

**RESPONSE TO COMMENTS
NPDES PERMIT NO. MA0000787
MASSACHUSETTS PORT AUTHORITY
LOGAN INTERNATIONAL AIRPORT
EAST BOSTON, MASSACHUSETTS**

The U.S. Environmental Protection Agency's New England Region (EPA) is issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit for Massport's Logan International Airport located in East Boston, Massachusetts. This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 *et seq.*

In accordance with the provisions of 40 Code of Federal Regulations (CFR) §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit # MA0000787 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From April 12, 2021 through July 11, 2021 EPA solicited public comments on the Draft Permit. Since July 11, 2021 was a Sunday, EPA accepted comments through Monday, July 12, 2021.

EPA received comments from:

- Luciana Burdi of Massport, dated July 12, 2021
- Richard S. Davis of Beveridge and Diamond, on behalf of certain co-Permittee airlines, dated July 12, 2021
- Staci Rubin of Conservation Law Foundation, dated July 9, 2021
- Patrick Herron of Mystic River Watershed Association, dated July 10, 2021
- John Walkey of GreenRoots, dated June 11, 2021

EPA conducted a virtual public hearing on May 24, 2021 during which the following persons presented oral comments: John Walkey and Staci Rubin. These comments and their responses are included below.

Although EPA's knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warranted a reopening of the public comment period. EPA does, however, make certain clarifications and changes in response to comments. These are explained in this document and reflected in the Final Permit. Below, EPA provides a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow. EPA maintains that the Final Permit is a "logical outgrowth" of the Draft Permit that was available for public comment.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: http://www.epa.gov/region1/npdes/permits_listing_ma.html.

A copy of the Final Permit may be also obtained by writing or calling George Papadopoulos, U.S. EPA, 5 Post Office Square, Mail Code: 06-1, Boston, MA 02109-3912; Telephone: (617) 918-1579; Email [Papadopoulos.George@epa.gov](mailto:George.Papadopoulos@epa.gov).

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I. Summary of Changes to the Final Permit

1. The pH monitoring frequency for Outfalls 01A, 02A, 03A and 04A has been changed from weekly to monthly. See Response A.2.
2. Fecal Coliform in Parts I.A.1 and I.A.2 is expressed in terms of Most Probable Number (MPN) rather than colony forming units (cfu) to be consistent with Massachusetts Surface Water Quality Standards. The maximum daily effluent

- limitation for *Enterococcus* in Parts I.A.1 and I.A.2 was revised to be consistent with recent changes to the Massachusetts Surface Water Quality Standards.
3. The reporting requirement for the listed PFAS parameters in Parts I.A.1, I.A.2, and I.A.3 has been changed to take effect the first full calendar quarter following 6 months after the effective date of the permit. See Response A.3.
 4. The sampling description for deicing discharges at Outfalls 01B and 02B at Part I.A.3 has been revised. See Response A.6.1.
 5. The monitoring frequency for nonylphenol has been reduced from three times per deicing season to once per deicing season for Outfalls 01B, 02B, 03B, 06B, 07B, and 08B. See Response A.6.3.
 6. Changes have been made to the language describing the discharge at Part I.A.6 based on Massport's comment. See Response A.6.5.
 7. Parts I.B.2.d and I.B.2.f through I.B.2.i. of the Draft Permit are duplicative of Part I.B.2.a. and have been removed from the Final Permit. In addition, Part I.B.2.c. was removed since the permit included a similar provision. See Response A.7.
 8. The Final Permit has been revised to include language to Part I.C.1.f.(2) to clarify the responsibility of Co-Permittee tenants that are not subject to the blend-to-temperature program to report to Massport other glycol reduction measures that they have implemented or considered. In addition, this Part corrected the reference to the Glycol Reduction Report from Part I.D to Part I.C.2. See Response A.8.1.
 9. Part I.C.1.f.(2) of the Final Permit has been revised to make it clear that co-Permittee tenants are primarily responsible for these glycol reduction efforts since Massport does not deice aircraft. See Response A.8.1.
 10. The suggested language at Part I.C.1.f.(4) has been added to clarify co-Permittee tenant responsibilities with respect to glycol reduction. See Response A.8.1.
 11. Part I.C.1(f)(4) of the Final Permit has been revised to specify that only those co-Permittees that are not subject to the BTT program requirements are required to consider glycol reduction measures during the permit term. See Response B.1.2.
 12. The Final Permit has been revised to combine portions of Parts I.C.1.g(1) and (6) and eliminate Part I.C.1.g.(5), which was duplicative of other parts of this Section regarding BMPs for identifying and reducing deicing and anti-icing sources. See Response A.8.2.
 13. Part I.C.2 has been revised to allow for one additional year for Massport and its co-Permittee tenants that conduct airplane deicing to fully implement the Blend-to-temperature (BTT) program for glycol reduction. See Response A.9.

14. Part I.C.2 has been revised to specify that Massport must coordinate with its Co-Permittee tenants to explain why the 30% glycol reduction target was not met in any particular year and note that Massport must describe the measures that the Co-Permittee tenants will take in subsequent years to meet the 30% target, if feasible. See Response A.9.
15. Part I.C.2 has revised one item required by the Glycol Reduction Report. See Response B.2.

II. Responses to Comments

Comments are reproduced below as received; they have not been edited.

A. Comments from Luciana Burdi, Director, Capital Programs and Environmental Affairs, Massport:

Comment A.1. Proposed Bacteria Requirements

Seasonal Distribution of Data Collected Since 2007 Suggests Non-Point Sources

Data collected by Massport since 2007 demonstrate that the primary sources of bacteria at Logan are naturally occurring and are generated from non-point sources, as evidenced by the distinctive and consistent seasonal trends in bacteria counts, year after year. Since October 2007, Massport has sampled external outfalls 001 through 004 as required by the 2007 Permit. Average fecal coliform and enterococcus concentrations measured during wet and dry weather are illustrated on **Figures 1** and **2**, provided in **Attachment 2**. As demonstrated in the figures, data are highly variable, with a distinctive repeated annual seasonal trend indicating increased concentrations during warmer weather.

Historical results have indicated that elevated levels of fecal coliform may be attributed to the non-fecal species klebsiella. Klebsiella is a member of the fecal coliform group that is not necessarily fecal in origin and has been identified in environmental samples in the apparent absence of fecal pollution. Klebsiella are often found in plant materials and pulp or paper mill effluents. These bacteria, which are false-positive indicators of fecal contamination, can grow under appropriate conditions in non-fecal niches such as water, food, and waste.

Following numerous exhaustive studies to ascertain if illicit connections exist, no such evidence was found. All data suggest that the bacteria being measured are derived from animal or decaying plant matter in non-point areas that migrate into Logan's industrial stormwater drainage systems.

Additionally, no variations in bacteria data results were observed during the COVID pandemic despite very significant reductions in aircraft operations and passenger traffic at Logan in 2020¹. Bacteria concentrations were not reduced or otherwise impacted, indicating that human waste or illicit cross-connections are not contributing sources (or at least are not contributing sources of any measurable significance) to Logan's bacteria-related discharges.

In addition, as mentioned above, Capital Programs Improvement Projects have significantly contributed to the protection of stormwater quality through substantial infrastructure improvements as an integral component of creating sustainable, high-performance resilient and resource efficient buildings. The impressive projects, some completed, others still underway, include Terminal B Optimization, Terminal B to C Roadways, Terminal C Canopy, Terminal C to B Connector, and Terminal E Modernization (further described in **Attachment 3**). The sanitary and storm sewer infrastructure improvements inevitably enhance the protection of stormwater quality and further protect Boston Harbor. The Capital Programs Improvement Projects are actions Massport takes above and beyond the mandates contained in its NPDES permit.

It is important to note that the Improvement Projects listed above lie within the West Outfall drainage basin. Despite these significant infrastructure improvements in recent years, there have been no changes in the bacteria data generated at the West Outfall. This evidence further substantiates Massport's assertion that the bacteria identified in the outfall discharge is of a non-point nature emanating from diffuse urban or background sources.

Massport has Worked Closely with EPA and MassDEP to Perform Extensive Source Identification and Illicit Discharge Detection and Elimination Assessments

Massport has thoroughly assessed the nature and source of the bacteria measured in stormwater at Logan throughout the 2007 Permit term and has found no evidence suggesting ongoing sanitary contributions on any level. Best Management Practices for lavatory waste handling have been successfully implemented as part of Logan's Stormwater Pollution Prevention Plan (SWPPP), and historically, regular SWPPP inspections have not identified any instances of improper lavatory waste management practices, nor has there been any observation of sanitary waste in catch basins, at the outfalls, or within the pollution control equipment at the North and West Outfalls².

In accordance with the 2007 Permit, a comprehensive plan was developed by Massport to identify and reduce potential sources of bacteria. Massport has submitted annual reports to EPA and MassDEP documenting investigative and sampling activities and mitigation measures implemented since 2007. A summary of these investigations is provided in **Attachments 3 and 4**. All of the aforementioned research, maintenance, and ongoing processes for identifying and eliminating sources of human bacteria demonstrate Massport's strong and continued commitment to addressing any possible cross-connections between sanitary and storm sewer systems, and they argue in favor of continued monitoring, not effluent limits, while Massport continues to partner with EPA and MassDEP to ensure adequate protections are in place.

The TMDL for Boston Harbor is not Applicable to Logan Outfalls

The Draft Permit's limits for fecal coliform and enterococcus are derived from the Boston Harbor Pathogen Total Maximum Daily Load (TMDL). The TMDL is intended to protect recreational water use and shellfishing in the ambient receiving water bodies where those activities are expected to occur. Massport acknowledges the importance of the TMDL in the waters surrounding Logan. More specifically, the TMDL focuses primarily on the types of human and pet waste sources of bacteria, such as combined sewer overflows ("CSOs"), sanitary sewer overflows ("SSO"), and other illicit connections between sanitary and storm sewers, which are pervasive in the types of very old sewer systems throughout Boston (and New England), but are not found at Logan (as demonstrated through seasonal data collection described above). However, the Draft Permit would require Massport to conduct extensive and expensive stormwater outfall discharge monitoring and force Massport to meet the water quality standards that are intended to help eliminate illicit connections from sanitary sewers, not naturally occurring non-point sources that Massport firmly asserts is the origin of the bacteria measured during its ongoing bacteria monitoring program.

Clearly, through exhaustive investigatory studies and substantial infrastructure improvements to sanitary and sewer drainage system, illicit connections have not been identified (and those that have been identified historically have been corrected). Therefore, Massport respectfully requests removal of the TMDL-based effluent limitations from the Draft Permit.

To support this request, Massport reviewed permits for other airports across the country and other NPDES permit terms near and around Boston Harbor. The Draft Permit would be precedent setting for airports nationally, disadvantaging Logan in regional and national competition. Massport also notes that EPA and MassDEP have proposed to eliminate comparable bacteria monitoring and limits where dischargers could demonstrate that diffuse urban or non-point source runoff was the primary source of bacteria being measured. Massport has already made such a demonstration through its annual reports and in these comments.

A summary of bacteria data collected from 2007 to 2021 is provided in **Figure 3 (Attachment 2)**. On average, samples of stormwater discharges at Logan would have exceeded the proposed permit limits approximately 50% of the time, despite any evidence that there is any human contribution to those (arguably non-point source) discharges. Hence, if EPA and MassDEP were to mandate the proposed bacteria effluent limitations, Massport would have to invest in significant new technologies, without any promise it could meet such water quality-based limits. Bacteria in stormwater is typically managed using a combination of source controls and passive BMPs (e.g., infiltration basins). A review of BMP performance data (Geosyntec and WWE, 2012) found difficulties in using passive treatment BMPs to reduce fecal indicator bacteria to comply with instream primary contact recreation standards (not to mention more stringent shellfish standards).

Though chemical disinfection technologies for reducing pathogen concentrations in wastewater and drinking water exist, to date, none of these technologies have been widely used to treat stormwater, and certainly not at the magnitude that would be required at Logan.

The New Bacteria Permit Limits Would Require Unprecedented Active Treatment of Stormwater for Discharge to a Receiving Water

More specifically:

- Active treatment of Massport's wet weather stormwater flows for discharge to a receiving water would be an unprecedented requirement for Massport's situation and would set a high bar for all other bacteria sources into Boston Harbor.
- Disinfection of stormwater flows at the 002 West Outfall would require disinfection tanks larger than all wastewater treatment plants in Massachusetts except for the Deer Island Wastewater Treatment Plant.
- The disinfection facility required to treat stormwater from the 001 North Outfall would be in the top ten of Massachusetts disinfection facilities.
- Implementation of a disinfection system would require years of extensive studies prior to system design, given its first-of-its-kind construction.

A detailed summary of treatment technologies and challenges related to implementation at Logan Airport are provided in **Attachment 5**.

To summarize the major points related to the Draft Permit's bacteria effluent limitations and mandates:

- All historic data point to non-point sources of bacteria at Logan through Massport's significant investigations of the sanitary and storm drain systems.
- Massport manages all sources of bacteria that are "associated with industrial activity" through its employment of best management practices and during capital improvements.
- The Boston Harbor Pathogen TMDL has not been applied appropriately to Logan's Outfalls because the bacteria at Logan are of a non-point source origin, not the type or sources of bacteria targeted by the TMDL.
- Logan is unable to meet the Draft Permit effluent limitations without active treatment of non-point source bacteria in stormwater. Stormwater treatment would be unprecedented for stormwater flows of this magnitude.

Massport therefore respectfully requests that the 2007 Permit bacteria requirements remain unchanged, including the monitoring requirement.

1. In a comparison to 2019 operations, the airport saw overall reductions of 50%, and at times up to 90% declines.
2. While Massport has historically included BMPs for lavatory waste carts in an abundance of caution, those carts do not represent a significant risk of pollutant discharges. Massport notes that EPA's Multi-Sector General Permit does not include any requirements or BMPs for lavatory carts, and Massport does not know of other airports that have any regulatory mandates other than ensuring that the carts are unloaded into the airport's sanitary sewer discharge system. Discharge to the storm sewer system would represent an illicit discharge.

Response to Comment A.1.

The comment objects to the numeric limits for fecal coliform and *Enterococcus* proposed in the Draft Permit and requests that the monitoring-only requirements for bacteria from the 2007 Permit be carried forward in the Final Permit. The commenter generally asserts that the primary sources of bacteria at Logan Airport are “naturally occurring and are generated from non-point sources,” that extensive source identification studies of source identification have not found additional illicit connections, that the Boston Harbor TMDL is not applicable to Massport’s outfalls, and that the level of treatment to remove bacteria would be “unprecedented.” As explained in the Fact Sheet (pp. 41-44) and repeated below, stormwater discharges from the Facility’s point source outfalls contribute bacteria to Boston Harbor and Winthrop Bay. The impairment of the primary and secondary recreation designated uses in the receiving waters are caused, in part, by pathogens and there is an EPA-approved TMDL to address pathogens in Boston Harbor. *See AR-1. Final Pathogen TMDL for Boston Harbor, October 2018.* EPA must ensure that the conditions and limitations of the NPDES permit will protect the water quality of the Harbor, including with respect to bacteria.

As explained in the Fact Sheet (p. 4), the goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” CWA § 101(a). To achieve this goal, the CWA provides that the discharge of any pollutant from a point source into waters of the United States shall be unlawful, except as authorized by specific sections of the CWA, one of which is § 402 (the NPDES program). *See CWA §§ 301(a), 402(a).* In 1987, Congress amended the CWA to provide a moratorium on the issuance of NPDES permits for discharges composed entirely of stormwater. CWA § 402(p)(1). The moratorium, however, contained several exceptions, including discharges with respect to which a permit had been issued before the date of enactment of the amendment (i.e., February 4, 1987). CWA § 402(p)(2)(A). An NPDES permit authorizing the discharge of stormwater was first issued to Logan Airport in 1978. *See 2007 Fact Sheet p. 3.* As such, EPA continues to require authorization for stormwater discharges from this industrial point source under CWA § 402(p)(2)(A). *See also 40 CFR § 122.26(a)(1)(i); 55 Fed. Reg. 4,157 (Feb. 12, 1988).*

A NPDES permit for this industrial point source discharge must comply with the applicable requirements of the CWA, including Sections 402 and 301 (i.e., technology-based and water quality-based requirements). CWA §§ 301(a), 402(a); *see also* Fact Sheet at 5-6. Technology-based requirements represent the minimum level of control that must be imposed under CWA §§ 301(b) and 402. *See 40 CFR §§ 122.44(a)(1), 125.3(a).* Under CWA Section 301(b)(1)(C), discharges are subject to water quality-based effluent limitations when more stringent limits are necessary to maintain or achieve federal or state water quality standards. *See also 40 CFR §§ 122.4(d), 122.44(d)(1).* In addition, where a total maximum daily load (TMDL) has been approved, NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the wasteload allocations in the TMDL. 40 CFR § 122.44(d)(1)(vii)(B). At issue here is the discharge of bacteria in stormwater runoff from an industrial point source to a waterbody that is impaired for that pollutant and for which there is an EPA-approved TMDL. Federal regulations prohibit the issuance of an NPDES permit when

conditions of the permit do not provide for compliance with the applicable requirements of the CWA or regulations promulgated under the CWA. *See* 40 CFR § 122.4(a), (d).

The comment asserts that the Draft Permit's bacteria limits are "derived" from the Boston Harbor Pathogen TMDL and that the TMDL is not applicable to Massport's outfalls. EPA respectfully disagrees with both assertions. First, as explained in the Fact Sheet (pp. 42-43), the bacteria limits are based on the water quality standards applicable to all Class SB waters. *See* 314 CMR 4.05(4) and 314 CMR 4.05(5)(f)(2). Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements that are necessary to achieve water quality standards established under CWA § 303. Regardless of whether a waterbody is listed by the state as specifically impaired for a pollutant, the permit must contain WQBELs for any pollutants or pollutant parameters that the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above WQs. *See* 40 CFR 122.44(d)(1)(i). *See also* Fact Sheet p. 9. Indicator bacteria monitoring over the past permit term demonstrates that levels of both fecal coliform and enterococcus in both wet and dry weather discharges from Outfalls 001, 002, 003, and 004 exceed water quality standards for both fecal coliform and enterococcus and, as a result, there is reasonable potential for stormwater discharges from these outfalls to cause or contribute to exceedances of the bacteria water quality standards. *See* Fact Sheet p. 42 and Appendix A.

Second, Boston Harbor, Boston Inner Harbor, and Winthrop Bay, which receive discharges from Massport's outfalls, are all listed as impaired for pathogens (i.e., fecal coliform and enterococcus). *See* Fact Sheet p. 30. The TMDL applies to the 33 pathogen impaired segments of the Boston Harbor watershed that are currently listed on the CWA § 303(d) list of impaired waters.¹ Section 303(d)(1)(C) of the CWA requires states to develop TMDLs for waterbodies that are not meeting water quality standards, including meeting designated uses. *See* Fact Sheet p. 8-9. The 2018 Final Pathogen TMDL for the Boston Harbor, Weymouth-Weir, and Mystic Watersheds ("Boston Harbor TMDL") was developed to address the impairments from bacterial pathogens and other fecal-related pollutants in the Boston Harbor watershed. The comment erroneously states that the TMDL is intended to protect certain designated uses "where those activities are expected to occur." The Fact Sheet (p. 30) explains that the receiving waters for Massport's outfalls are Class SB (Boston Harbor and Winthrop Bay) and Class SB(CSO) (Boston Inner Harbor), and that both classes are designated as "habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value." *See also* 314 CMR 4.05(4)(b); AR-2 p. 15. The designated uses of a receiving water are specified regardless of whether they are being attained. *See* 314 CMR 4.02. The Class SB and SB(CSO) waters in the vicinity of Massport's outfalls are designated for, among other uses, recreational water use and the TMDL identifies wasteload allocation indicator

¹ The Final Pathogen TMDL for Boston Harbor specifically lists the Massport Authority stormwater discharges to these impaired segments on pages 25, 27, and 36.

bacteria to achieve designated uses. *See Id.* p. 1, 79.² The Boston Harbor Pathogen TMDL plainly applies to the segments of the watershed that receive industrial stormwater discharge from Massport's outfalls. However, even if the TMDL did not apply, as explained above, the water quality standards for Class SB and SB(CSO) waters, and the effluent limitations based on these water quality standards, would still apply to Massport's discharges.

