cause or contribute to an excursion of the WQS and the monitoring requirement for mercury has been removed from the Draft Permit.” Draft Permit Fact Sheet at 5.1.12.9.

¹⁹ 33 U.S.C. § 1342(o)(1).

²⁰ *Rio Hondo Land & Cattle Company, L.P. v. U.S. EPA*, 995 F.3d 1124, 1129, (10th Cir. 2021).

²¹ U.S. EPA NPDES Permit No. MA0103284 - MWRA (2000).

monitoring data is sufficient to place EPA in the exception²² to the backsliding prohibition for the reasons below.

Ending all monitoring of mercury is especially concerning as mercury poses serious risks to human health. High exposure to mercury can lead to skin rashes, muscle weakness, and mental health issues like memory loss.²³ EPA justifies the removal of any monitoring because “there is no reasonable potential to cause or contribute to an excursion of Water Quality Standards (‘WQS’)....” Draft Permit Fact Sheet 5.1.12.9. Yet the WQS for acute mercury is 2.1 µg/L, and while Appendix C shows mercury compliance from 2018 to 2022, there are multiple instances where Significant Industrial Users violated the WQS for acute mercury across those same years. For example, a 2020 mercury sample from Harvard University Cambridge Campus was more than double the WQS (4.9 µg/L). While that sample value may get diluted upon arriving to and moving through Deer Island, complete removal of the monitoring requirement is a step backwards.

First, monitoring mercury helps determine the success of the pretreatment program. Second, Appendix C has no zero-value measurement for mercury. Third, other similarly situated POTWs are well-ahead of Deer Island regarding mercury regulation. Owl Head Wastewater Resource Recovery Facility serves a population of 758,007, comparable to Boston’s 654,776.²⁴ Its SPDES permit has a numeric limitation for mercury at 50 ng/L daily.²⁵ Dover-Foxcroft POTW, Town of Bethel POTW, and Southwest Harbor Water & Sewer District POTW in Maine all have both a monthly and daily discharge limit for mercury.²⁶ Without monitoring Deer Island falls severely short of what it could and should be doing to address mercury discharges. CLF recommends the permit include at minimum a monitoring requirement for mercury to prevent backsliding.

II. PFAS Reduction and Mitigation

Generally, CLF supports the monitoring of PFAS from industrial users. Currently, the draft permit outlines quarterly PFAS monitoring at Deer Island itself, and annual PFAS monitoring for specific industries. At minimum CLF urges EPA to require MWRA to quarterly monitor the listed industries. To wholly address the growing danger PFAS pollution presents, CLF asks EPA to implement a Best Management Plan (“BMP”) with limits for PFAS.

²² One exception to the prohibition on backsliding is if there is “information available which was not available at the time of permit issuance ... and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.” 33 U.S.C. § 1342(o)(2)(B).

²³ *Health Effects of Exposure to Mercury*, EPA, (March 28, 2023), <https://www.epa.gov/mercury/health-effects-exposures-mercury>

²⁴ Wastewater Resources Recovery Facilities (WRRF), <https://www.nyc.gov/site/dep/water/wastewater-treatment-plants.page>, (last visited Nov. 24, 2023).

²⁵ N.Y. SPDES Permit No. NY0026166 - OWL’S HEAD WASTEWATER RESOURCE RECOVERY FACILITY (2022).

²⁶ Me. MEPDES Permit No. ME0100501 - TOWN OF DOVER-FOXCROFT (2020) and Me. MEPDES Permit No. 0101176 - TOWN OF BETHEL (2022).