The comment asserts that primary sources of bacteria in the outfalls are naturally occurring, non-point sources and there is no evidence that there is human contribution. EPA recognizes the efforts that Massport has undertaken to characterize, investigate and eliminate illicit connections and defects in the storm drainage system in accordance with Part I.B.9 of the 2007 NPDES Permit. In particular, Massport completed inspections and dye testing throughout the property in 2007/2008, after which it eliminated several illicit connections and addressed multiple sewer defects. *See* AR-3 (Massport CSI Summary Report, September 2008) and AR-4. (Massport 2013 SWPPP Progress Report) In addition, Massport's SWPPP contains several measures that focus on control of bacterial contamination from lavatory practices, wildlife control and other activities. In particular, Massport employs specific requirements to manage waste from the Police K-9 unit on the property, including the daily disinfection of all hard surfaces, as well as other measures for general wildlife management, including covering all dumpsters, replacing leaking dumpsters, and bird flock deterrent techniques. EPA also recognizes the capital improvement projects completed at the site listed in Attachment 3 of Massport's comments. Some aspects of the projects refer generally to remodeling, adjusting, replacing, or otherwise altering sanitary piping systems and new storm drains. However, it is not clear from the comment where and how these improvements address stormwater discharges to Massport's outfalls. While the sanitary and stormwater improvements described may improve stormwater quality in certain areas, it is not clear what portions of older infrastructure remain and could potentially contribute to pollutants to stormwater discharges.

As the comment points out, bacteria levels at Outfalls 001, 002, 003 and 004 frequently exceed water quality standards in both wet and dry weather discharges despite improvements at the airport. See Table A-1.

Table A-1. Percent of samples collected monthly between April 2015 and May 2022 that exceed maximum daily water quality standards for pathogens (260 cfu/100 mL for fecal coliform and 276 cfu/100 mL for enterococcus).				
	Maximum Daily Fecal Coliform		Maximum Daily Enterococcus	
	Wet Weather	Dry Weather	Wet Weather	Dry Weather
Outfall 001	60.3%	35.1%	67.2%	38.5%
Outfall 002	75.0%	55.1%	77.0%	33.8%
Outfall 003	70.0%	26.9%	85.7%	39.5%
Outfall 004	74.1%	47.5%	72.6%	23.8%

² Table 7-1 (p. 77) of the Final Pathogen TMDL for Boston Harbor identifies fecal coliform as the wasteload allocation indicator bacteria for Class SB waters approved for shellfishing (with depuration) and *Enterococcus* as the indicator bacteria for Class SB/CSO segments.

Massport indicates that its source identification and illicit discharge detection investigations have not identified any ongoing sanitary contributions on any level. Massport also asserts that “the bacteria being measured are derived from animal or decaying plant matter in non-point areas that migrate into Logan’s industrial stormwater drainage systems.” However, the concentrations of bacteria at Massport’s outfalls are higher than one would expect from a natural source and suggest a direct sanitary source. The Boston Harbor TMDL prioritized segments for implementation of additional monitoring and structural and non-structural best management practices (BMPs) based on bacteria concentrations. The TMDL assigns the highest priority to segments where dry or wet weather concentrations were equal to or greater than 10,000 cfu/100 mL because “such high levels generally indicate a direct sanitary source” and a medium priority to segments where dry or wet weather concentrations fall between 1,000 and 9,999 cfu/100 mL “since this range of concentrations generally indicates a direct sewage source that may get diluted in the conveyance system.” AR-1 p. 69-70. Between April 2015 and May 2022, bacteria levels at Massport’s outfalls exceeded 10,000 cfu/100 mL 59 times during wet weather (about 11% of samples) and 29 times during dry weather (about 5% of samples) and fell between 1,000 and 9,999 cfu/100 mL 180 times during wet weather (about 34% of samples) and 117 times during dry weather (about 20% of samples).

Massport characterizes sources of bacteria as “non-point,” but concentrations of bacteria were observed in the stormwater discharges from the point source outfalls owned and operated by the Permittee. The source of the high concentrations of both fecal coliform and enterococcus remains unclear. Massport suggests that elevated levels of fecal coliform may be attributed to non-fecal *Klebsiella* (known false-positive indicators of fecal contamination) but that does not explain the similarly high levels of *Enterococcus*. The investigations into the source of bacteria at the facility’s outfalls have thus far been inconclusive. See AR-5. [June 6, 2011 memo from Jim Stolecki (Massport) to Jill Greene (CDM)]. Annual reports suggest that cleaning and inspections of manholes and catch basins target structures within 100 yards of maintenance facilities. See AR-6. (e.g. Massport 2016 SWPPP Progress Report). If the Permittee believes that the source of bacteria is non-fecal, targeting the catch basins and outfalls for inspection and cleaning may improve water quality samples. An October 2018 monitoring study of stormwater discharges to Outfall 001 (North Outfall) for bacteria and pharmaceutical and personal care products (PPCP) (referenced in Attachment 4 of Massport’s comments) indicated presence of PPCPs targeted for illicit detections, including acetaminophen, caffeine, and cotinine. See AR-7 (December 2018 memo from CDM to Massport). Massport does not explain why there would be high levels of enterococcus and presence of PPCPs in stormwater discharges if bacteria being measured are derived from animal or decaying plant matter in non-point areas that migrate into its stormwater drainage system. Outfalls 001 and 002 have been described as having “stoplogs” which hold back certain amounts of water from several storm events before discharging. It is not clear whether Massport has done sufficient investigation into whether any areas of its stormwater drainage system may be holding water back and potentially allowing the growth of existing bacteria to multiply between storm events. Massport offers no specific evidence to verify that the only cause of elevated bacteria concentrations is wildlife or other natural sources and the studies and investigations submitted to date have largely been inconclusive. See Massport Comments Attachment 4. As noted earlier, aside from Outfalls 001, 005 and A21, which discharge to tidal areas, the majority of outfalls are in deep water and it is not clear how decaying plant matter would be responsible for high bacterial counts at those outfalls. If the commenter is suggesting

that plant matter is present in its drainage structures, it has not discussed any initiatives to assess whether its drainage structures have decaying plant matter in quantities that could possibly lead to elevated bacterial counts and the feasibility of removal of such plant matter.

The comment raises concerns about the precedent the proposed bacteria limits would set and the level of treatment that may be required to reduce bacteria concentrations at the Facility. The Clean Water Act requires that water quality-based limits be established when necessary to attain water quality criteria—feasibility is not to be factored into that analysis. See *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 33 (1st Cir. 2012); *In re City of Taunton*, 17 E.A.D. 105, 190 (EAB 2016); *In re City of Moscow*, 10 E.A.D. 135, 168 (EAB 2001); *In re City of Fayetteville, Ark.*, 2 E.A.D. 594, 600-601 (CJO 1988) (Section 301(b)(1)(C) “requires unequivocal compliance with applicable water quality standards and does not make any exceptions for cost or technological feasibility.”). The comment focuses on disinfection to treat stormwater and asserts that, at the scale of the facility, this technology is unprecedented and not guaranteed to achieve bacteria levels at the proposed limits. Reducing runoff volume and source controls are among the most effective options for reducing bacteria loads to receiving waters from stormwater. See AR-8³. If, as the comment asserts, the sources of bacteria are natural (e.g., wildlife and/or sources within the drainage system), pollution prevention via BMPs such as restricting wildlife access, minimizing conditions that attract nuisance wildlife, and improving drainage system and outfall maintenance may reduce contributions of bacteria in stormwater. In addition, stormwater controls (e.g., infiltration, sand filters) have been successfully used to treat bacteria in stormwater in many settings. Massport has not provided a rationale for why such stormwater controls would not be available at this Facility.

As EPA explains in the Fact Sheet and in this response, monitoring data indicate that Massport’s discharges at Outfalls 001, 002, 003, and 004 are frequently well above bacteria water quality standards and have the potential to cause or contribute to an exceedance of water quality standards in segments of Boston Harbor watershed already impaired for pathogens. Whatever the source, the Permittee is ultimately responsible for what is discharged from its outfalls. That Massport has not, to date, identified an obvious source of the high levels of bacteria in the discharge does not obviate the need for permit conditions that ensure that the discharge will not cause or contribute to an excursion from Massachusetts water quality standards. The Final Permit retains the proposed average monthly bacteria limits for *Enterococcus* at Outfalls 001, 002, 003, and 004 and the average monthly fecal coliform limit at Outfall 001. EPA updated the maximum daily limit for *Enterococcus* to align with the recent update to Massachusetts surface water quality standards. The Permittee is required to monitor at a frequency of once per month, which yields a single sample. However, the water quality standards applicable to the effluent limits for bacteria are based on a geometric mean and a statistical threshold value that no more than 10% of samples collected within the specified interval exceed the maximum value. For discharges to Boston Inner Harbor, the minimum criteria are based on a 30-day interval (e.g., one sample per interval) because the receiving water segment is listed as “SB(CSO).” See 314 CMR 4.05(f)(3)(a)(ii). For discharges to Winthrop Bay, the minimum criteria are based on a 90-day interval (e.g., 3 samples per interval). If the Permittee elects to monitor more frequently, the

³ *Pathogens in Urban Stormwater Systems*, Urban Water Resources Research Council, August 2014

Permittee may calculate and report the geometric mean average monthly value based on all the sample data.

Comment A.2. Proposed pH Requirements

Massport asserts that there is no pH risk associated with its industrial stormwater discharges and respectfully requests that pH monthly monitoring remain unchanged from the 2007 permit (i.e., monthly monitoring).

Historically, the pH of Logan's industrial stormwater discharges has never been a problem or an environmental threat to Boston Harbor. **Figure 5 (Attachment 2)** summarizes the analytical data from 2007 through April 2020 and conclusively demonstrates that pH exceedances range from 0% to a maximum of 2.5%. In addition, pH excursions were random, not specifically triggered by a specific event (evidenced by SWPPP inspections), have not been associated with industrial stormwater discharges, nor were the exceedances repeated in subsequent sampling rounds. Massport notes that EPA's multi-sector general stormwater permit that is issued across Massachusetts uses a pH range of 6.0 to 9.0 SU, which would result in zero exceedances at Logan since 2007. The pH measured at Logan is consistently below standards, does not reflect an environmental risk, and at worst simply reflects the expected wet weather variability that occurs across Massachusetts and the country.

In addition, Massport receives potable water from the Massachusetts Water Resources Authority (MWRA) via the John J. Carroll Water Treatment Plant. Periodically tested at Logan for uplifting to international aircraft, the pH typically is measured around 9.0 S.U. As part of the protocol of delivering potable water to aircraft, the BMP is for Logan's Fixed Base Operators ("FBOs" or tenants) to flush the potable water hoses to ensure fresh water is delivered to the aircraft. The potable water flushing is discharged to storm drains.¹ (The potable water "cabinets," as they are called, are located outdoors on the airside ramp.) Particularly during periods of dry weather, potable water line flushing may result in slightly elevated pH levels in discharges at the North and West Outfalls.

Based on the foregoing, Massport contends that Logan's industrial stormwater does not represent a pH risk for receiving waters and respectfully requests that pH monthly monitoring remain unchanged from the 2007 permit and continues to be conducted on a monthly schedule.

1. Potable water is an "allowable" non-stormwater discharge under the NPDES permit program.

Response to Comment A.2

The Draft Permit carries forward from the 2007 Permit the pH range of 6.0-8.5 S.U. for Outfalls 001A, 002A, 003A and 004A but increases the monitoring frequency from monthly to weekly. The comment requests that the monthly monitoring frequency from the 2007 Permit be retained. EPA reviewed the monitoring data for the four outfalls (001, 002, 003, and 004) from April 2015 through October 2021, summarized in Table 1 below.

Table 1. Wet weather pH data reported at Outfalls 001, 002, 003, and 004 for the period from April 1, 2015 through October 31, 2021.

Outfall	No. Reported Values	Minimum pH	Values < 6.0 S.U.	Maximum pH	Values > 8.5 S.U.
001	59	5.5	1	8.44	0
002	59	6.11	0	8.5	0
003	120*	5.15	3	8.81	2
004	60	5.59	2	8.5	0

* The Permittee reported the same value for the minimum and maximum pH in a calendar month at Outfalls 001, 002, and 004 but reported both a minimum and maximum pH for each calendar month at Outfall 003, resulting in double the number of reported values.

The comment asserts that there would have been zero exceedances of the pH range in EPA's Multi-Sector General Permit (MSGP) (6.0 to 9.0) and suggests that some exceedances may be related to potable water line flushing. First, the pH range in EPA's MSGP is based on the Effluent Limitations Guidelines for airports (see 2021 MSGP Part 8.S.8), whereas Massport's permit limit is a water quality-based effluent limitation designed to meet the in-stream pH range for Class SB waters considering dilution and the buffering capacity of the receiving water. See Fact Sheet p. 41 and Response to Comments for the 2007 Final Permit p. 68. Moreover, the relatively few times that pH was reported outside of the range of 6.0 to 8.5 the reported pH was less than 6.0, which would not meet the technology-based effluent limit for air transportation facilities in the MSGP and would not be associated with potable water line flushing as this would result in a higher pH. As this pH range is being met, maintaining these limited range is also consistent with anti-backsliding.

However, the stormwater monitoring data summarized in Table 1 confirms that pH is consistently within the permitted range of 6.0 to 8.5 at all four outfalls, which suggests that weekly monitoring at these outfalls is not necessary to ensure compliance with the permit limit and as a result, the Final Permit has revised the pH monitoring at these outfalls to monthly. As the comment points out, when an exceedance of the pH limit occurred at an outfall, the following month's pH value was always within 6.0 – 8.5 S.U. EPA revised the Final Permit to require monthly pH monitoring at Outfalls 001A, 002A, 003A, and 004A. EPA notes that the Final Permit retains the pH Study at Part I.C.5, which requires the Permittee to demonstrate that the receiving water pH does not exceed the range of 6.5-8.5 S.U. (the range required for Class SB waters) in order to retain the pH limit range of 6.0-8.5 S.U. for the next permit issuance.

Comment A.3. Proposed PFAS Requirements

Massport respectfully requests that PFAS effluent monitoring requirements not be included in Massport's final NPDES Permit for the reasons described below.

PFAS is not a chemical that is associated with industrial activity at Logan. As reported by EPA in 2012 (EPA-821-R-12-003)¹, which included a comprehensive list and analysis of constituents in deicing products, none of the compounds were fluorine-containing.² Previously in 2010, the Airport Cooperative Research Program (ACRP) Web-only documents #3 and #8³ similarly reported that components analysis on commercial aircraft and pavement deicing materials did not

identify fluorinated compounds. Deicing manufacturers have confirmed that PFAS is not used in deicing fluid.

In addition, PFAS is measured in parts per trillion and because of the regulatory implications of PFAS analytical results, PFAS monitoring should only be mandated after EPA has formally adopted a peer reviewed and confirmed methodology for laboratories pursuant to 40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis for Pollutants (“Part 136”). It is unknown when laboratories will be fully capable of consistently using such a method and whether there will be sufficient laboratory capacity in the six-month window for compliance set forth in the Draft Permit.

EPA and MassDEP separately issued an NPDES permit in January 2021 for Logan’s Fire Training Facility where aqueous film forming foam (AFFF) that contains PFAS was historically used. AFFF would only be used elsewhere at Logan in an emergency situation and pursuant to containment procedures. EPA and MassDEP have separately permitted part of Logan (the Fire Training Facility) to specifically regulate potential PFAS discharges at Logan. Expanding PFAS monitoring to the remainder of the airport would seem to conflict with that targeted but comprehensive approach. Massport respectfully requests that PFAS monitoring requirements not be included in Logan’s final industrial stormwater NPDES Permit.

Firefighting operations, including fire fighter training, is considered an industrial activity that is conducted at Massport Logan. Since these operations continue to use AFFF, EPA and MassDEP have deemed it necessary to monitor for PFAS compounds, which are known constituents of AFFF.

1. Environmental Impact and Benefit Assessment for the Final Effluent Limitation Guidelines and Standards for the Airport Deicing Category, US Environmental Protection Agency, April 2012.
2. A caveat was included that the list was not exhaustive because of the proprietary nature of the formulations.
3. <http://www.trb.org/Publications/PubsACRPWebOnlyDocuments.aspx>

Response to Comment A.3

The information reported under this requirement serves an important purpose. EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. *See* CWA § 308(a)(A), 33 U.S.C. § 1318(a)(A) (specifying that permittees must provide records, reports, and other information EPA reasonably requires); CWA § 402(a)(2), 33 U.S.C. § 1342(a)(2) (requiring permittees to provide data and other information EPA deems appropriate); 40 CFR § 122.41(h) (permittees shall furnish “any information” needed to determine permit compliance); 40 CFR § 122.44(i) (permittees must supply monitoring data and other measurements as appropriate); *see also, e.g., In re City of Moscow*, 10 E.A.D. 135, 170-71 (EAB 2001) (holding that EPA has “broad authority” to impose information-gathering requirements on permittees); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 671-72 (EAB 2001) (holding that CWA confers “broad authority” on permit issuers to require monitoring and information from permittees).

EPA and MassDEP are requiring PFAS monitoring for all reissued individual NPDES permits that have known or suspected discharges of PFAS compounds. As discussed in the Fact Sheet at

page 61, the purpose of this monitoring and reporting requirement is “to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility-specific basis.” These permitting decisions may include whether there is reasonable potential to cause or contribute to a violation of the State water quality standards in the next permit reissuance, and if there is, to inform the development of numeric effluent limits or pollutant minimization practices, or some combination thereof.

Aqueous firefighting foams (AFFF) containing PFAS compounds have historically been used at Logan’s fire training facility as well as in other areas for firefighting incidents, exercises, and equipment testing. EPA acknowledges that Massport no longer uses AFFF at its fire training facility. The airline industry is in the process of phasing out AFFFs for firefighting and the FAA has recommended, but not required, that airlines that conduct fire equipment training using FAA-approved AFFFs utilize a system to capture or recycle such AFFFs and not discharge them to the ground or surface water.⁴ Although Massport’s Fire Department conducts fire training exercises that may at times use AFFF, EPA understands that these exercises incorporate a testing system which does not result in the discharge of AFFF (email correspondence from Ian Campbell of Massport on 9/3/21) AR-9. The National Defense Authorization Act of 2020 required the United States Department of Defense (DoD) to publish a new fluorine-free firefighting foam Military Specification (MILSPEC) by January 31, 2023. On January 6, 2023, the DoD published a MILSPEC for new, fluorine-free firefighting foam titled “MIL-PRF-32725, Fire Extinguishing Agent, Fluorine-Free Foam (F3) Liquid Concentrate, for Land-Based, Fresh Water Applications.” AR-10. This MILSPEC lays out the desired performance standards and chemical properties for fluorine-free AFFF replacements and is approved for use by all Departments and Agencies of the Department of Defense. An implementation schedule will be developed at a later date for the use of AFFF at commercial airline facilities.

As explained in the Fact Sheet, EPA has determined that monitoring for certain PFAS compounds is required for all industrial (NPDES) discharges where the presence of these compounds is suspected based on past or current operations. In addition, there may still be future firefighting efforts requiring the use of AFFF which could unavoidably result in the discharge of AFFF to receiving waters. After one year of monitoring, if all samples are non-detect for all six PFAS compounds, Massport may request to remove the PFAS monitoring requirement. Also, as noted in footnote 7 above regarding analysis of constituents in deicing products, it was acknowledged that the list of constituents analyzed was not exhaustive because of the proprietary nature of the deicing formulations.

Regarding PFAS parameter sampling, EPA acknowledges that test Method 1633 is currently “draft” but EPA’s website⁵ currently indicates that the method has already been multi-lab validated for wastewater and EPA expects the final multi-lab validated method to be published by the end of 2023. Therefore, the footnotes for PFAS in Parts I.A.1, I.A.2, and I.A.3 have been revised to require the sampling requirement for these parameters to take effect the first full calendar quarter following 6 months after the effective date of the permit.

⁴ https://www.faa.gov/airports/airport_safety/certalerts/media/part-139-cert-alert-19-01-AFFF.pdf

⁵ <https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas>

Comment A.4. Proposed Whole Effluent Toxicity (WET) Testing Requirements

Massport requests that WET testing not be included in the final Permit. The potential for poor correlations between WET test results and actual receiving water quality impacts has been well-documented due to the dissimilar nature of the laboratory tests compared to the receiving waters. This is especially true for the marine receiving waters around the Airport, considering the tidal and salinity effects of Boston Harbor. The basis for this request is described below.

EPA cites historic WET data and states in the Fact Sheet that there are many potential pollutant sources that could be combined in the discharges from Logan to pose a toxicity concern. Aircraft deicing fluid manufacturers have removed toxic constituents from their fluids, including tolyltriazoles and nonylphenols. In fact, since about 2015, EPA, MassDEP, and Massport have had extensive information exchanges and discussions regarding WET testing requirements at Logan.

There is no reasonable threat of toxicity to Boston Harbor or receiving waters near Logan related to the basic propylene glycol or other components found in deicing fluids due to the saltwater nature of the receiving streams and the extreme tidal fluctuations that occur. Additionally, based on data collected by Massport since 2007, there is no evidence that discharges associated with deicing operations are causing any Dissolved Oxygen (DO) impacts to receiving waters.

In correspondence with EPA dated September 12, 2014, Massport stated that the WET testing of periodic deicing operations is not indicative of toxicity because:

- WET test procedures are designed for continuous (not periodic) discharges and are not representative of intermittent stormwater discharges.
- Chronic tests for fish have endpoints measured at 48 hours and 7 days. Renewal of the test sample with deicing effluent is inappropriate because deicer is not applied in a continuous application for 48 hours or 7 days.
- WET test methodology requires tests to be conducted at 77°F, significantly higher than Boston Harbor temperatures when deicing discharges occur.
- The extensive 2009 Water Quality (WQ) Study that was required by the current 2007 NPDES Permit concluded that low tide exposures to discharges are limited in extent, intermittent, and much less than the 48 hours or 7 days used in WET testing protocols.

Nevertheless, Massport agreed to continue to analyze its deicing operations and proposed an approach for further assessing possible environmental impacts associated with deicing operations and appropriate efforts to minimize any significant impacts. In collaboration with the Co-Permittees, Massport proposed, and EPA agreed, to conduct analyses in a methodical and holistic manner, carefully considering the unique aspects of Logan's geography, infrastructure, operations, and receiving waters to develop an operationally and financially feasible deicer discharge management program. The result was the Deicer Feasibility Study, which resulted in Massport and its Co-Permittees committing to implement a Blend to Temperature program, and also technical elements have been adopted by EPA and MassDEP in this Draft Permit.

Response to Comment A.4

EPA disagrees with several aspects of this comment.

Massport's Discharges Have Violated Both the Permit's WET Reporting Criteria and the Massachusetts Water Quality Standards for Toxicity

The commenter requests removal of the WET monitoring requirements from the Draft Permit and asserts the overall reason is based on the alleged potential for poor correlations between WET test results and actual receiving water quality impacts due to the dissimilar nature of the laboratory tests compared to the receiving waters. The commenter contends that this is especially true for the marine receiving waters around the Airport, considering the tidal and salinity effects of Boston Harbor. EPA has considered this comment but disagrees with it and maintains its conclusion that Massport's discharges which are in violation of the permit's WET criteria are also causing or contributing to violations of Massachusetts water quality standards ("WQS"). EPA explains its view below.

Under CWA §§ 301, 303 and 402 CWA, EPA and the States may establish toxicity-based limitations to implement narrative water quality criteria calling for "no toxics in toxic amounts." See also 40 CFR § 122.44(d)(1). The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." AR-2. (See 2021 Fact Sheet, page 62). The Draft Permit proposed quarterly, acute WET testing at Outfalls 01A, 02A, and 04A based on acute effects of varying degrees from WET testing at 24 and 48 hours. (See 2021 Fact Sheet, page 62 and Attachment C)

Massport's Discharges Include Constituents other than Propylene Glycol Products that may be Toxic

The commenter states that there is no reasonable threat of toxicity to Boston Harbor or receiving waters near Logan related to the basic propylene glycol or other components found in deicing fluids due to the saltwater nature of the receiving streams and the extreme tidal fluctuations that occur. EPA disagrees. Two of the quarterly samples collected at Outfalls 01A and 02A each year must be conducted on discharges during or soon after deicing has occurred. This requirement was based on results from monitoring conducted under the 2007 Permit between 2008 and 2013 which indicated effluent toxicity in deicing effluent from several of the airport's outfalls. (See 2021 Fact Sheet, Attachment C) Therefore, the fact that these discharges enter saltwater does not necessarily mean they will not exhibit toxicity and dilution is often limited at some of these outfalls due to tidal conditions.

As explained in the 2021 Fact Sheet (p. 63), EPA recognizes that tolyltriazole and nonylphenol compounds are being phased out in some glycol products; however, these pollutants are not the only constituents in deicing formulations that may be toxic. For example, deicing chemicals may also contain proprietary chemicals which are not disclosed or listed in the Safety Data Sheets (SDS) and which infer corrosion control and other critical properties whose toxicity potential is unknown. In addition, tolyltriazole and to a lesser extent, nonylphenol, are still being used and

have been detected in some recent sampling during deicing episodes (See 2021 Fact Sheet, page 62 and Attachment A). Although EPA expects that there will be reductions in the discharge of glycols as co-Permittees fully implement the Blend to Temperature program during this permit term, glycols and other pollutants associated with other industrial activity could still be present in the discharges.

WET Laboratory Conditions Are Not Required to Match Receiving Water Conditions

EPA also disagrees with the commenter's assertion that the WET test is invalid because there is a poor correlation between WET test results and actual receiving water quality impacts allegedly due to the dissimilar nature of the laboratory tests compared to the receiving waters. First, 40 CFR § 122.44(d)(1)(v) provides that when the permitting authority determines that a discharge will (or may) cause, has the reasonable potential to cause, or contribute to an in-stream excursion above a narrative criterion for toxicity, then "the permit must contain effluent limits for whole effluent toxicity."⁶ (Similarly, 40 CFR § 122.44(d)(1)(iv) provides that a permit must contain whole effluent toxicity limits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contribute to an in-stream excursion above a numeric criterion for whole effluent toxicity.) In addition, EPA's WET tests have been upheld in federal court. *See Edison Elec. Inst. v. EPA*, 391 F.3d 1267, 1274-75 (D.C. Cir. 2004) AR-11. Second, the laboratory test conditions are not required to reflect the conditions of the receiving water. For example, the duration of the laboratory test does not need to match the estimated exposure times at the point of discharge in order to have value. The value of the WET tests is in their ability to consistently measure the aggregate toxicity of a complex effluent. In addition, it is neither practicable nor required for EPA to create individualized WET tests for every discharger to match the precise discharge temperature, effluent concentration, and duration of exposure of organisms at the discharge site, all of which may vary under different conditions, and all while using the most sensitive species likely to be exposed to the effluent at the discharge site. Instead, WET test conditions are standardized to optimize test organism performance. Other than the effluent, all factors such as temperature, salinity, dissolved oxygen, food given to the organisms each day, and other criteria, are kept constant in order to maintain the health of the test organisms while they are subjected to the effluent.

The Shorter Timeframe does not Necessarily Conflict with the Chronic Endpoint Test

In consideration of Massport's comment that stormwater discharges are intermittent and not continuous, this permit's composite sampling requirement for WET testing requires sampling over a 2 hour timeframe, instead of a 24 hour composite sample that is typically required. The shorter time frame would more closely represent typical deicing discharge durations. This shorter time frame does not necessarily conflict with the chronic endpoint test which measures effects to aquatic species after 48 hours or 7 days. When WET reports are analyzed, the different durations at which toxic effects are exhibited will be shown. Additionally, Massport has not submitted any physical analysis demonstrating that organisms would only be exposed to high concentrations of

⁶ The regulation provides an exception so that whole effluent toxicity limits are not required if chemical-specific limits are demonstrated to be sufficient to attain any applicable narrative and numeric State water quality criteria. 40 CFR § 122.44(d)(1)(v). In this case, however, no such demonstration has been made.

the discharge for an extremely short duration because the stormwater discharges are intermittent. Therefore, EPA concludes that it is necessary to maintain the WET testing requirement.

The Salinity and Dilution of the Receiving Waters do not Prevent the Threat of Toxicity

The commenter stated that there is no reasonable threat of toxicity to Boston Harbor or receiving waters near Logan due to the saltwater nature of the receiving streams and the extreme tidal fluctuations that occur. EPA disagrees. First, as explained above with regard to the saltwater nature of the receiving water, WET test conditions are standardized to optimize test organism performance. In addition, when laboratory tests are conducted, the acute WET testing protocol includes an adjustment of salinity to reflect 25 ppt + 10 percent for all dilutions by adding dry ocean salts. (See Draft Permit, Attachment A, Marine Acute Toxicity Test Protocol, July 2012) Second, EPA disagrees with the assertion that there is no reasonable threat due to extreme tidal fluctuations with the amount of dilution that is available for deicing discharges. The available dilution for Outfalls 001 and 002 is less than 10:1 (See 2021 Fact Sheet, pages 57-60) The recommended criterion to prevent acutely toxic effects is 0.3 toxic units (T.U.). This is based on an adjustment factor of one-third used to extrapolate the LC₅₀ to an LC1 (concentration at which 1% of the test organisms die). In order to assure that this limit is met within a short distance of the effluent pipe, the MassDEP has established an end-of-pipe limit of 1.0 T.U. for dilution factors less than (or equal to) 100. At dilution factors less than 10, effluent toxicity poses a high risk to receiving waters. The MassDEP's Toxics Policy requires both acute and chronic end points to be reported. Two limits apply to the effluent: (1) the chronic test should result in a No Observed Effect Concentration greater than or equal to the Receiving Water Concentration (NOEC \geq RWC) and (2) the acute level should be less than or equal to 1.0 T.U. (LC₅₀ \geq 100%)⁷. Therefore, dilution is addressed by EPA's application of the WET limits consistent with both Massachusetts' Toxics Policy (AR-12) and Mixing Zones Implementation Policy, 1/8/93 (AR-13) and a result, the effluent limits would be the same whether the effluent is discharged during different tidal conditions, as the commenter suggests. MassPort's suggestion that the discharges satisfy state mixing zone requirements because aquatic life in the receiving waters would only be exposed to acutely toxic discharges for a very short and insignificant duration is not supported by physical modeling and amounts to speculation. The Final Permit maintains WET monitoring requirements for this discharge to assure that acutely toxic exposures will not occur in the mixing zone and because prior WET data during deicing episodes at Outfalls 001B, 002B, and 004B as shown in Fact Sheet Attachment C have exhibited chronic and acute toxicity. As a result, the permittee's effluent neither satisfies Massachusetts mixing zone requirements nor State water quality standards.

The Temperature the Receiving Waters does not Prevent the Threat of Toxicity

Massport commented that WET tests are conducted at a significantly higher temperature than Boston Harbor temperatures when deicing discharges occur. Massport further suggests that WET tests should be conducted at the same temperature as the ambient receiving water in order to provide meaningful results. EPA disagrees. First, WET tests have been properly applied and carried out to assure compliance with the State's narrative water quality criterion for toxicity,

⁷ Implementation Policy for the Control of Toxic Pollutants in Surface Waters, Feb. 23, 1990.

and the permittee's deicing discharges have demonstrated chronic and acute toxicity. Second, it is not necessary for water temperatures used in WET tests to match the water temperatures at the discharge site in order to for the test to yield meaningful results. WET tests assess the impact of discharge toxicants independent of effects from other factors in the receiving waters, including influences from substrate differences and physical conditions, such as dissolved oxygen, temperature, and weather cycles. This allows regulatory agencies to use WET testing to specifically identify and control the portion of the impact caused by the pollutant discharges.⁸

Deicing Constituents Could Remain Near the Outfall for Several Hours and Pose a Toxicity Threat

The commenter asserts that the renewal of the test sample with deicing effluent is inappropriate because deicer is not applied in a continuous application for 48 hours or 7 days. EPA disagrees. The acute WET testing protocol attached to the Draft Permit stipulates that the 48 hour test is a static non-renewal test and there is no portion of the test that is conducted for 7 days, as was required by the 2007 Permit. Although this 48 hour test period may not match up exactly with periods of time that deicing discharges are occurring, it was demonstrated in the 2021 Fact Sheet that dilution is limited at some of the outfalls where WET testing is required. Therefore, it is likely that there would be periods of time when weather conditions dictate that deicers are applied intermittently over many hours or days resulting in discharges that could also have long duration, even up to 48 hours and beyond. Therefore, such discharges may not be dispersed in a short period of time and could remain in the vicinity of the outfall for several hours beyond when deicing activities may have ceased.

EPA agrees, there does not appear to be a Dissolved Oxygen Concern

The Permittee commented that there is no evidence that discharges associated with deicing operations are causing any Dissolved Oxygen (DO) impacts to receiving waters. After reviewing Massport's 2017 Deicer Study, EPA finds that there does not appear to be reasonable potential for the discharge to cause or contribute to an excursion below the DO standard of 5.0 mg/L.

In summary, EPA concludes that it has set appropriate WET testing requirements in the Draft Permit and the Agency's approach is consistent with other permits in the region.

Comment A.5. Proposed Deicer Constituent Requirements

Massport respectfully requests that deicer constituent monitoring not be included in the final Permit as a means of evaluating deicer reductions from year to year based on the detailed information provided below.

EPA's proposed monitoring for deicing-related parameters is a dramatic increase from the 2007 permit's requirements of twice per deicing season and is inconsistent with the Blend to Temperature technology-based effluent limits that EPA and MassDEP also proposed. The results of deicer constituent monitoring have never indicated water quality violations related to aircraft deicing operations. Massport has demonstrated that the capacity of the receiving harbor waters

⁸ EPA Technical Support Document for Water Quality-based Toxics Control, March 1991, page 11.(AR-14)

makes it almost impossible to create the type of Dissolved Oxygen (DO) impacts that would impact aquatic life due to the high tidal fluctuations and general capacity of salt water to overcome any DO issues from deicing operations. Absent water quality concerns, Massport and its Co-Permittees engaged in a feasibility study regarding the most appropriate source control technologies that could be implemented to meet the demands of the Clean Water Act. Working closely with EPA and MassDEP, Massport and its Co-Permittees agreed to implement Blend to Temperature source reduction technologies in its next (this Draft) permit.

As described in the Deicing Feasibility Study (2018), the performance of the Blend to Temperature source reduction technology can only be measured by a comparison of the amount of deicing fluid that would have been applied absent the technology and then the amount actually applied resulting from the technology. No further deicing event monitoring is necessary or warranted due to the lack of any measured impacts to water quality.

Massport has demonstrated the highly variable nature of its deicing discharges and the lack of meaningful information that outfall monitoring provides. Historic data are highly variable and dependent on many factors including type and amount of precipitation; number of aircraft deiced before, during and after such precipitation; timing of aircraft operations and pavement deicing, tidal cycle, and relative time of sample collection during all of these highly fluctuating occurrences. **Figures 6 through 8 (Attachment 2)** compare these variability factors to hourly deicing data collected by Massport.

These figures illustrate that there is virtually no way to predict end-of-pipe results from one deicing event to the next, and monitoring data only reflect the actual conditions during that particular deicing event, wet weather conditions, tidal conditions, etc. These data cannot be compared from event to event or annually. Massport believes that monitoring of glycol use in the Blend to Temperature program, as approved by EPA/MassDEP, will more accurately reflect deicing discharge and demonstrate reductions.¹

¹ Some of Massport's Co-Permittees (specifically the Boston Airline Group) submitted their own comments on the Draft Permit, including specific comments about the content of and deadlines for implementing the proposed Blend-to-Temperature technology requirements. Massport considers those comments consistent with these comments.

Response to Comment A.5

The commenter requests that deicer constituent monitoring not be included in the final permit as a means of evaluating deicer reductions from year to year. Monitoring for propylene glycol, BOD, and COD is warranted for this permit term to track whether their decrease is commensurate with the reductions in glycols that are applied by the airlines as they implement the BTT program during the permit term. Routine monitoring (without limits) is a staple of NPDES permitting – in part to make sure that the “technology” is working properly to minimize pollutant discharges and meet WQS. This monitoring will also help to determine if effluent limits – including TBELs – should be established in the next permit. EPA could consider reduction in this monitoring for the next permit term based on the data gathered under this permit.

Contrary to the Permittee's assertion that the results of deicer constituent monitoring have "never indicated water quality violations," WET testing results during deicing conditions at Outfalls 01B and 02B have exhibited varying levels of toxicity. (See Fact Sheet Attachment C)

The proposed monitoring for deicing-related parameters has not significantly increased. The 2007 permit required monitoring during deicing activities for ten total outfalls, twice per deicing season, for a total of 20 total samples. This Draft Permit requires sampling at four outfalls (03B, 06B, 07B, and 08B) three times per deicing season and at two outfalls (01B and 02B) during each month of deicing season, for a total of 26 discrete samples.

The monitoring period that was evaluated for the Draft Permit showed that there were many deicing seasons during which Massport and/or the co-permittees did not sample during deicing events. EPA understands that deicing conditions represent sampling challenges as well as accessibility issues at certain outfalls. Since there were not many instances of deicing sampling that were conducted during the last five years, EPA finds it appropriate to adjust the sampling requirements in this permit. In addition, since Massport says it cannot predict end-of-pipe results from one deicing event to the next, implying variability in these discharges, this provides additional rationale for continued and increased sampling in order to have a sufficient data set with which to determine effluent trends.

The Permittee commented that DO impacts would not impact aquatic life due to the high tidal fluctuations and general capacity of salt water to overcome any DO issues from deicing operations. After reviewing Massport's 2017 Deicer Study, EPA finds that there does not appear to be reasonable potential for the discharge to cause or contribute to an excursion below the DO standard of 5.0 mg/L. However, EPA reiterates that the limited glycol constituent monitoring will provide confirmation of reductions of glycol concentrations as deicing levels are reduced through the BTT program.

Comment A.6. Proposed Part I.A Effluent Limitations and Monitoring Requirements

Comment A.6.1 Part I.A.3 Deicing Episodes

The following language is recommended as replacement to sentence one of footnote 1 on page 16 of 50 in bold:

Sampling taken in compliance with the monitoring requirements specified above shall be taken at a point prior to discharge from Outfalls 01B and 02B.

The basis for this request is that deicing occurs at the Terminal Gates and on the Juliet Pad when operationally permitted when Runway 14/32 is not active. Deicing is conducted in areas of the airport not mutually exclusive to deicing. Other industrial activities, such as fueling are often conducted concomitantly. Deicing discharges flow through the stormwater drainage system in combination with all other stormwater.

Response to Comment A.6.1.