A. *Dangers of PFAS*

The reduction and mitigation of PFAS must be a top priority for MWRA. Humans are exposed to PFAS every day²⁷ and wastewater treatment plants are well-known sources of PFAS.²⁸ For adults, this exposure can lead to decreased fertility, increased risk of prostate, kidney, and testicular cancer, diminished immune systems, and increased risk of obesity, among other impacts.²⁹ In children, exposure to PFAS can lead to developmental delays, low birth weight, behavioral changes, and accelerated puberty.³⁰ PFAS not only harm humans but wildlife as well. Because PFAS do not break down, they bioaccumulate in fish and other wildlife.³¹

B. *EPA Should Require More PFAS Requirements*

Despite the harm that PFAS present, Massachusetts underregulates PFAS. The only enforceable numeric standard for PFAS in Massachusetts is a state Maximum Contaminant Level for six PFAS present in drinking water.³² While there are narrative standards that could potentially address PFAS more expansively in state regulations, those alone are not enough to address the toxicity and harm PFAS present to Massachusetts Bay. Deer Island does not filter or treat any of the PFAS in the wastewater it receives. The draft permit and accompanying fact sheet outline a monitoring and reporting requirement for PFAS to “better understand potential discharges of PFAS from this facility and to inform future permitting decisions.”³³ This is not enough. These comments are for a permit that is **over 20** years old, and the deadline for the public comment period has already been delayed twice. There is no guarantee actual numeric standards for PFAS will come in the next permit or the one after. CLF urges EPA to require BMPs and limits for PFAS, beyond the proposed monitoring and reporting program.

There is a nationwide call for stricter PFAS regulation. In December 2022, EPA wrote a memorandum to all EPA Regional Water Division directors advocating for the use of NPDES Permits and Pretreatment Programs to address PFAS discharges. In its recommendations for Publicly Owned

²⁷ Sources of PFAS include but are not limited to: PFAS contaminated drinking water, breathing air containing PFAS, and using products containing or packaged in PFAS. *Our Current Understanding of the Human Health and Environmental Risks of PFAS*, EPA, (June 7, 2023), <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas>.

²⁸ *Wastewater Treatment Plants/ Industrial Pretreatment Program*, MICH. DEPT. OF ENV'T, GREAT LAKES, AND ENERGY, (March 2023), <https://www.michigan.gov/pfasresponse/investigations/wastewater#:~:text=Municipal%20WWTPs%20major%20sources%20of,as%20landfills%20and%20centralized%20waste>.

²⁹ *Id.*

³⁰ *Id.*

³¹ *Per- and Polyfluorinated Substances (PFAS) Fact Sheet*, CDC, (May 2, 2022), [https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html#:~:text=Many%20PFAS%2C%20including%20perfluorooctane%20sulfonic,bioaccumulate\)%20in%20fish%20and%20wildlife](https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html#:~:text=Many%20PFAS%2C%20including%20perfluorooctane%20sulfonic,bioaccumulate)%20in%20fish%20and%20wildlife).

³² The Maximum Contaminant Level is 20 ppt. *Massachusetts PFAS Drinking Water Standard*, MASS. DEPT. OF ENV'T PROTECTION, (2020), <https://www.mass.gov/lists/massachusetts-pfas-drinking-water-standard-mcl>.

³³ Draft Permit Fact Sheet at 5.1.14.

Treatment Works, EPA specifically recommends “utiliz[ing] Best Management Practices and pollution prevention to address PFAS discharges to POTWs” from Industrial Users.³⁴

EPA Region 1 has the opportunity to develop a PFAS BMP for Deer Island and become a leader in tackling this harmful and difficult pollution. While CLF supports the current proposal to monitor quarterly at Deer Island itself, the permit should include additional requirements. For example, Michigan’s Industrial Pretreatment Program PFAS Initiative required source reduction at confirmed PFAS sources.³⁵ Reduction can take many forms; for example, Industrial Users’ pollutant minimization plans, equipment/tank changes and clean outs, and product replacement.³⁶ Wisconsin has developed a more in depth PFAS response program. First, Wisconsin’s Department of Natural Resources has promulgated a surface water quality criteria limit of 95ng/L non-public-drinking-water surface waters.³⁷ Second, Wisconsin will institute PFOA/PFOS Minimization Plan for facilities with Wisconsin Pollution Discharge Elimination System surface water permits if monitoring after two years determines a need.³⁸ The plan will require the permittee to design and install treatment to address PFAS pollution.³⁹ If the plan for MWRA is to only monitor, MWRA should conduct *quarterly* monitoring of the Industrial Users listed in G4 of the permit, not annual monitoring. CLF urges that the permit include numeric limits and treatment plans to more fully address the dangers of PFAS.