EPA acknowledges that discharges to Outfalls 01B and 02B may contain flows from other portions of the drainage system which may contain other sources of stormwater associated with industrial activity which may not be able to be segregated from the deicing discharges.

Therefore, the portion of the sentence that reads “and prior to mixing with any other stream” has been deleted in the Final Permit.

Comment A.6.2 Ammonia

Based on EPA information, Massport respectfully requests that the ammonia monitoring requirement not be included. As noted in the Fact Sheet on pages 51-52: “Since Massport has discontinued the use of urea for deicing, it is in compliance with the ELG requirement [14.7 mg/L].” EPA has determined that there is no reasonable potential to violate the ammonia WQS.

Response to Comment A.6.2.

As noted in the Fact Sheet (p. 52), the recommended acute criterion value for ammonia is 7.1 mg/L, assuming a receiving water temperature of 5°C (representative of water temperature during the deicing season when samples were collected), a pH of 8.5 SU, and salinity of 30 ppt. The maximum reported ammonia concentration during the deicing season was 3.45 mg/L at Outfall 006B in March 2019. This value is less than the appropriate acute criterion and EPA determined that there is no reasonable potential to violate the ammonia WQS. Because there is no reasonable potential, EPA did not establish a numeric ammonia limit in the Draft Permit. In addition, as the comment asserts, by discontinuing the use of urea, the Permittee complies with the applicable Effluent Limitations Guideline (ELG). See 40 CFR § 449.10(a). The Permittee must demonstrate continued compliance with the ELG by certifying annually that none of the deicing or anti-icing compounds used by the Permittee or Co-Permittees contain urea.

At the same time, sampling of the deicing discharges confirms the continued presence of ammonia in the effluent (ranging from 0.28 mg/L to 3.54 mg/L). See Fact Sheet Attachment A. Since there is minimal dilution available at some outfalls, EPA determined that continued monitoring (without limits) for ammonia is warranted to ensure both that the water quality standards for ammonia continue to be protected and to confirm compliance with the ELG to eliminate use of urea for deicing compounds.

Comment A.6.3 Nonylphenol

Massport respectfully requests that the nonylphenol monitoring requirement not be included. The deicing fluid industry began to modify their formulations as early as 2013 to produce more eco-friendly products including the elimination of nonylphenol ethoxylates. Massport began to see the result of the formulation improvements in the water quality data beginning in 2014 at the 01 (North) and 02 (West) Outfalls as summarized below. Those data do not justify continued monitoring for nonylphenol.

<u>Date</u>	<u>Outfall</u>	<u>Propylene Glycol mg/L</u>	<u>NNP ug/L</u>
2/28/2019:	01B North	11,800	<0.02
	02B West	17,000	<0.02
01/17/2018	01B North	12,400	<0.02
	02B West	11,400	<0.02
03/10/2017	01B North	3,730	<0.02
	02B West	9,940	4.163
02/01/2017	01B North	297	<0.02
	02B West	1,850	<0.02
03/21/2016	01B North	1,100	<0.02
	02B West	11,000	<0.02
02/08/2016	01B North	14	<0.02
	02B West	4,400	<0.02
02/01/2017	01B North	297	<0.02
	02B West	1,850	<0.02
01/30/2015	01B North	8,800	<0.02
	02B West	4,400	<0.02

If Nonylphenol is not included as a monitored constituent, Footnote 8 should be modified to not include reference to Nonylphenol.

Response to Comment A.6.3

As explained in the Draft Permit, glycol formulations often contain additives which are considered proprietary and not disclosed on Safety Data Sheets. There is a water quality concern with nonylphenol as described in the Fact Sheet which shows toxic effects at low concentrations. In addition to the effluent data presented by the Permittee above, a review of the effluent monitoring from Fact Sheet Attachment A also showed additional nonylphenol detections as follows:

Outfall 01B (0.05 µg/L; April 2015)

Outfall 02B (0.2 µg/L; April 2015)

Outfall 06B (0.612 µg/L; April 2016 and 1.38 µg/L, March 2019).

Although there are still occasional detections, they occurred several years ago and were at low levels. However, due to the limited data for this parameter and its toxicity potential this monitoring will be maintained in the Final Permit but has been reduced from three times per deicing season to once per deicing season for 6 outfalls. These are Outfalls 01B, 02B, 03B, 06B, 07B, and 08B. It is EPA's view that this frequency is not considered excessive, but rather sufficient to characterize whether effluent levels of nonylphenol represent a reasonable potential to violate WQS.

Comment A.6.4 PFAS

Massport respectfully requests the PFAS monitoring requirement not be included, as previously discussed. If the PFAS monitoring is not included, Footnotes 9 and 10 should not be included.

Response to Comment A.6.4

See Response A.3. PFAS monitoring has been retained in the Final Permit.

Comment A.6.5 Part I.A.6 Industrial Activity from Pavement and Runway Activities Other Than Deicing & Part I.A.7 Industrial Activity from Aircraft and Pavement Runway Deicing Activities

The following language is recommended as replacement to Part I.A.6. on page 22 of 50 in bold:

Massport and Co-Permittees are authorized to discharge stormwater associated with industrial activity from pavement and runway activities to Outfalls 06A (airfield outfall A21) and Outfall 07A (airfield outfall A33) to Boston Harbor, and to Outfall 08A (airfield outfall A8) to Winthrop Bay. If it is determined that pavement deicing has occurred within the last 24 hours, the sample field report will note the activity which will be reflected in the monthly reporting as a deicing sampling event. Outfalls with a “B” designation will make the distinction. All efforts will be made to sample when anticipated deicing events are expected to occur.

Excluding deicing from 06A, 07A, and 08A is not feasible during the deicing season which, by permit definition, extends from October (Quarter 4) through April (Quarters 1- 2). Pavement deicing of runways and taxiways is a necessary and required operational activity and hence the exclusion of such activity is not feasible. Sampling in the airfield requires authorization from Massport Operations for access. The scheduling of such activity is scheduled in advance with the consultant. Deicing of pavement is conducted when required, irrespective of what the sampling schedule is.

Additionally, based on our previous comments, Massport respectfully requests that Part I.A.7 not be included.

Response to Comment A.6.5

EPA acknowledges that during the deicing season, the Permittee cannot always exclude or segregate stormwater associated with deicing from samples of storm water associated with other industrial activities pursuant to Part I.A.6. The Permittee should sample for Parts I.A.6 and I.A.7 at different times during the calendar quarter as there should be several opportunities during each quarter to sample pursuant to Part I.A.6 when deicing discharges are not occurring. EPA acknowledges that sampling could be challenging due to weather-related conditions and access issues on the runways. However, since Parts I.A.6 and I.A.7 require analysis for 2 distinct sets of chemical parameters, it would be acceptable to sample for both Parts during the same day and to note on the DMR that other flows were present. For example, if sampling was conducted pursuant to Part I.A.7 (deicing episode) and there likely was also stormwater associated with

industrial activity present (i.e. pavement and runway activities) the Permittee would note that on the DMR or as an attachment to the DMR. Therefore, EPA has added language to both Parts I.A.6 and I.A.7 to acknowledge that other waters may be present during sampling.

Comment A.7. The Final Permit maintains the sampling requirements at Part I.A.7 which are designed to capture stormwater during deicing activities. As noted, the parameters requiring sampling in Part I.A.7 are different than those in Part I.A.6, which are meant to sample discharges from industrial activities other than those that occur during periods of deicing. Proposed Unauthorized Discharges

Massport suggests the following revisions Parts I.B.2.b.-n. (page 26 and 27)

- For b: add “non-industrial” before stormwater...” to read “Discharges of non-industrial stormwater and non-stormwater...” Industrial stormwater is covered by the permit, which allows some contribution of pollutants that meet technology-based and water quality-based effluent limits.
- For c: Massport respectfully requests that EPA revise this provision to say that compliance with the permit is intended to meet all water quality standards absent evidence of particular pollutant discharges that exceed such standards.
- Provisions d, and f. through I. are duplicative of provision a.
- For j: this provision is repetitive of the FTF NPDES permit and cannot serve as a separate violation under this NPDES permit.
- For l: these discharges are typically considered “allowable non-stormwater discharges” as long as Massport implements appropriate BMPs to control those discharges. Those BMPs do not need to eliminate or remove 100% of the pollutants.

If Massport’s suggested revisions are adopted, similar revisions would need to be made to the Fact Sheet at page 29 of 77.

Response to Comment A.7

For Part I.B.2.b, EPA agrees with the commenter and has added the word “non-industrial” prior to the word stormwater in that section. This permit authorizes the discharge of industrial stormwater, otherwise referred to as stormwater associated with industrial activity.

Part I.B.2.c has been removed from the Final Permit as there is a similar provision in Part I.A.8.

EPA agrees that Parts I.B.2.d and I.B.2.f through I.B.2.i. are duplicative of Part I.B.2.a. and have been removed from the Final Permit.

Part I.B.2.j. is meant to address any discharges from any firefighting equipment testing or any other potential discharges attributed to Massport’s Fire Department. Such discharges are not authorized by NPDES Permit #MA0032751, which only authorizes the discharge of collected

water from fire training exercises to one specific outfall. Therefore, this provision, which is now designated as Part I.B.2.d. will remain in the Final Permit.

For Part I.B.2.1, EPA disagrees that discharges from dewatering, hydrostatic tank testing or pipe pressure testing that contain sediment, chemicals, or other pollutants are typically considered “allowable non-stormwater discharges.” Therefore, this provision, which is now designated as Parts I.B.2.f., will remain in the Final Permit. Such discharges may need to be authorized by EPA’s Dewatering and Remediation GP, which may be found at <https://www.epa.gov/npdes-permits/dewatering-and-remediation-general-permit-drgp>. (AR-15)

Massport requested that EPA make correlating changes to the Fact Sheet. Although EPA is making changes to the Final Permit as described above, the Fact Sheet cannot be changed after it has been public noticed with the Draft Permit.

Comment A.8. Proposed Stormwater Pollution Prevention Plan (SWPPP) Requirements Part I.C.1.

Comment A.8.1 BMPs for Identifying and Reducing Deicing and Anti-icing Sources – Source Reduction

The following language is recommended as replacement with amended portions of paragraph 2 on page 36 of 50 in bold:

“Co-Permittees that deice aircraft shall implement a blend-to-temperature program for tracking and reducing the use of glycols, the documentation of which, shall be collectively managed and reported by Massport. This program requirement is detailed in Part I.D. below, which specifies a timeline by which this program is required to be implemented and an annual assessment of the reduction in glycol use and corresponding levels of effluent BOD and COD discharged to the receiving waters. It also requires the long-term reduction of the discharge of glycols. The Co-Permittees shall continue to assess, under direct oversight by Massport, other measures to implement which will continue to reduce the levels of deicing and anti-icing chemicals used throughout the airport.”

It is important for the permit language to be clear regarding entities engaged in the specific types of deicing activities. Massport does not deice or anti-ice aircraft; that is the sole responsibility of the airlines and/or service providers (Fixed Based Operators) for ensuring aircraft flight safety. They are regulated by FAA regarding deicing and anti-icing operations, and EPA cannot impose any restrictions on their use apart from FAA, as implied at the top of Draft Permit page 36. Massport collects information and documents/reports the level of deicing and anti-icing activity but has no authority to ensure that only the necessary amounts of deicing chemicals are used. It is important that the permit clearly state that Massport does not deice aircraft.

The following language is recommended as replacement with amended portions of paragraph 3 on page 36 of 50 in bold:

“Co-Permittees that are not subject to the blend-to-temperature program (small commuter and general aviation departures) shall continue to implement other measures described in the

SWPPP above to minimize the use of glycols. **Co-Permittees shall communicate their findings to Massport for inclusion in each annual Glycol Reduction Report described in Part I.D.**

The following language is recommended as replacement with amended portions of Part I.C.1.f.(4) Aircraft Deicing in bold:

“Co-Permittees shall ensure that only the necessary amounts of deicing chemicals are used, consistent with considerations of flight safety and protocols established by the FAA. This evaluation shall be carried out by personnel most familiar with the particular aircraft and flight operations. Co-Permittees shall consider using alternative deicing/anti-icing agents as well as containment measures for all applied chemicals. Co-Permittees shall also consider the following BMP options (or their equivalents) for reducing deicing fluid use: forced-air deicing systems, computer controls fixed-gantry systems, infrared technology, hot water, enclosed-basket deicing trucks, mechanical methods, solar radiation, hangar storage, aircraft covers and thermal blankets. Massport and its Co-Permittees shall also consider using ice-detection systems and airport traffic flow strategies and departure slot allocation systems.

Response to Comment A.8.1

EPA acknowledges that Massport does not deice aircraft, but rather is responsible for clearing and deicing runways and taxiways. Massport’s role, as the primary Permittee, is to oversee the implementation of the blend-to-temperature (BTT) program and collect glycol usage information from the co-Permittee tenants that conduct deicing operations. Therefore, the language recommended by Massport at Part I.C.1.f.(2) will be added to the Final Permit to make the responsibilities between Massport and its co-Permittees clear with respect to the BTT program.

The paragraph referenced by Massport at Part I.C.1.f.(2) reads as follows:

All applicators of anti-icing and deicing chemicals shall consider alternatives to the use of these chemicals to reduce the aggregate amount of these chemicals used and/or lessen their environmental impact while maintaining flight safety.

EPA used the words “while maintaining flight safety” to convey that EPA is not requiring a reduction in glycols which would conflict with any applicable regulatory requirements for safe airport operations (*see* FAA regulations at 14 C.F.R. Part 139) or aircraft deicing mandates, which prioritize flight safety. The purpose of this permit’s glycol reduction requirement is not intended to override or restrict any glycol application requirements based on flight safety.

Regarding co-Permittees that are not subject to the BTT program, EPA agrees with adding the language requested by Massport at Part I.C.1.f.(2) to require such co-Permittees to inform Massport of other measures that they undertake to reduce the amount of glycols used in order that Massport can include this information in its annual Glycol Reduction Report submittal. EPA will add this language to the Final Permit but will add the word “these” prior to co-Permittees in the last sentence of this paragraph to signify that this applies to those co-Permittee tenants that are not required to implement the blend-to-temperature program. However, since

Massport is responsible for the deicing of runways and taxiways, the language requiring Massport to consider implementation of measures to reduce its glycol applications will remain but has been modified to specify deicing chemicals that Massport applies to these areas.

Regarding the suggested language at Part I.C.1.f.(4) of the Draft Permit, EPA agrees that the suggested language more clearly identifies the co-Permittee tenants as being responsible for this requirement since Massport does not deice aircraft or runways. In addition, EPA has corrected the second paragraph of Part I.C.1.f.(2) which refers to Part I.D. It should have referred to Part I.C.2, which details the Deicer Discharge Reduction Plan (DDRP). Therefore, these revisions have been made to the Final Permit.

Comment A.8.2 BMPs for Identifying and Reducing Potential Illicit Discharges

The following language is recommended as replacement with amended portions of paragraph 2 on page 38 of 50 in bold:

Within 6 months of permit issuance, Massport will submit a compilation of all work completed to date including new construction, stormwater improvements, and study results.

Massport has already conducted a complete assessment of its storm drainage system utilizing various methodologies to ascertain illicit connections, compromised sewer or drainage lines, or other impairments taking into account recently conducted assessments. Massport agrees to develop a plan for utilizing novel techniques and monitoring tools for assessing the nature and source of bacteria; however, the one-year time frame to undertake this comprehensive and time-consuming task is unachievable for multiple reasons:

- Outside resources by outside consultants are necessary to design such an assessment due to the complex and extensive nature of the drainage system requiring coordination with airport operations; and
- Contracting services must be established and all parties must obtain necessary airport-authorized access to drainage structures.

Massport recommends removal of paragraph 3 of Part I.C.1.g.(1) in its entirety as it is duplicative and in some instances contradictory to what is proposed in Part I.C.1.g.(5) and (6).

Response to Comment A.8.2

In consideration of the comment and the work that has already been conducted with regard to illicit connection investigations, the one-year requirement in the Draft Permit to “conduct a complete assessment of its storm drainage system to include video inspection, dye testing, and/or other methods in order to evaluate whether there are illicit connections, broken sewer or drainage lines” has been removed from the Final Permit. In Part I.C.1.g(1), the two year reporting requirement has been changed to refer to the findings of the “BMP for Identifying and Reducing

Potential Illicit Discharges” instead of the Draft Permit language regarding the findings of the illicit connection investigation that was already conducted.

In addition, the Final Permit has been revised to combine portions of Parts I.C.1.g(1) and (6) and eliminate Part I.C.1.g.(5), which was duplicative of other parts of this Section.

Comment A.9. Proposed Long-Term Reduction in Glycol Usage and BOD/COD Loading Provisions in Part I.C.1.i (2)

The following language is recommended as replacement with amended portions of paragraphs 2, 3, 4 and 5 on page 45 of 50 in bold:

“Beginning the first full deicing season that is at least two years after the effective date of this permit, Co-Permittees that conduct deicing of aircraft shall implement a Blend-to-Temperature program for the use of aircraft deicing products containing glycol as part of an overall Deicer Discharge Reduction Plan (DDRP).”

The DDRP shall be incorporated into Massport’s SWPPP **within twenty-four (24) months** of the effective date of this permit. Co-Permittees that conduct aircraft deicing operations shall implement these updated SWPPP requirements no later than the **first full deicing season that is at least two years after the effective date of this permit.**

Massport shall submit the DDRP to EPA and MassDEP within six months of the effective date of the permit. The permittee shall address any comments received by EPA or MassDEP on the DDRP within six (6) months of receipt of such comments. **The permit shall implement the DDRP no later than the first full deicing season that is at least two years after the effective date of this permit.** The DDRP shall be made available to the public to the extent allowable by law.

The justification for the requested Blend to Temperature implementation schedule is the Massport-required Tenant Alternation Application (TAA) process for approving such systems as outlined in the Deicer Management Feasibility Study for Logan International Airport, May 2017. This process involves comprehensive system design reviews across numerous internal departments. Once the TAA is approved, the Co-Permittee needs to procure and then install the equipment in an orchestrated manner as the construction is within close proximity to active gates. It is for these reasons a one-year implementation schedule is not feasible.

In addition, in the Deicer Management Feasibility Study, the analysis that was performed provided an estimated ADF reduction of 27% at the North Outfall and an estimated 28% ADF reduction at the West Outfall. The report did not identify a 30% reduction target but simply stated that based on historical weather conditions, the 27% and 28% reductions were possible.

Response to Comment A.9

In consideration of the TAA process that airline and service provider tenants need to undergo in order to implement the BTT program and the ongoing effects of the COVID-19 pandemic on the airline industry, EPA has determined that an additional year to fully implement the program is

warranted. An additional year should provide Massport and these co-Permittee tenants the time necessary to effectively coordinate and fund this effort so that it is implemented effectively. Therefore, the Final Permit language has been revised as requested by Massport and this change is deemed to be a logical outgrowth of the comment received.

Massport's suggested language states in part: "the permit shall implement the DDRP no later than". In the Final Permit, EPA has changed this paragraph to say: "the Co-Permittees, with Massport's support as needed, shall implement the DDRP no later than. . .". EPA is making this distinction because the Co-Permittee tenants that conduct deicing are responsible for the implementation and are required to obtain certain approvals from Massport related to this implementation through the TAA process noted in the comment. In addition, the Co-Permittees must also provide information regarding implementation of the DDRP to Massport that will be part of Massport's annual Glycol Reduction Report submittal, which will track the DDRP's implementation.

The Fact Sheet stated that "Massport has estimated this approach may reduce glycol application levels by up to 30% when fully implemented." *See* Fact Sheet page 66. Massport's Deicer Management Feasibility Study (DMFS) stated that "adoption of BTT ... is projected to generate glycol discharge load reductions of almost 30% each from the North and West Outfall drainage basins, respectively." For purposes of this permit, EPA considers the load reductions at Outfalls 001 and 002 to be commensurate with the modeled (estimated) reductions at the respective drainage basins of these outfalls.

The DMFS estimated average reductions of 27 and 28% respectively for Outfalls 001 and 002. Given the variation in modeled glycol reductions over several decades presented in the DMFS, the conservatism inherent in the model (Pages 5-6 and 5-7 of DMFS), and standard deviation around these averages, EPA determined the figure of 30% as a target for glycol reduction is reasonable once the BTT program is fully implemented. In addition to the BTT program, Part I.C.1(f).4 requires evaluation of other measures to reduce glycol application. The main factors that ultimately determine the glycol reduction at an individual airport are the range of air temperatures and the specific blends of glycol and water that are applied through the deicing season. EPA also looked to other airports where BTT has been implemented and has found that the 30% target is reasonable for airports with similar or harsher climates. A study conducted at the Minneapolis–St. Paul International Airport during the 2010–2011 deicing season compared trucks equipped with blend to temperature and forced air/fluid technologies to existing conventional technology trucks under similar deicing conditions and found that the new technology trucks reduced glycol consumption by between 34 and 67% compared to traditional deicing trucks.⁹ At the Detroit Metropolitan Wayne County Airport (DTW), implementation of blend to temperature deicing operations resulted in a 36 to 43% decrease in mainline Type I fluid usage compared to a base year. (Wagoner et al. 2013) AR-16.

To reiterate, the 30% glycol reduction is not an enforceable limit, but rather a target which Massport and co-Permittee tenants will reference in assessing year-to-year results. In the annual

⁹ Airport Cooperative Research Program (ACRP) Research Report 14 Deicing Planning Guidelines and Practices for Stormwater Management Systems Second Edition, 2020. AR-17

Glycol Reduction Report, EPA expects Massport, in coordination with its co-Permittee tenants that conduct deicing, to assess whether they met the 30% glycol reduction target. If the target is not met, Massport, in cooperation with its Co-Permittee tenants, must explain why and describe measures that will be taken towards attaining this reduction target in subsequent years, if feasible. The Final Permit has been revised to acknowledge that Massport must cooperate with Co-Permittee tenants in this effort.

Comment A.10. Comments on Proposed Fact Sheet

Comment A.10.1 Small Municipal Separate Storm Sewer System (MS4) Permitting

Massport respectfully requests that the requirement to submit a NOI for MS4 discharges (page 4 of 77) not be included as follows:

- EPA's Massachusetts Small MS4 permit does not designate Logan for small or non-traditional MS4 permit application requirement. See <https://www.epa.gov/npdes-permits/regulated-ms4-massachusetts-communities>
- The Draft Permit covers all of the outfalls for the airport in its entirety. If EPA's intent is to isolate "non-industrial" from "industrial" discharges, that is not possible because the areas of operation for Co-Permittees and Non-Co-Permittees overlap particularly at the terminals and cargo buildings (for example, Concessionaires, who are non-Co-Permittees, may have food waste tanks and trash dumpsters stored outside on the ramp).
- EPA has appropriately regulated Logan's pollutant discharges through this industrial stormwater and the Fire Training Facility NPDES Permits.

Response to Comment A.10.1

The Fact Sheet cannot be changed after the Draft Permit is issued. EPA will work with Massport to determine appropriate permit coverage for stormwater discharges that are not already covered by this permit and the fire training facility permit.

Comment A.10.2 Fact Sheet

Part 3.3.1 Effluent Limitation Guidelines

The following language is recommended as replacement with amended portions of paragraph 2 on page 14 of 77 in bold:

The Permittee has estimated that implementing source reduction via Blend-to-Temperature as modeled may result in an up to 27% reduction in ADF discharges at the 001 North Outfall and up to a 28% reduction at the 002 West Outfall based on weather conditions.

As stated previously, the analysis that was performed as part of the Deicer Management Feasibility Study estimated an ADF reduction of 27% at the 001 North Outfall and 28% ADF reduction at the 002 West Outfall. The report did not identify a 30% reduction target but simply stated that based on historical weather conditions, the 27% and 28% reductions were possible.

3.2.2 Co-Permittee Deicing Activities

Sodium acetate is also used as a pavement deicer and should be added to the list of deicing and anti-icing products.

3.2.2 Deicing and Anti-icing Chemical Storage

Edits are made to the first and second sentence on page 17 of 77; the following language is proposed in bold:

Glycol deicing and anti-icing chemicals are stored in close proximity to terminal and cargo buildings in indoor and outdoor storage containers ranging in size from 55-gallon drums to 21,000-gallon tanks. Potassium acetate is stored in two above ground tanks (25,000 gallon and 45,000 gallons) near Massport Facilities. Sodium acetate is stored indoors as a solid in bags.

3.2.2 Fuel and Oil Storage

The following edit to the third sentence on page 18 of 77 is proposed in bold:
Fueling by diesel-powered tanker trucks is conducted at the North Cargo, South Cargo and General Aviation aircraft loading areas **and at Terminal C for a commuter airline.**

3.2.2 Rental Car Facilities

Massport requests the deletion of this section and other references to “car rental facilities” in the Draft Permit and Fact Sheet.

Rental car facilities are not defined separately as generating stormwater discharges associated with industrial activity under 40 CFR 122.26(b)(14). Furthermore, the rental car facilities are in the public transportation area of the airport, while all of the regulated airport activities at Logan (subject to industrial stormwater permitting requirements at 40 CFR Part 122 occur inside the Air Operations Area that is not accessible to the public. Nevertheless, Massport has environmental protection language in all of its tenant leases.

3.2.2 Oil and Hazardous Materials Spills and Releases

The following edit to the third sentence on page 22 of 77 is proposed in bold:

The MFRD is the On-Scene Commander (OSC) and provides **oversight of** emergency containment **and cleanup** of releases or spills, when necessary, until the responsible party completes the cleanup.

3.2.3 Outfall 001 – North Outfall

The following edit is proposed to the second sentence on page 22 of 77 in bold:

The drainage area includes Terminal E, the apron and taxiway between Terminals C (**west of Gate 19**) and E, a portion of the outer taxiway, the north taxiway area that includes the American and Delta **Jet Blue hangar**, and the north cargo building **Massport Facilities buildings**. Terminal D no longer exists.

3.2.3 Outfall 002 – West Outfall

The following edit is proposed to the first and second sentences on page 24 of 77 in bold: Stormwater runoff from approximately 535 acres on the south side of the terminal buildings drains to the Boston Inner Harbor through a 114-inch circular pipe **10' x 12' box culvert** at Outfall 002. The drainage area includes Terminals A and B, portion of Terminal C **east of Gate 19**, the apron and taxiways between Terminals B and C, a portion of the outer taxiway, **eastern portion of North Cargo**, and South Cargo.

3.2.3 Outfall 003 – Porter Street Outfall

The following edit is made to the first and second sentences on page 24 of 77 in bold: Stormwater runoff from about 182 acres on the northwest side of the terminal buildings and a portion of East Boston discharge through 003 to Boston Inner Harbor via a **10' x 12' box culvert**, which is located next to Outfall 002. The drainage area includes the jet fuel storage facility (tank farm), rental car agencies, the American Airlines hangar (demolished), **Delta Airlines hangar, Massport Hangar 5**, and vehicles access roads.

3.2.3 Regular/routine sampling

The following edit is proposed to the second sentence of paragraph 1 on page 27 of 77 in bold: The tide gate at Outfall 002 holds back flows during periods around high tide **to prevent harbor water from flowing upgradient into Logan's stormwater drainage system.**

3.2.3 Sampling upstream of Outfall 001: 01D and 01E (internal outfalls)

The following edit is proposed to the last sentence in paragraph on page 28 of 77 in bold: The water that collects in these vaults and hydrant pits is pumped out manually and transferred to a "set up tank," which is a **20,000 gallon (UST)** in the fuel farm area (**the tank is a component of the upgraded Wastewater Treatment System referenced in Section 3.2.3 of the Fact Sheet**).

3.4.1 Fire Training Facility (FTF)

The following edit is proposed to Paragraph 2, fifth, sixth, seventh, and eighth sentences on page 28-29 of 77 in bold:

Treated water is then sent to an aboveground, 21,000-gallon capacity storage tank for later reuse, or discharged **under controlled conditions typically not exceeding a five (5) hour period**. This tank can typically store water from several training sessions. The first option for this treated water is to reuse it in future training sessions **to minimize water consumption**. Water that cannot be reused is eventually discharged to perimeter drain outfall **A38** to Boston Harbor, as ...

5.1.2 Outfalls 01A, 01D, 01E, 02A, 03A, 04A, and 05A

The following clarification is proposed to the second sentence on page 35 of 77 in bold: The Permittee has not reported a discharge from Outfall 01E since August 2016 **as the system was decommissioned and subsequently replaced with the upgraded Wastewater Treatment System in 2021**.

The following clarification is proposed to Paragraph 2, fourth sentence on page 37 of 77 in bold:

The drainage area for Outfall 003 includes, but is not limited to, a jet fuel storage facility, rental car agencies, and **Massport Hangar 5 (formerly US Airways hangar)**, which is consistent with the industrial activity and exposures in the drainage areas.

Response to Comment A.10.2

The Fact Sheet cannot be changed after the Draft Permit is issued, but the clarifications in the comments are noted for the record. The following are responses to specific corrections or clarifications offered above.

EPA acknowledges that Massport's Deicer Management Feasibility Study estimated an ADF reductions of 27% and 28% for Outfalls 001 and 002, respectively, with the implementation of the blend to temperature program. Also see Response A.9.

The figures of 27 and 28% reductions at Outfalls 001 and 002 were estimated averages and EPA believes that the target of 30% reduction for the overall glycol reduction at the airport is not unreasonable given the variability of year-to-year conditions, deviation around those averages, and consideration of other PRTs that will be considered and potentially implemented. The comment is noted for the record, but the Fact Sheet cannot be changed as already noted.

B. Comments from Richard S. Davis, Principal, Beveridge and Diamond

We submit these comments on behalf of the Boston Airline Group (BOS Airline Group) in response to the joint public notice by the United States Environmental Protection Agency (EPA) of a draft National Pollutant Discharge Elimination System (NPDES) permit for discharges from Logan International Airport and of EPA's request to the Massachusetts Department of Environmental Protection (MassDEP) for state certification of that permit under Section 401 of the federal Clean Water Act (CWA) dated April 12, 2021. The BOS Airline group consists of the major U.S.-flagged airlines serving Boston Logan International Airport and is comprised of Alaska Airlines; American Airlines; Delta Air Lines; Federal Express; JetBlue Airways Corporation; Southwest Airlines; United Airlines; and United Parcel Service.

Comment B.1. Certain Requirements in the Draft Permit are Inconsistent with the Finding that Blend-to Temperature (BTT) Technology is Best Available Technology for Boston Logan International Airport

The Agency has determined that the application of Blend-to-Temperature (BTT) technology constitutes BAT for this airport for operations other than small commuter and general aviation departures.¹ Application of that Best Management Practice constitutes fulfillment of the technology-based standard for control of aircraft deicing runoff during storm conditions at this site.

Three additional terms in the Draft Permit are inconsistent with the designation of BTT as BAT at this site. We address each in turn.

1. Draft Permit at I.C.2, paragraph 1 (page 45). See also, Fact Sheet at 14. Small commuter and general aviation departures are subject to separate effluent glycol limitations set forth at Part I.C.1.f.2 of the Draft Permit. In addition to establishing BTT as BAT, the permit makes the implementation of BTT is made mandatory for all Co-Permittees other than operators of small commuter airlines and general aviation aircraft. Draft Permit at I.C.1.f.2 and I.C.2.

Comment B.1.1 Additional 30% "Target" is Inconsistent with Finding that BTT Constitutes BAT at Boston Logan International Airport

The first is the establishment of a further "target" of a 30% glycol reduction in Section I.C.2 of the Draft Permit. If this target, or the requirement to work toward its attainment, constitutes an effluent limitation,² then it is inconsistent with the finding that BTT – and not "BTT plus continued pursuit of a 30% reduction" – constitutes BAT for this site. Because the record contains no support for the proposition that pursuit of a separate 30% reduction target is necessary to satisfy applicable water quality standards, it also cannot be justified as a water quality-based effluent limitation. And, as described more fully in Part II of these comments, a 30% reduction target mischaracterizes the performance of BTT and, thus, cannot stand as an appropriate benchmark or other indicator of the proper employment of that Best Management Practice.

If it is the Agency's intention that pursuit of the 30% glycol reduction target is an enforceable obligation of this permit, then that obligation is inconsistent with and otherwise unsupported by the record and should be deleted. If the 30% target is not intended to establish an independent enforceable obligation, then the final permit and fact sheet should be modified to state that position clearly.

2. The Draft Permit does not characterize this "target" as an effluent limitation separate and apart from the requirement to implement BTT, but two other sections of the Draft permit make clear that it is intended to express an obligation and, therefore, does constitute an independent effluent limitation.

First, the language of Section I.C.2 calls for Co-Permittees to "describe the measures it will take towards attaining this reduction target in subsequent years" where Co-Permittees have not achieved the 30% "target" in any given year. See Draft Permit at page 47. While this reporting obligation is, on its face, merely informational, the reference to measures Co-Permittees "will take" implies that taking those additional measures is an obligation. Second, the Draft Permit states that departures for which BTT has been designated as BAT, and for which the application of BTT is expressly required under the permit, are also under a separate requirement described as follows: "It also requires the long-term reduction of the discharge of glycols." Draft Permit at I.C.1.f.2 at page 36. This statement is not expressly linked to any other specific provision of the Draft Permit but its language mirrors the title of Section I.C.2, the section in which the 30% "target" is established. Reading these two sections together, we conclude that progress toward the 30% glycol reduction "target" is intended to constitute an enforceable obligation and constitutes an effluent limitation separate from the obligation that those Co-Permittees implement the BMP that constitutes BAT at this site.

Response to Comment B.1.1

The 30% glycol reduction is a target and not an enforceable permit limit. EPA determined that this was an appropriate target based on Massport's modeling in its Deicer Management Feasibility Study (DFMS), other studies documenting the adoption of BTT, and typical year to year variation in glycol use at Logan. Also see Responses A.9 and A.10.2.

Comment B.1.2 Requirement to Evaluate and Adopt "Other Glycol Reduction Measures" Should be Limited to Co-Permittees for Whom BTT Has Not Been Determined to Constitute BAT

Second, the requirement that the Deicer Discharge Reduction Plan (DDRP) "shall include other glycol reduction measures, examples of which are provided in Part I.C.1.f, to demonstrate decreases in the annual COD loadings and glycol usage during the deicing seasons as measured at Outfalls 001 and 002"(Draft Permit at I.C.2) should be expressly limited to Co-Permittees for whom BTT has not been determined to constitute BAT for the control of aircraft deicing runoff.

As noted above, it is the implementation of BTT technology – and not something more or different (here, "BTT plus 'other glycol reduction measures'") – that constitutes the extent of the technology-based standard as applied to Co-Permittees other than those small commuter and general aviation operators to whom the BTT finding does not apply.¹ For this reason, the added requirement to pursue "other glycol reduction measures" may be directed only to operators not covered by the BAT finding.

In the first paragraph of Part I.C.2 the Draft Permit appears to suggest such a distinction when describing the applicability of the BTT requirement.

“The use of Blend-to-Temperature programs have been determined through Best Professional Judgement (BPJ) to constitute Best Available Technology (BTA) [sic] for the control of discharges of aircraft deicing fluids at Logan Airport. The DDRP will not require the Blend-to-Temperature program to be implemented for small commuter and general aviation aircraft, although these entities must implement other Pollution Reduction Technologies (PRTs) described in the SWPPP in Part I.C.1.f.”²

It is the absence of this same context in the third paragraph of Part I.C.2 that raises the question whether the requirement for the DDRP to contain “other glycol reduction measures” also applies to Co-Permittees covered by the BTT-BAT finding. We recommend that the Agency clarify the third paragraph by including an express statement that these “other” obligations apply only to Co-Permittees that are not subject to the BTT-BAT finding and who are not obligated to implement BTT technology.

¹ And, as above, the requirement to provide further reductions of glycol usage or discharges cannot be justified as a water quality-based effluent limitation because there is no support in the record that attainment of applicable water quality standards is dependent upon such further reduction.

2. Draft Permit at I.C.2, paragraph 1 (emphasis added).

Response to Comment B.1.2

Part I.C.1(f)(4) requires the consideration of other glycol reduction measures for all co-Permittee tenants and did not differentiate between those co-Permittees that are required to implement the BTT program and those that are not. EPA has reconsidered this requirement and has determined that only those co-Permittees that are not required to implement the BTT program, specifically the small commuter and general aviation aircraft, are required to consider other glycol reduction measures (aside from those that would be achieved through implementation of the BTT program). For this permit term, the BAT determination to require the implementation of the BTT program is sufficient for co-Permittees that conduct deicing. When this permit is reissued, EPA will assess the effectiveness of this program to reduce glycol levels that were estimated by Massport’s modeling. At that time, EPA could require consideration of additional glycol reduction measures if the BTT did not meet the reductions estimated by the modeling or there are documented water quality or toxicity impacts of glycol discharges.

Part I.C.1(f)(4) of the Final Permit has been revised to specify that only those co-Permittees that are not subject to the BTT program requirements are required to consider glycol reduction measures during the permit term. Consistent with the change to Part I.C.1(f)(4) EPA has removed the third paragraph of Part I.C.2. The first bulleted item under the Glycol Reduction Report requirements has been replaced with language that better represents which entities are subject to the Deicer Discharge Reduction Plan (DDRP). In addition, the sixth and a portion of the eighth bulleted items under this section have been removed to be consistent with changes made to Part I.C.1.f.(4) of the Final Permit, which do not require Massport and Co-Permittee tenants that implement the DDRP to consider additional BMPs to identify and reducing deicing and anti-icing sources.

During the next permit reissuance, EPA will assess the implementation of the BTT program and determine whether additional glycol reduction measures would need to be considered or implemented by the co-Permittee tenants that are subject to the BTT program.

Also see Response A.8.1

Comment B.1.3 SWPPP Requirement to Assess Additional Technologies May Not Apply to Co-Permittees for Whom BTT Has Been Determined to Constitute BAT

Similarly, the requirement that the SWPPP include consideration of technologies in addition to BTT is inappropriately applied to Co-Permittees to whom the BTT-BAT finding applies. The requirement in question is reproduced here.

Massport and its Co-Permittee tenants shall also consider the following BMP options (or their equivalents) for reducing deicing fluid use: forced-air deicing systems, computer controlled fixed-gantry systems, infrared technology, hot water, enclosed-basket deicing trucks, mechanical methods, solar radiation, hangar storage, aircraft covers, and thermal blankets.

Consideration of these BMPs is appropriate where, as under the Multi-Sector General Permit, a permit writer has not made a site-specific determination based upon their Best Professional Judgment of the technology or technologies that constitute BAT for that site. Here, however, in the context of this individual permit, the Agency has made exactly that site-specific determination. Consideration and application of any BMP beyond that BPJ determination of BAT is not authorized because it goes beyond the statute's authorization to apply BAT standards.

To address this mis-fit between permit terms borrowed from general permits and the current individual permit being developed for this site, we recommend that a caveat be added to the language quoted above to clarify that it applies only to those Co-Permittees that are not subject to the BJP finding of BAT and who are not, therefore, required to implement BTT technology at this site.

Response to Comment B.1.3

See Response B.1.2 above.

Comment B.2. The Permit Inappropriately Establishes a "Glycol Reduction Target" of 30% (Part 1.C.2.).