III. EPA Should Not Disband the Outfall Monitoring Science Advisory Panel

The decision to disband the Outfall Monitoring Science Advisory Panel (“OMSAP”) is problematic.⁴⁰ First, the OMSAP provides important transparency and public participation related to one of the region’s largest pollution source. Second, the OMSAP has conducted significant and impactful work advising both the EPA and MassDEP on the data it collects and evaluates regarding the outfall, and on Deer Island’s impact on Boston Harbor and Massachusetts Bay. CLF disagrees with the notion that OMSAP’s work is done. As climate change continues to impact Massachusetts’ ecosystems, particularly our bays and coastlines, it is important that OMSAP continues its work. The draft permit fact sheet admits there are unanswered questions regarding eutrophication, water quality, and designated uses.⁴¹ Instead of simply “encouraging” the formation of a new regional group, it is more efficient to maintain OMSAP operations.

³⁴ U.S. EPA ADDRESSING PFAS DISCHARGES IN NPDES PERMITS AND THROUGH THE PRETREATMENT PROGRAM AND MONITORING PROGRAMS, (2022).

³⁵ *IPP PFAS Initiatives*, MICH. DEPT. OF ENV’T, GREAT LAKES, AND ENERGY, <https://www.michigan.gov/egle/about/organization/water-resources/industrial-pretreatment/pfas-initiative>.

³⁶ *Id.*

³⁷ *Water Quality PFAS Initiatives*, WIS. DEP’T OF NAT. RES., <https://dnr.wisconsin.gov/topic/PFAS/WaterQuality.html>.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ Draft Permit Fact Sheet at 5.14.

⁴¹ *Id.*

IV. EPA Must Assist in Making Boston “Climate Ready”

EPA must ensure that environmental requirements of the Deer Island facility and the Combined Sewer Overflow (“CSOs”) policy take proper consideration of the changing climate and increased precipitation events. In preparing Deer Island for major storms and flooding, MWRA must install and use green infrastructure. Regarding CSOs, EPA should consider the changing climate in the Infiltration/Inflow Reduction Plan update to better prepare MWRA, and all of Boston, for the storm and flood events to come.

A. Use Green Infrastructure to Make Deer Island Climate Resilient

MWRA must include green infrastructure (such as permeable pavement and constructed wetlands) in the mitigation measures section of their *Major Storm and Flood Events Plan*.⁴² Using natural materials and solutions that absorb storm impacts would address flooding in a more cost-effective manner. Additionally, green infrastructure has multiple positive climate impacts. First, prevents rapid degradation of water quality by reducing sediment and unwanted mineral load carried by runoff. Second, green infrastructure’s use of vegetation improves air quality. Finally, green infrastructure can reduce energy demand by shading and cooling facilities. In order to prevent climate-related disasters in our Bay, MWRA should consider and implement green infrastructure to remain resilient against impending storm and flood events.

B. Expand Infiltration/Inflow Reduction Plans

CLF supports the update of MWRA’s Infiltration/Inflow Reduction plan.⁴³ CLF encourages those updates to include climate change considerations, such as projections or modeling of how increased precipitation events and changing precipitation patterns will impact the sewer system and contribute to combined sewer overflow events. Such climate considerations allow for a more accurate reduction plan.

V. Conclusion

In order to maintain a healthy Massachusetts Bay and protect our local communities, EPA and MWRA must properly control and monitor pollutants, address PFAS, and consider climate change in permit requirements. Deer Island’s NPDES permit should be a leading example among POTW permits across New England and the nation. Thank you for the opportunity to comment.

Respectfully submitted,

CONSERVATION LAW FOUNDATION
Clare Soria

⁴² Draft Permit at E.1.a.3

⁴³ Draft Permit E.2.c.2.