The Draft Permit requires development of a Deicer Discharge Reduction Plan (DDRP), and submittal annually of a Glycol Reduction Report tracking the implementation of the DDRP. The Glycol Reduction Report in turn, must include the following.

- An assessment of whether the glycol reduction target of 30% has been met. Massport shall explain why the 30% reduction target was not met and describe the measures it will take towards attaining this reduction target in subsequent years.

The 30% value used in this section derives from and mischaracterizes the findings of a study performed by Massport and air carriers serving Logan International Airport. Any obligation to take measures to attain that or any other numeric glycol reduction in any given year is inconsistent with the nature of aviation deicing and is not supported by the record here.

Massport and members of the BOS Airline Group prepared a Deicer Management Feasibility Study and submitted it to US EPA Region I in May 2017 (a copy is transmitted with these comments as an attachment hereto). This was the result of nearly a year-long analysis of management strategies to reduce the discharge of residual deicing fluids into the stormwater system. The stated objective of this effort was to evaluate the feasibility, cost and effectiveness of alternatives to reduce the discharge of residual aircraft deicing fluids. This document concluded that the Best Available Technology for the reduction of the discharge of residual deicing fluids was the implementation of blend to temperature (BTT) deicing technologies.

Based on an analysis of deicing practices at BOS, the majority of deicing operations (98%) occur within the North (Outfall 001) and West (Outfall 002) drainage basins. To determine the effectiveness of selected deicing fluid discharge reduction technologies, the efficiency of each technology was simulated using the last 60 years of daily minimum temperature and precipitation data coupled with a 2021 projected flight schedule. The results of this simulation indicated that, on average, the application and subsequent discharge of glycol would be reduced between 27% (North Outfall) and 28% (West Outfall) using BTT and was the most cost-effective technology of the identified feasible technologies. The simulation indicates that reduction efficiencies greater than 30% are possible and would be expected in a minority of years over the period of record. Simply stated, however, the Feasibility Study does not support the proposition that a 30% reduction in glycol discharges can be expected in any given year or even in the majority of years represented by the period of record.

As the study clearly demonstrates, the effectiveness of BTT technology, as well as that of all other technologies evaluated, is highly influenced by seasonal weather conditions: colder weather events require higher concentrations of glycol to achieve the freeze protection required by FAA. For example, if temperatures range between 15 and 25F during a winter storm event, reductions in glycol application of 30% through the use of BTT are not possible while ensuring safe aircraft operations owing to the higher glycol concentrations required at those temperatures. The use of more dilute fluid formulations in such conditions would violate FAA directives that protect the safety of flight for passengers and flight crews by requiring an 18F offset between the fluid freeze point and the outside air temperature. As noted above, a 30% glycol reduction target is not supported by the data presented in the detailed Feasibility Study. In fact, establishing any fixed fluid reduction 'target' is not supported by the data; fluid reduction fluctuates with the outside air temperature such that greater savings are realized during mild winter precipitation

events (e.g., temperatures ranging between 28 – 35F) compared to colder winter precipitation events.

Further, the fluid reduction derived through the use of BTT which is observed in one deicing season cannot be compared to the fluid reductions observed in other deicing seasons and is not predictive of fluid reductions for any following season. Warmer winter weather events allow for the use of more dilute deicing fluids and thus result in greater fluid reductions. However, colder temperatures require the use of more concentrated fluids thereby resulting in reduced fluid reductions. This is exemplified in Table 5-4 of the feasibility study in which the simulated propylene glycol reduction was 32% for 2012, 24% for 2013 and 20% for 2014. Each of these simulations assumes optimal implementation of BTT; thus, the differences in fluid reduction are solely due to different weather conditions. Because of the effect of weather on the effectiveness of BTT as well as the overall volume of aircraft deicing fluids applied at the airport, neither BTT fluid reductions nor applied ADF volumes can be compared on a year-to-year basis.

The air carriers and fixed base operators who conduct deicing activities at BOS have committed to implementing BTT as a fluid reduction strategy. However, the fluid reduction performance of BTT technology is a function of observed and predicted weather conditions (e.g., temperature) at the time of aircraft deicing operations as well as at the point of departure. Further, the fluid mixture must also consider the potential for changing weather conditions and microclimates associated with different areas of the airport. Additionally, fluid mixtures may vary during the day as temperatures fluctuate. These factors must all be considered in the selection of the fluid mix to ensure safe operations and all of these factors affect fluid reduction efficiency.

The permit metric of 30% reduction should therefore be deleted because this is not an accurate characterization of BAT.

Moreover, the requirement to effectively repeat the feasibility study which was used to establish BTT as BAT year after year in the event that the 30% -- or any other target -- is not met is irrational.

In accordance with EPA's findings when establishing the Airport Deicing Effluent Limitation Guidelines (77 Fed. Reg. 29168 (May 16, 2012)), BAT decisions for the control of aircraft deicing fluid – including those based on the exercise of Best Professional Judgment – must consider site specific conditions such as operational constraints, land availability, safety considerations and impacts to flight schedules. These items were considered in the Feasibility Study and are unlikely to change on a year-to-year basis; no new land will become available, the airport ramp area will continue to be congested even as the air carriers recover from the pandemic and, due to very limited land availability, the implementation of centralized deicing operations which has been evaluated multiple times will impact both operations and flight schedules. Thus, language establishing 30% -- or any other percentage -- fluid reduction as a target and requiring feasibility study-like efforts to be repeated whenever 30% reduction is not achieved should be replaced by the following requirements:

- Each air carrier or FBO conducting deicing operations (excluding those entities that are exempt from the BTT requirement), shall certify annually for each deicing season that BTT technologies were implemented for each deicing season.
- Massport and the air carriers/FBOs conducting aircraft deicing operations shall annually review the Feasibility Study to determine if changes have been implemented at the airport which would invalidate the assumptions made in the Feasibility Study. Changes and their potential impact on the conclusions of the Feasibility Study shall be noted and discussed.
- As part of the annual Glycol Reduction Report required to be submitted on or before September 30 of each year, provide a report of the performance of BTT during the prior deicing season including an analysis, as already noted in the permit, of *weather and other factors which affected the performance of BTT* for that season (Part 1.C.2).

Response to Comment B.2

EPA acknowledges that year-to-year conditions vary considerably at airports with respect to the amounts and concentrations of glycols that are required to be applied. Although Massport's DMFS estimated glycol reductions of 27% and 28% respectively at Outfalls 001 and 002, there were other modeled estimates that were 30% and above. In addition, the DMFS noted that these modeled estimates were conservative. In light of these reduction estimates, EPA selected a target goal of a 30% reduction, which is believed to be achievable. As noted in Response A.9, other airports have achieved greater glycol reduction using the BTT approach.

This 30% target is not an enforceable limit in the permit. Instead, Massport is required to assess whether the 30% reduction target has been met in its annual Glycol Reduction Report. If the target has not been met, Massport shall explain why the 30% reduction target was not met and describe the measures it will take towards attaining this reduction target in subsequent years, if feasible. The analysis in the annual report should describe how specific conditions may have directly resulted in not meeting the glycol reduction target of 30%. This assessment of whether the target was met is the enforceable element of the permit.

The commenter suggested that EPA incorporate three final permit conditions (see three bullets in their comment above). For the first item, regarding the implementation of the BTT program, EPA finds that the commenter's suggested language more accurately describes the Draft Permit's intent than the item which read "a description of the steps taken to develop and implement the DDRP." EPA has therefore changed Part I.C.2 of the Final Permit. It is EPA's view that the ideas in commenter's other two bulleted suggestions are already captured elsewhere in the permit, and the commenter's other suggested language will not be included in the Final Permit.

Comment B.3. The Use of Monitoring Data to Estimate Reliable and Accurate Effluent Loading Estimates is not Practical or Necessary

The glycol collection report requires Massport to 'use the monthly sampling requirement for BOD/COD during each deicing season as well as any additional sampling results to assure that extrapolated effluent loading estimates are reliably accurate and statistically significant' (Draft

Permit p. 46 of 50). As has been demonstrated by numerous airports nationwide, the runoff of residual deicing materials is a complex process which is substantially impacted by weather conditions. Residual deicing materials may be stored on the airport for substantial periods of time and cannot be associated with any specific storm event or may be discharged soon after use as the event transitions from snow/sleet to rain. Periodic effluent sampling is unlikely to capture these events and will either significantly over or underestimate runoff concentrations. Thus, data collected as per permit requirements will have little utility for determining discharge loadings.

Further, these types of data are unnecessary. Data collected by the air carriers will be sufficient to accurately determine the reduction in BOD loadings compared to baseline conditions (i.e., those conditions without the use of BTT). Even these estimates will overestimate true discharge loads because they do not account for losses due to degradation and evaporation.

Because of these concerns, we request that requirements to utilize discharge data to more or less confirm the discharge reductions obtained through the use of BTT be deleted from the permit.

Response to Comment B.3

Although Massport and its co-Permittee tenants that conduct aircraft deicing will be implementing the DDRP and will document the amounts of glycol compounds that are actually applied, the permit requires the ongoing effluent monitoring for ethylene glycol, BOD, and COD to confirm that effluent loadings are also declining commensurate with the implementation of the DDRP. The commenter notes that “Periodic effluent sampling is unlikely to capture these events and will either significantly over or underestimate runoff concentrations.” The effluent sampling referred to in Part I.C.2 is the actual monthly sampling during the deicing season that is required during deicing events and is expected to be the most representative way to compare reductions in BOD and COD levels with reductions in glycol levels as the BTT program is implemented.

EPA acknowledges that there are multiple factors that influence the discharge of glycols relative to when they are applied, but measuring the effluent loadings is the most direct way to determine the relative decrease in glycols that are discharged over time.

Comment B.4. Monitoring Requirements for Nonylphenol and Triazole Compounds are Not Warranted

Part I.A of the permit requires monitoring for Tolyltriazoles (TTZ) and Nonylphenol in outfalls 01B, 02B, 03B, 06B, 07B and 08B a minimum of 3 times per deicing season. While no water quality criterion has been developed for TTZ, EPA accepted Massport’s proposed benchmark of 0.47 mg/L as a “conservative and appropriate translation of the narrative standard prohibiting toxics being present in toxic amounts”. (p. 53 Fact Sheet). For Nonylphenols, EPA utilized the water quality criteria of 1.7 ug/L (chronic) and 7.0 ug/L (acute).

To determine if there is a reasonable potential to violate water quality criteria, US EPA utilized data collected by Massport from 2008 through 2019. With the exception of tolyltriazole in Outfall 03B in 2019, the maximum observed concentrations of nonylphenol and tolyltriazole was

observed in 2013 or earlier. Thus, the decision to require monitoring of these compounds is based on data over 8 years old.

As noted in ACRP 2008¹, ‘fluid manufacturers constantly consider modifying formulations to improve performance, environmental characteristics, and cost.’ (p. 2-22). Since the revision of AMS 1424 in the early 2000s to include a numerical minimum toxicity of 4,000 mg/L for Type I formulations, fluid manufacturers have substantially reduced toxicity of these fluids from generally below 4,000 mg/L, with newer, more environmentally-friendly fluids meeting environmental standards at even high concentrations – 10,000 to 30,000 mg/L – due largely to the reported removal of nonylphenol and tolyltriazoles (p. 2-22). Further, the use of triazole compounds in aircraft deicing fluid has been recently discontinued in the United States and Europe (ACRP 2020, Fact Sheet 1)². Given that many air carriers make fluid purchasing decisions based in part on environmental performance (ACRP 2020, Fact Sheet 1), several carriers have established ‘antibacksliding’ policies for fluid selection with respect to environmental characteristics and contractual incentives are being written into long-term purchasing contracts, fluid environmental characteristics are only likely to improve over time. This is clearly demonstrated by the available data in which the highest concentrations of NP and TTZ were detected in 2013 or earlier.

Of all of the NP and TTZ monitoring at BOS, the highest NP observation was in Outfall 06B and the highest TTZ observation was in Outfall 03B. Neither of these outfalls receive significant amounts of aircraft deicing fluid runoff. Outfall 06B receives primarily airfield drainage whereas only minimal amounts of deicing are conducted within the 03B drainage basin. Given that the discharges are short lived and are intermittent, the fact that EPA stated there is no reasonable potential to violate the water quality standards or screening value used (in the case of tolyltriazoles) and all but one maximum concentration was observed over 8 years ago, the monitoring requirement for NP and TTZ is unnecessary. Therefore, we request that this monitoring requirement be deleted from the permit.

¹ National Academies of Sciences, Engineering, and Medicine 2008. Formulations for Aircraft and Airfield Deicing and Anti-Icing: Aquatic Toxicity and Biochemical Oxygen Demand. Washington, DC: The National Academies Press.

² National Academies of Sciences, Engineering, and Medicine 2020. Deicing Planning Guidelines and Practices for Stormwater Management Systems, second edition. Washington, DC: The National Academies Press.
<https://doi.org/10.17226/25788>

Response to Comment B.4

As noted in the Fact Sheet, EPA is retaining the monitoring requirements for these two parameters since they are routinely detected and since this monitoring will provide data for future RP analyses. Regarding nonylphenol, the monitoring frequency in the Final Permit has been reduced from three times to once per deicing season as explained in Response A.6.3.

Regarding tolyltriazole, which has been detected at more outfalls and more often than nonylphenol, the monitoring frequency has been retained at three times per deicing season. Although the commenter notes that these compounds are being phased out of glycol formulations, it is not known whether the glycols used at Logan will only be comprised of

glycols that do not include these compounds. Glycol manufacturers often do not include the specific additives used in their formulations as they are considered proprietary information, and small amounts of these compounds exhibit toxic effects as noted in Pages 52-54 of the Fact Sheet. In addition, there were many cases during the 2007 permit's monitoring period that sampling for these parameters was not conducted. Therefore, EPA is retaining this monitoring frequency for tolyltriazole to have enough information at the next permit reissuance to determine whether there is a reasonable potential to violate WQS for this parameter.

Comment B.5. Requirements Regarding the Provision of Data Related to Additives Discharged Cannot be Met

Part 1.C.3 requires that the permittee submit written notification to EPA regarding the use of any new chemical and/or additive that will be discharged. The air carriers in addition to US EPA have made multiple requests to aircraft deicing fluid manufacturers regarding disclosure of information regarding their 'add-packs' in both Type I and IV aircraft deicing fluids. The fluid providers have asserted that this information is proprietary business information and have not provided this information. In addition, the manufacturers may make modifications to their fluids to improve performance. Thus, the Type I product produced this year may be slightly different than the product produced last year. Although the SAE AMS standards 1424 and 1428 assure that the products meet performance standards, the specific product modifications are unknown.

Given the above, the air carriers can and will provide Safety Data Sheets on the aircraft deicing fluids utilized at the airport; however, the air carriers are unable to provide detailed information on the additives contained within the deicing fluids. Thus, this requirement needs to be revised to exempt proprietary additives contained in formulated products utilized at the airport.

Response to Comment B.5.

EPA understands that certain proprietary ingredients in glycol formulations may not be disclosed on Safety Data Sheets (SDS). It is acceptable for Massport and its co-Permittee tenants that apply deicing fluids to provide the SDS for such chemicals as spelled out in Part 1.C.3 of the permit as formulations change. *See also* Response A.4.

Comment B.6. Deadline for Implementation of BTT Must be Revised in Light of COVID-19 Impacts on the Industry

The Draft Permit provides at Part 1.C.2 that "[t]he permittee shall implement the DDRP [which is required to include BTT] no later than the first full deicing season that is at least one year after the effective date of this permit." Even in 2017, however, the Feasibility Study made clear that implementation could not be accomplished within that timeframe. Citing the need for airline Co-Permittees to submit their designs for rigorous review under the Massport Tenant Alteration Application process prior to the commencement of the installation of tankage and other infrastructure required to support BTT, the Feasibility Study projected that BTT systems could not be available for operation until "the first full deicing season that commences two years after issuance of a renewed permit adopting this recommendation."

Today, however, in the wake of the COVID-19 pandemic, we have determined that BTT can be implemented no earlier than the first full deicing season that commences three years after issuance of a renewed permit. U.S. passenger airlines incurred \$5.5 billion in pre-tax losses in 1Q 2021 and airlines amassed billions in debt to weather the crisis. The sizable associated interest expense limits the airlines', including members of the BOS Airline Group, capacity to reinvest in projects such as BTT. While bookings are improving, demand for corporate and long-haul international air travel continue to lag, meaning that revenues remain well below 2019 levels. Overall, total business traveler expenditures on air travel could take a few more years to return to pre-pandemic and the industry's financial recovery will remain fragile until that occurs. Based on these factors, the economic capacity of the BOS Airlines to invest in BTT at BOS will not return to the levels assumed by the 2017 Feasibility study in time to guarantee a two-year-after-effective-date deadline for implementation. We therefore, respectfully request that the implementation deadline for BTT be established as three years after the effective date of the renewed permit.

The Fact Sheet offers no basis for concluding that either the one year- or the two year period following the effective date of the renewed permit is unreasonable or inappropriate. In the absence of any contrary evidence, and because the implementation of BAT must be "economically feasible," the new permit should incorporate the three year compliance deadline described above.

Response to Comment B.6

See Response A.9.

Since these comments were submitted, airline traffic has improved, although attaining pre-pandemic levels may not happen until 2024.¹⁰ In addition, the airline industry has received governmental loans and other COVID-related relief totaling more than \$50 billion. On the other hand, as flight traffic is still below that of pre-pandemic levels, this presents the airlines with the opportunity to devote attention to implementing the BTT approach.

Blending can be accomplished in a variety of ways, from manual mixing of ADF in a deicing truck's tank to the desired concentration, to the use of blending technology that either automates the tank mixture process (for example, blending stations) or provides for "blending on the fly" by adjusting the mix of concentrated ADF and water fed to the deicing application nozzle. Recent developments in equipment technology have made the implementation of this practice more practicable and reliable, both with centralized blending stations and deicing vehicles. Supporting evidence of substantial operations and maintenance savings exists. For example, an airline-sponsored study at a large hub airport concluded that savings of up to \$2.5 million per year for the airport could be realized if blending-to-temperature mixtures were used. A similar analysis at another airport in 2008 indicated savings of over \$1 million for a single (major) carrier through blend to temperature technologies. Modeling of blending to temperature at two airports in 2012 and 2017 indicates airport-wide fluid savings of 27 to 30% with this practice, under relatively

¹⁰ <https://www.iata.org/en/pressroom/2022-releases/2022-03-01-01/> AR-18

optimal climatological conditions (that is, deicing conducted primarily at temperatures between -2°C and more than 0°C).¹¹

Although each airline will approach the implementation of blend-to-temperature individually with a moderate capital outlay, the annual cost savings will accrue every year as noted above with a positive impact on profitability. In addition to equipment changes or modifications, EPA acknowledges that there will be costs associated with training operators to maintain and operate these new BTT systems, but that these costs are not expected to be excessive and will decrease over time. Airlines can use cash on hand or access debt markets for such capital expenditures.

The commenter notes that in the absence of any contrary evidence, and because the implementation of BAT must be “economically feasible,” the new permit should incorporate a three-year compliance deadline. As discussed above, it is believed that implementation of BTT is economically feasible, because the expenses of implementing the BTT program will result in annual cost savings in each subsequent deicing season and that these annual cost savings are likely to be commensurate with the implementation costs. However, in consideration of the pandemic impacts on the airlines and the variability of individual airline costs of implementing BTT, the Final Permit has been changed to require the implementation of the BTT program beginning no later than the first full deicing season that is at least two years after the effective date of this permit, thereby providing an additional full year for implementation.

Comment B.7. Clarifications

Please confirm that the Glycol Reduction Report shall cover the deicing season defined as a period that runs from October 1 through April 30 as opposed to an annual relative reduction. ‘Annual’ in this case could be interpreted as the calendar year; however, it makes more sense to report BTT performance based on the deicing season.

Response to Comment B.7

The commenter is correct, the Glycol Reduction Report (GRR) shall cover the deicing period of October 1 – April 30. In the permit, the term “annual” refers to the reporting requirement that is due on September 30 of each year. This annual report will track the implementation of the DDRP for the prior deicing season that began on October 1 of the prior calendar year and ended on April 30 of the current calendar year.

C. Comments from Staci Rubin of the Conservation Law Foundation

Comment C.1. The final NPDES permit must better assess impacts to environmental justice populations

Logan Airport activities affect environmental justice populations addressed by Executive Order 12898 and its forthcoming revision announced in Executive Order 14008¹. The communities

¹¹ Airport Cooperative Research Program (ACRP) Research Report 14 Deicing Planning Guidelines and Practices for Stormwater Management Systems Second Edition, 2020. AR-17

affected by Logan Airport operations are also defined as environmental justice populations pursuant to Massachusetts law.² The final permit must do better to discuss environmental justice issues and compliance. The draft NPDES permit contains more than 250 pages and has approximately one page devoted to environmental justice.³ The draft permit acknowledges impacts of the permitted activity on environmental justice populations⁴ yet limits any requirements to improving outreach regarding the draft permit.

The NPDES permit is issued by U.S. Environmental Protection Agency (EPA) and incorporated into the state permit issued separately by the Massachusetts Department of Environmental Protection (MassDEP). Because of the incorporation of the NPDES permit into the MassDEP issued permit, the environmental justice analysis should have addressed the Commonwealth's environmental justice requirements and standards, including by using the new state definition of environmental justice and discussing how the draft permit accounts for the cumulative impacts of other polluting facilities in the area.⁵ CLF recommends that the final NPDES permit include a detailed discussion of the cumulative impacts of the discharges and add a requirement for Massport (Permittee), EPA, and/or MassDEP to provide annual meetings to the community explaining how Massport is complying with the federal and state permits and to discuss resident questions and concerns.

1 EXEC ORDER No. 14008, § 220, 86 Fed. Reg. 7619 (Jan. 27, 2021).

2 St. 2021, c. 8, §§ 56-60.

3 AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM, Draft Permit MA0000787, (2021), 75, <https://www.epa.gov/sites/production/files/2021-04/documents/draftma0000787permit.pdf>.

4 *Id.*

5 St. 2021, c. 8, § 102C, <https://malegislature.gov/Laws/SessionLaws/Acts/2021/Chapter8>.

Response to Comment C.1

Executive Order 12898 is not a statute and, therefore, does not provide EPA with additional authority beyond that granted to EPA by the CWA. Rather, EPA is required to implement Executive Order 12898 “consistent with, and to the extent permitted by, existing law.” Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Executive Order 12898, 59 Fed. Reg. 7629 (Feb. 16, 1994), § 6-608. Thus, Executive Order 12898 gives EPA and all federal agencies discretion to determine how best to implement its mandate within the confines of existing law, which here consists principally of the CWA.

EPA evaluated the impact of reissuing this NPDES permit in relation to the status of and potential impacts on the designated uses of the receiving waters. As such, proposed conditions in the permit focus on technology-based effluent limitations (both numeric and non-numeric, and requirements such as control measures, including a Stormwater Pollution Prevention Plan (SWPPP) and water quality impacts (including numeric limitations and narrative requirements) to the designated uses of the receiving waters.

Given the knowledge gap in assessing the overall environmental and public health impacts from these and other facilities in the area with NPDES permits (Global, Irving and other oil terminals,

GenOn Power Station, etc), EPA is engaged in a process that will take a broader view of cumulative impacts and intends to engage with community members to address concerns raised on these permits. EPA's regional contact for this effort is Kristi Rea (rea.kristi@epa.gov, 617 918-1595).

EPA has concluded that exercising its discretion to extend the breadth and depth of its environmental justice analysis is warranted in this instance. Doing so will facilitate environmental planning and allow the public and policy makers to establish priorities aimed at reducing the impacts that multiple environmental stressors have historically had, and continue to have, on burdened communities. While EPA has authority to undertake such an analysis in the context of NPDES permit proceedings, how to sequence that assessment in relation to NPDES permit reissuance is a separate question. Because the reissuance of the NPDES permit will indisputably yield many positive water quality improvements from the current permit requirements, EPA has concluded that permit issuance should not be delayed pending more extensive analysis of environmental impacts on communities with environmental justice concerns, because local residents deserve immediate water quality improvements. EPA has the authority to draft new permit conditions based on new information and/or to address new information in the next round of permit issuance. Insofar as this process yields "new information" within the meaning of NPDES regulations governing permit modification at 40 CFR § 122.62(a)(2), EPA may reopen and modify the permit for "cause." The "new information" will in any event inform permit development upon reissuance after expiration of its 5-year term. Beyond its direct, near-term regulatory impact, EPA's proposed cumulative impacts study will form the basis of a dialogue among EPA, the Commonwealth of Massachusetts, municipalities, non-governmental organizations, and the public on the public policy implications of situating pollution-generating industries in underserved and overburdened communities.

Of the many environmental stressors burdening these communities, the CWA discharges constitute a comparatively minor part. As noted above, EPA is engaging in a process that will take a broader view of the cumulative impacts on residents in the surrounding area. Beyond its direct, near-term regulatory impact, this separate effort will form the basis of a dialogue among EPA, the Commonwealth, municipalities, nonprofit organizations, and the public about policy implications of situating pollution-generating industries in underserved and overburdened communities. Finally, EPA continues to improve transparency and accessibility of information related to its programs to the public, including access to compliance and monitoring data from NPDES Permittees through its Enforcement and Compliance History Online (ECHO) portal. See Response to Comment C.2.

Finally, EPA understands the community's concerns about compliance and the need for transparency and engagement. However, EPA does not believe inserting an annual meeting is an appropriate permit condition. As discussed in response C.2, EPA expects to conduct more frequent inspections, which will provide the public with important information about compliance. The ECHO database, also discussed in C.2, allows access to comprehensive compliance data on demand. In addition, recognizing the strong interest in this facility, EPA is willing to host meetings with NGOs and/or broader community meetings, as events warrant, and to invite MassPort to participate where that would be helpful. We believe these steps serve the interest of creating more transparency and engagement around compliance at the facility.

Comment C.2. The final NPDES permit must increase the opportunity for the public to learn about permit compliance on an annual basis.

Improved public access to the discharge water quality data, discharge monitoring reports (DMRs), and stormwater pollution prevention plan (SWPPP) is also necessary to make progress towards environmental justice. Data on the chemical characteristics of effluent discharges is currently submitted by the Permittee to NetDMR, which is a critical tool for regulators to access data and determine compliance. It is an important component of environmental justice for the surrounding communities to have access to important information to be able to meaningfully participate in the implementation and enforcement of these permits. The Permittee should be required to annually release a narrative and data description of the water quality data collected that year. This document should provide an explanation on exceedances and missing data.

The last NPDES permit issued to Massport for Logan Airport dates to 2007.¹ Since then, fourteen years have passed, during which a major oil spill occurred.² The Clean Water Act specifies that NPDES permits may not be issued for a term longer than five years. Permittees that wish to continue discharging beyond the five year term must submit a complete application for permit renewal at least 180 days prior to the expiration date of their permit. Here, EPA did not act on Massport's application and the Permittee continued to operate under the 2007 permit. In the future, CLF requests that NPDES permits be attended to more quickly. Moreover, permits for locations like Logan Airport, an international airport located adjacent to environmental justice populations, should be given priority for review and reissuance. NPDES permit renewals for facilities in environmental justice populations where there has been at least one permit violation should be further prioritized for review and completion. This practice should apply to all facilities and not just Logan Airport.

The towns and neighborhoods adjacent and downstream from Logan Airport, including Chelsea, Revere, East Boston, and many more, are host to environmental justice populations that often pay for the price of pollution at a disproportionate rate. These communities suffered the deadliest spread of COVID-19 and some of the highest mortality in the Commonwealth.³ These communities are at the receiving end of environmental pollution on land and in the water. Through the issuance of the Logan Airport NPDES permit, the EPA and MassDEP have the opportunity to make a real difference in the lives and livelihoods of these communities. We urge you to implement the necessary standards to protect the public health of our Commonwealth, especially residents adjacent to Logan Airport.

1 U.S. EPA, MASSPORT LOGAN AIRPORT COMMUNITY INFORMATION SHEET, (2021), <https://www3.epa.gov/region1/npdes/logan/pdfs/2021/logan-info-sheet.pdf>.

2 John Lynds, *Clammers Suing over Jet Fuel Spill*, EASTIE TIMES, Oct. 11, 2013, <http://eastietimes.com/2013/10/11/clammers-suing-over-jet-fuel-spill/>.

3 East Boston has some of the highest COVID-19 positivity rates relative to other Boston neighborhoods. BOSTON PUBLIC HEALTH COMMISSION <https://www.bphc.org/onlinenewsroom/Blog/Lists/Posts/Post.aspx?ID=1282> (last visited Feb. 15, 2021).

Response to Comment C.2

The NPDES Permit was last issued to Massport to Logan International Airport in 2007 and expired five years later in 2012. Since Massport reapplied for permit coverage prior to expiration and its application was deemed complete by EPA's letter dated April 25, 2012, the 2007 Permit was administratively continued pursuant to 40 C.F.R §122.6. During the permit drafting process, EPA requested and received additional information from Massport which is reflected in the permit record and the Final Permit. EPA will continue to examine its permit issuance and prioritization practices.

Although EPA strives to reissue NPDES Permits in a timely manner, there are certain complex permits that require significant technical, legal, and biological support that unavoidably result in delays in the issuance process. Massport Logan is one such NPDES permit. In general, EPA has committed to improve the timeliness of our NPDES permit issuance and reduce the backlog of expired permits.

The comment raises the importance of access to information and the public's role in the implementation and enforcement of the permit. The comment also requests that the Permittee be required to develop an annual water quality data report and explain any exceedances and/or missing data.

As a major facility and as a facility located in communities with Environmental Justice concerns, EPA expects that the Facility will be inspected more frequently in the future, which will enable EPA to routinely verify the accuracy of information submitted by the Permittee and the adequacy of sampling and monitoring conducted. See "Strengthening Enforcement in Communities with Environmental Justice Concerns," EPA Office of Enforcement and Compliance Assurance (April 30, 2021) (AR-19). These efforts will also help to assess compliance with the permit.

The public has several options to access DMRs and other reports associated with this permit and its SWPPP. One can access the Enforcement and Compliance History Online (ECHO) database which includes effluent monitoring (DMR) data as well as information from other EPA programs including the Clean Air Act (CAA) and the Resource Conservation and Recovery Act (RCRA) among others. In addition, Massport maintains environmental data and compliance information on its website, including Discharge Monitoring Report (DMR) data from 2015 to the present.¹² EPA would be available to discuss any information provided in Massport's DMR submittals.

The Enforcement and Compliance Online (ECHO) system is an integrated compliance tool that compiles electronic monitoring data to be accessed by the public.¹³ As a result of electronic reporting, the public, including organizations like EDGI, can access new tools and data download capabilities (including in .csv format) to assist with data analysis. For example, the "Effluent Limitations Exceedances Search" identifies exceedances of NPDES permit effluent

¹² <https://www.massport.com/massport/business/capital-improvements/sustainability/water-quality/>

¹³ Available at: <https://echo.epa.gov/>. See also <https://echo.epa.gov/resources/general-info/learn-more-about-echo>.

limits based on discharge monitoring reports (DMRs).¹⁴ The public can search for effluent limitations exceedances by geographic area, pollutant, industry, or facility and download effluent data. The public can also access data on the ECHO database's homepage, by entering an NPDES Permit Number in the "Facility Id" search field and selecting "View Effluent Charts" under the column labeled "Reports" in the results and selecting "Download All Data" on the Effluent Charts page. EPA recently added a new tool, called "ECHO Notify," that allows members of the public to sign up to receive automatic email notifications of new monitoring results for particular facilities or within specific geographic areas.¹⁵ ECHO has tutorials on its website detailing how to conduct searches, how to sign up for ECHO Notify, and how to use other data exploration techniques.¹⁶ In addition to tutorials, the ECHO database offers additional training webinars on some of its advanced features.¹⁷ The most recent advanced training webinar for ECHO was offered on August 10, 2021; this recording is archived on the website,¹⁸ in addition to those that were conducted in the past. In addition to tools that allow the public to explore and evaluate effluent data, the ECHO NPDES Monitoring Data Download tool¹⁹ enables the public to download DMR data as an Excel or CSV file.

Comment C.3. The final NPDES permit should include more stringent limits and monitoring requirements that are necessary to protect our Commonwealth.

CLF is concerned about certain effluent standards proposed, specifically those that pertain to fecal coliform, per- and polyfluoroalkyl substances (PFAS), benzene, and total suspended solids.

Comment C.3.1 Fecal Coliform

Levels of fecal coliform reported from Outfalls 001, 003, and 004 appear to be high and growing in the most recent reporting periods.¹ We are interested in why those discharge levels have been so high and would appreciate an explanation from Massport as well as the relevant authorities. Fecal coliform limits are important to reduce effluent bacterial levels to safeguard the environment and human health and comply with the existing total maximum daily load (TMDL). Although effluent limits are set for 01A, no limits are set for outfalls 02A, 03A, and 04A because there are no shellfishing areas nearby. Bacteria sampling over the prior permit term clearly illustrates numerous exceedances of the applicable water quality standards and high levels of fecal coliform. Therefore, we request that EPA set the same fecal coliform limits for these outfalls as for the other outfalls in the permit. We recommend lowering of the fecal coliform limits below the proposed 88 colony forming units (CFU) per 100 ml, and including a more stringent limit of no more than five percent of the samples (instead of ten percent) exceed 260 cfu per 100/ml.

¹ U.S. EPA, DRAFT NPDES PERMIT NO. MA0000787, (2021), Attachment A, 1-61, <https://www.epa.gov/sites/production/files/2021-04/documents/draftma0000787permit.pdf>.

¹⁴ Available at: <https://echo.epa.gov/trends/loading-tool/effluent-exceedances-search>.

¹⁵ Available at: <https://echo.epa.gov/tools/echo-notify>.

¹⁶ Available at: <https://echo.epa.gov/help/tutorials>.

¹⁷ Available at: <https://echo.epa.gov/help/training>.

¹⁸ Available at: <https://echo.epa.gov/help/training>.

¹⁹ Available at: <https://echo.epa.gov/trends/loading-tool/get-data/monitoring-data-download>.

Response to Comment C.3.1

As EPA explains in the Fact Sheet and in Response to Comment A.1, monitoring data indicate that Massport's discharges at Outfalls 001, 002, 003, and 004 are frequently well above water quality standards (WQS) for bacteria and have the potential to cause or contribute to an exceedance of water quality standards in segments of Boston Harbor watershed already impaired for pathogens. Whatever the source of bacteria, the Permittee is ultimately responsible for what is discharged from its outfalls. That Massport has not, to date, identified an obvious source of the high levels of bacteria in the discharge does not obviate the need for permit conditions that ensure that the discharge will not cause or contribute to an excursion from Massachusetts WQS.

Massachusetts surface water quality standards specify that fecal coliform is the appropriate indicator bacteria for protection of shellfishing as a designated use while *Enterococcus* is the appropriate indicator for protection of primary and secondary contact recreation uses. 314 CMR 4.05(4)(b)(4) and 314 CMR 4.05(5)(f)(2). (AR-2) *See also* Fact Sheet p. 42. The Draft Permit proposed fecal coliform limits for Outfall 001 because this outfall discharges to an area (Winthrop Bay – Class SB) that has conditionally restricted shellfish beds. *See* Fact Sheet p. 42. The Draft Permit proposed reporting fecal coliform values for discharges to Outfalls 002, 003, and 004 because the receiving water (Boston Inner Harbor – Class SB(CSO)) does not have conditionally restricted shellfishing areas. *See* Fact Sheet p. 43. The Draft Permit proposed *Enterococcus* limits for all outfalls based on water quality standards for recreational uses.

The comment requests that fecal coliform limits be established at all outfalls based on the high levels of fecal coliform observed. The comment also requests lowering the fecal coliform limits below 88 cfu/100 mL and including a limit that no more than 5 percent of samples exceed 260 cfu/100 mL. In response to this comment, EPA reviewed the proposed bacteria limits at each outfall. Massachusetts surface water quality standards for Class SB waters specify that waters designated for shellfishing shall not exceed a fecal coliform median or geometric mean MPN of 88 organisms per 100 mL, nor shall more than 10% of the samples exceed an MPN of 260 per 100 mL or other values of equivalent protection based on sampling and analytical methods used by the Massachusetts Division of Marine Fisheries and approved by the National Shellfish Sanitation Program. 314 CMR 4.05(4)(b)(4). The numeric fecal coliform limits proposed in the Draft Permit are based on these water quality standards. The comment offers no scientific or regulatory basis for lowering the fecal coliform limits and, for this reason, the Final Permit retains the numeric limits based on water quality standards applicable to the receiving water.

Finally, the water quality standards for fecal coliform at 314 CMR 4.05(4)(b)(4) apply to waters designated for shellfishing. Boston Inner Harbor is designated by the Massachusetts Division of Marine Fisheries for shellfishing (as GBH4: Boston Inner Harbor), although shellfishing is currently prohibited.²⁰ However, the Final Pathogen TMDL for Boston Harbor specifies *Enterococcus* as the wasteload allocation indicator bacteria for Class SB/CSO segments. *See* AR-1 p. 79 (Table 7-1). Fecal coliform has occasionally been faulted including counts of non-fecal sources (e.g., *Klebsiella*) and thus not being a good indicator of fecal contamination. *See*

²⁰ <http://www.massmarinesfisheries.net/shellfish/dsga/GBH4.pdf>

AR-20²¹, AR-21²², AR-22²³. *See also* Comment A.1. EPA expects that the action taken by the Permittee to comply with the *Enterococcus* limits in the Final Permit will also control fecal coliform and the monitoring requirements will enable EPA and MassDEP to ensure that fecal coliform is maintained at levels necessary to achieve water quality standards.

The Final Permit retains the proposed numeric bacteria limits for fecal coliform at Outfall 001 and *Enterococcus* limits at Outfalls 001, 002, 003, and 004. EPA updated the maximum daily limit for *Enterococcus* to align with the recent update to Massachusetts surface water quality standards. *See also* Response to Comment A.1.

Comment C.3.2 PFAS

We are encouraged that EPA and Massport have committed to studying PFAS concentrations in the waters adjacent to Logan Airport.¹ The draft NPDES permit requires testing once per quarter of six PFAS chemicals: Perfluorohexanesulfonic acid; Perfluoroheptanoic acid; Perfluorononanoic acid; Perfluorooctanesulfonic acid; Perfluorooctanoic acid; and Perfluorodecanoic acid.² The draft NPDES permit suggests that after one year of monitoring, if all samples are non-detect for all six PFAS compounds, then the Permittee may request to remove the requirement for PFAS monitoring.³ If one year of sampling results in non-detect for all six PFAS compounds, CLF recommends reducing the monitoring frequency to twice per year, but not complete removal of PFAS monitoring upon request. If any of the monitoring detects any of the six PFAS compounds, we urge that the sampling frequency be increased to provide sufficient data to set permit limits in the subsequent permits.

In addition to PFAS monitoring, we urge the permit to include requirements that limit future PFAS use and investigate legacy PFAS use. We refer you to the plan put in place at the Jackson Hole Airport in Jackson, Wyoming as a model for monitoring and mitigation activities for PFAS contamination in water.⁴ The Jackson Hole Airport limits future use of firefighting foam containing PFAS by: eliminating the need to discharge foam for training exercises; using a “no foam” system to eliminate any discharge of PFAS-containing firefighting foam for aircraft rescue and firefighting vehicle equipment calibration; transitioning from a C8 to C6 foam, which has a shorter chain compound with a lower potential for toxicity and bioaccumulation; and changing post-emergency response plans to ensure timely containment, collection, and proper disposal of fire-fighting foam containing PFAS used during an emergency.⁵ We recommend similar processes be integrated into the Logan Airport final NPDES permit.

¹ AUTHORIZATION TO DISCHARGE UNDER THE NPDES, Draft Permit MA0000787, (2021), 9, 14, <https://www.epa.gov/sites/production/files/2021-04/documents/draftma0000787permit.pdf>.

² *Id.* at 5.

³ *Id.* at 5, footnote 12.

⁴ JACKSON HOLE AIRPORT PFAS INVESTIGATION PLAN, (2020), <https://www.jacksonholeairport.com/wp-content/uploads/2020/06/Investigation-Plan-Final.pdf>.

⁵ *Id.*

²¹ EPA National Recommended Water Quality Criteria

²² Wade et al 2003

²³ Caplenas 1984

Response to Comment C.3.2

Since WQS for PFAS have yet to be established, EPA has determined that information gathering is appropriate at this time with respect to PFAS compounds for NPDES discharges which have known or suspected PFAS compounds present. Also see Response A.3.

The Draft Permit proposed quarterly PFAS monitoring. The comment requests that EPA increase monitoring frequency if PFAS are detected in order to provide sufficient data to set limits in future permits. EPA maintains that quarterly PFAS monitoring is sufficient to assess the PFAS levels in the facility's discharges and to determine whether effluent limits are warranted in future permits to meet water quality standards and protect designated uses. Quarterly monitoring over the 5-year permit term will result in a minimum of 20 PFAS sampling events, which, in this case, EPA expects will be a sufficient number of samples to characterize the long-term average and variability necessary for decision making in future permitting. *See* AR-13 pp. 62-64. If EPA determines that reported levels of PFAS analytes warrant additional sampling, EPA has several options to learn more about any PFAS stormwater discharges. EPA could seek additional information from the permittee through a CWA section 308 information request. EPA could also propose to increase monitoring frequency through a minor permit modification (see 40 CFR § 122.64(b)). For these reasons, EPA is retaining the quarterly sampling requirement and at the next permit issuance will assess whether ongoing monitoring or numeric permit limits are warranted, after consideration of any water quality criteria that have been developed by EPA and approved by the State of Massachusetts.

Based upon a review of PFAS monitoring from this and other facilities received by EPA over this upcoming permit cycle, EPA will determine whether to grant any such sampling elimination requests. Since Massport's permit includes PFAS monitoring for several outfalls, EPA will consider all sampling results before deciding on whether to eliminate any individual outfall sampling requirements.

Also as noted in Response A.3, Massport no longer uses AFFF at its fire training facility and the Department of Defense is in the process of formulating fluorine-free replacements for AFFF compounds. Although Massport's Fire Department conducts fire training exercises that may at times use AFFF, EPA understands that these exercises incorporate a testing system which does not result in the discharge of AFFF.

Comment C.3.3 Benzene

We support continued monitoring for benzene at Outfall 001 and recommend implementing a limit of 5 µg/l level. The current NPDES permit includes such a limit. Just because the Permittee is meeting this limit does not mean the limit should be removed. Further, the Clean Water Act prohibits permits from having less stringent effluent limitations than the previous permit.¹ Section 402(o)(3) of the Clean Water Act (CWA) specially provides an absolute limitation on backsliding:

This section of the CWA prohibits the relaxation of effluent limitations in all cases if the revised effluent limitations would result in a violation of applicable effluent guidelines or water quality standards, including antidegradation requirements. Thus, even if one or more of the backsliding exceptions outlined in the statute is applicable and met, CWA section 402(o)(3) acts as a floor and restricts the extent to which effluent limitations may be relaxed. The requirement affirms existing provisions of the CWA that require effluent limitations, standards, and conditions to ensure compliance with applicable technology and water quality standards.²

CLF is concerned about the possibility of undetected benzene discharges. The proposed permit would eliminate benzene monitoring from Outfalls 002, 003, 004.³ While maintaining monitoring at Outfall 001, the permit still would not cap discharges to a reasonable limit. To prevent backsliding, the final NPDES permit should include a limit of 5 µg/l and monthly monitoring of benzene at Outfall 01A.

1 33 U.S.C. § 1342(o).

2 U.S. ENVTL. PROT. AGENCY, *NPDES Permit Writers' Manual*, at 7-4 (Sept. 2010), https://www3.epa.gov/npdes/pubs/pwm_chapt_07.pdf.

3 AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM, Draft Permit MA0000787, (2021), 45, <https://www.epa.gov/sites/production/files/2021-04/documents/draftma0000787permit.pdf>.

Response to Comment C.3.3

As noted in the Fact Sheet, since most monitoring for benzene resulted in non-detect readings, EPA eliminated benzene monitoring at Outfalls 002, 003, and 004 in the draft permit as there is no reasonable potential to exceed 5 µg/l, even without consideration of dilution available at these outfalls. The commenter is incorrect that the current permit contains a benzene limit of 5 µg/l. The 2007 Permit contained only monitoring requirements for benzene and monitor only requirements are not subject to the antibacksliding requirements.

For Outfall 001, the Final Permit retains the monitoring requirement for benzene, since flows from the fuel farm discharges from Outfalls 01D and 01E flow through to Outfall 01A. During the next permit term, EPA will determine whether the benzene monitoring results at Outfalls 01A, 01D and 01E have the reasonable potential to cause or contribute to WQS violations and if warranted, a benzene limit could be established at that time.

Comment C.3.4 Total suspended solids (TSS)

The final NPDES permit should require additional pollution control measures at outfall 03A to eliminate TSS exceedances. TSS levels at Outfall 003 have exceeded 100 mg/L on multiple occasions in both wet and dry conditions during the five-year period from April 2015 to April 2020. Monitoring locations of Outfall 003 are representative of the contribution of the Permittee and excludes any contribution from East Boston stormwater. The data clearly demonstrate that the maximum daily TSS limit of 100 mg/L cannot be achieved with the existing best management practices without additional technology or process changes. CLF requests that the final NPDES permit require the Permittee to evaluate the selection, design, installation, and

implementation of stormwater pollutant control measures and implement changes to reduce the level of TSS below the permit limit.

Response to Comment C.3.4

Under Section 301 of the CWA, “the discharge of any pollutant by any person shall be unlawful,” unless in compliance with, among other things, a NPDES Permit issued pursuant to Section 402 of the Act. In this action, EPA is re-issuing a permit under the NPDES program that authorizes the facility to discharge certain pollutants subject to particular limits and conditions. Under the Final Permit, discharges from the facility must meet the numeric limits and other requirements derived in accordance with the CWA and the Massachusetts Surface Water Quality Standards. The Final Permit establishes a technology-based daily maximum limit of 100 mg/L at Outfall 03A, as explained in the Fact Sheet (p. 37). EPA expects that the maximum daily limit can be achieved with the use of BMPs similar to those used at Outfalls 04A and 05A, where TSS concentrations are routinely below 100 mg/L. During the next permit reissuance, EPA may need to refine or improve existing controls or require the installation of new controls at Outfall 03A in order to meet the TSS limit. However, the Final Permit does not establish additional pollution control measures for Outfall 03A because any violation of this limit will subject Massport to potential enforcement action. *See* Final Permit Part II.A.1.

Comment C.3.5 Eutrophication

CLF requests that the permit include a requirement to test downstream water for eutrophication. Such tests would be invaluable in identifying any monitoring gaps at the outflows, understanding discharges in their broader effluent context, and, ultimately, protecting the communities downstream from the airport, which include environmental justice populations.

Response to Comment C.3.5

There are no listed impairments for eutrophication or nutrients in any of the three receiving waters that receive discharges from the airport. EPA does not have effluent data from the airport for nutrients such as phosphorus and nitrogen. At this time, EPA does not have a basis to require the permittee to test or monitor for nutrients or other eutrophication indicators. It is not clear what the commenter means by “downstream water,” but may be referring to areas including Winthrop, South Boston and adjacent coastal communities. To the extent that there are eutrophication issues up or down the coast from Massport, there are CSO abatement measures and TMDLs in place in upstream waterbodies, including the Mystic and Charles Rivers, to address nutrient sources that contribute to eutrophication. At this time, Massport’s discharges have not been determined to cause or contribute to any eutrophication concerns in the receiving waters. However, the permit’s TSS limits and BMPs will provide control of nutrients that are in the solids fraction of the discharge.

Comment C.4. Public Hearing Comment from Staci Rubin

The following comment was provided during the public hearing conducted on May 24, 2021:

My name is Staci Rubin. I am an attorney with the Conservation Law Foundation. Thank you for holding this public hearing tonight. I will be submitting written comments. I just wanted to acknowledge and support the comments of John Walkey from Green Roots. I will provide some more details in writing.

One point I wanted to note is that the Draft Permit seems to have a section, a limited section on environmental justice referencing the federal Executive Order 12898. There doesn't seem to be a reference to the state of Massachusetts environmental justice requirements. As Mr. Walkey said very well, Massport is located in an area that has implications for multiple environmental justice communities. So, I think it's important for the permit documents to reflect the environmental justice requirements both at the federal and state level. And with that, our team is still reviewing the permit conditions, including whether we want to recommend that there be additional sampling and more frequent monitoring requirements.

Response to Comment C.4

See Response C.1.

D. Comments from Patrick Herron of the Mystic River Watershed Association**Comment D.1.**

MyRWA considers this permit particularly important due to the impaired state of Boston Harbor and Winthrop Bay, to the large size of the facility and the numerous outfalls, and to the fact that several of the bordering communities are environmental justice communities. The pollution reduction that will be derived from the permit conditions is so important to protecting the health of the communities and the health of the environment. We respectfully request that EPA prioritize the review of the data for the facility and draft a new the permit for this facility at the 5-year expiration date and not administratively continue the permit or delay the draft. The last permit for this facility was issued in 2007, nearly 3 times the length of time of the original permit. This delay decreases the frequency of amending the permit conditions to more rapidly decrease the sources of pollution to these impaired waterways. MassDEP and USEPA should prioritize the review and renewal of NPDES permits that are in areas adjacent to environmental justice populations.

MyRWA requests that EPA consider the following recommendations to further improve the efficacy of the NPDES permit under review.

Response to Comment D.1

Regarding EJ, see Response C.1. See Response C.2 regarding the delay in permit issuance.

Comment D.2. Set Effluent Limits for Fecal Coliform for all outfalls.

Fecal Coliform limits are important to reduce effluent bacterial levels to safeguard the environment and human health and comply with the existing TMDL. Although Effluent Limits are set for 01A, no Limits are set for outfalls 02A, 03A, and 04A because there are no shellfishing areas nearby. However, bacteria sampling over the prior permit term clearly illustrates numerous exceedances of the applicable water quality standards and high levels of Fecal Coliform. Therefore, we request that EPA set the same Fecal Coliform Limits for these outfalls as for the other outfalls in the permit. Additionally, the permit should require that the outfalls with Fecal Coliform exceedances should be investigated and solutions implemented within the next three years of the permit.

Response to Comment D.2

See Responses A.1 and C.3.1.

Comment D.3. Increase the duration of PFAS sampling.

We commend the EPA for requiring testing for PFAS because of their potential for harm and their long persistence in the environment. However, we request that EPA require a higher number of sampling events, e.g. 8 events, with a non-detect result before removing the requirement for PFAS monitoring. In addition, if any PFAS are detected, we ask that the sampling frequency be increased to provide sufficient data to set limits in the next permit.

Response to Comment D.3

EPA recently initiated the policy of requiring sampling for PFAS compounds as explained in Section 5.1.10 of the Fact Sheet. NPDES permits must specify the monitoring type, intervals, and frequency sufficient to yield data that are representative of the activity. The monitoring requirements in the permits have been established to yield data representative of the Facility's discharges in accordance with CWA Sections 308(a) and 402(a)(2) and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i), and 122.48. *See* Fact Sheet p. 11. Monitoring is performed to determine compliance with effluent limitations established in NPDES permits, establish a basis for enforcement actions, assess treatment efficiency, characterize effluents, and characterize receiving water. EPA considered the frequency and number of samples required prior to allowing a permittee to request an elimination of such testing and determined that a minimum of 4 quarterly samples was warranted, all of which would be required to show a non-detect result for all 6 PFAS compounds before a request could be entertained for eliminating any further monitoring. Based upon a review of PFAS monitoring from this and other facilities received by EPA over this upcoming permit cycle, EPA will determine whether to grant any such sampling elimination requests. Since Massport's permit includes PFAS monitoring for several outfalls, EPA will consider all sampling results before deciding on whether to eliminate any individual outfall sampling requirements. The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility-specific basis.

Also see Responses A.3 and C.3.2.

Comment D.4. Require Permittee to implement additional pollution control measures at outfall 03A to eliminate TSS exceedances.

TSS levels at Outfall 003 have exceeded 100 mg/L on multiple occasions in both wet and dry conditions during the 5 year period from April 2015 to April 2020. It is important to note that the monitoring locations of Outfall 003 are representative of the contribution of the Permittee and excludes any contribution from East Boston stormwater. The data clearly demonstrate that the maximum daily TSS limit of 100 mg/L *cannot* be achieved with the existing BMPs without additional technology or process changes. We request that the Draft Permit requires the Permittee to evaluate the selection, design, installation, and implementation of stormwater pollutant control measures and implement changes to reduce the level of TSS below the permit limit.

Response to Comment D.4

EPA addressed similar comments about TSS at Outfall 003 in Response C.3.4.

Comment D.5. Improved public access to the Discharge Water Quality Data, Discharge Monitoring Reports (DMRs), and Stormwater Pollution Prevention Plan (SWPPP).

Data on the chemical characteristics of effluent discharges is currently submitted by the permittee to NetDMR. This is a critical tool for regulators to access data and determine compliance. It is an important component of EJ for the surrounding communities to have access to important information to be able to meaningfully participate in the implementation and enforcement of these permits. MyRWA requests that as a requirement of the permit, the Permittee will annually release a narrative and data description of the water quality data collected that year. This document will provide an explanation on exceedances and missing data.

MyRWA requests that the SWPPP be submitted to EPA for approval, be made available electronically upon request, and that the DMRs also be made available electronically upon request. EPA could also make the SWPPP available to the public after consideration of whether any of its contents would be deemed confidential by the Permittees.

Response to Comment D.5

EPA addressed similar comments about accessibility of data in Response C.2.

EPA's standard practice is to require permittees to revise their existing SWPPPs as necessary after permit reissuance. Massport is required to revise its SWPPP within one year of the effective date of the permit to include any changes or additional elements required by the Final Permit. The permit already requires Massport to make its SWPPP available to EPA and MassDEP upon

request. EPA also requests that Massport include the revised SWPPP on its website, as other major airports do.

E. Comments from John Walkey of GreenRoots

Comment E.1. NPDES Process

We would first like to recognize the efforts that EPA and DEP have gone through to reach out and make the review process accessible under the challenging pandemic conditions. The permitting agencies kindly held a meeting for advocates in April prior to the formal start of the public process. The community presentation prior to the formal hearing, the provision of simultaneous interpretation in multiple languages, and the extension of the comment period are all duly noted and greatly appreciated.

That being said, the material itself is definitely challenging for a lay audience and the level of community participation in the proceedings was limited most likely by a lack of knowledge or understanding of the importance of these permits and their function, by those most likely to be impacted by them. Indeed in the May 10th community meeting for this permit, of the 42 participants, the overwhelming majority was composed of EPA and DEP staff, and interpreters, and I believe I was the only person who had questions for the presenters. Rather than a lack of interest it is more likely a lack of awareness or understanding of the permitting process and its impact on the waters surrounding East Boston which are so heavily used and enjoyed by the residents.

A second point regarding the NPDES process is the time lag since the permit for Logan was last issued. While NPDES permits are to be issued every 5 years, a period of 14 years have passed since the last Logan permits were issued in 2007. It is understood that the numbers of permits to be reviewed exceed the resources available to perform them and timelines slip. However, in this case it is fairly extreme given that the airport has expanded its operations and has undergone much construction in the interregnum, not to mention that there was also a serious fuel spill on the runway in 2010 that resulted in a court case.

We would request, given the inevitable backlog of NPDES applicants in the queue, that the permitting agencies should consider prioritizing permits that have passed their 5-year renewal time frame that are also located in environmental justice communities. Essentially of the list of permits that have passed the 5-year mark, those that are in environmental justice communities should go to the head of the line for review.

Response to Comment E.1

EPA agrees that there is considerable technical and legal content in this permit and all NPDES permits. However, there is considerable background material in the Fact Sheet which describes the basis for all permit limits and conditions. In addition, there was a 2-page summary and presentation made available for the public comment period that explained the draft permit and permitting process and there was ample time and opportunity for any interested party to ask questions during the public meeting and public hearings that were conducted. The permit writer's

contact information was also made available in the draft permit to be contacted at any time regarding any questions on the draft permit, the permit proceedings, or other related matters. EPA publicized the public meeting and public hearing through several channels, including posting relevant information on EPA's website, sharing on EPA's Twitter account, and emailing and calling community groups and Congressional representatives. EPA will continue to promote and facilitate meaningful involvement in its permit proceedings.

Regarding the delay in reissuing this permit and prioritization of permits that authorize discharges in EJ communities, see Response C.2.

Comment E.2. Massport NPDES Permit MA0000787

Additionally, it was brought to our attention that the current NPDES permit is not the only permit for Logan Airport. In addition to NPDES Permit MA0000787, Massport holds a separate NPDES permit for the Fire Training Facility -- NPDES Permit MA0032751, which went through its public notice period last summer (2020) and was issued earlier this year. We would also request in the interest of efficiency and transparency to have these two permits (and any others for Logan of which we may be unaware) reviewed together in a similar fashion to the permits for the oil terminals on Chelsea Creek. This would provide a more holistic and complete view of the cumulative effects of the various outfalls from the landmass of Logan Airport and would obviate the need for community members and advocates to sit through additional meetings for the same property.

Response to Comment E.2

EPA agrees with the commenter and will consider proposing these two NPDES permits for Massport at the same time during the next permit reissuance cycle or even combining them into one permit.

Comment E.3. Bacteria

The bacteria levels at Logan outfalls, according to data that was presented at the May 10th Information Session, appear particularly high. Given that stormwater infrastructure on the property should not be tied into any of the residential area surrounding it, these levels are curious. The colonies of Enterococci detected at outfalls 001, 002, 003 and 004 during both wet and dry conditions frequently exceed the WQS by a large amount. Is the source of this purely animal waste on the airport property? This seems to be a major concern given the efforts at maintaining Boston Harbor free of bacterial contamination.

Response to Comment E.3

As EPA explains in the Fact Sheet and in Response to Comment A.1, monitoring data indicate that Massport's discharges at Outfalls 001, 002, 003, and 004 are frequently well above bacteria water quality standards and have the potential to cause or contribute to an exceedance of water quality standards in segments of Boston Harbor watershed already impaired for pathogens. Whatever the source of bacteria, the Permittee is ultimately responsible for what is discharged

from its outfalls. That Massport has not, to date, identified an obvious source of the high levels of bacteria in the discharge does not obviate the need for permit conditions that ensure that the discharge will not cause or contribute to an excursion from Massachusetts water quality standards. The Final Permit retains the proposed average monthly bacteria limits for fecal coliform and *Enterococcus*. EPA updated the maximum daily limit for *Enterococcus* to align with the recent update to Massachusetts surface water quality standards. See Response to Comment A.1.

Comment E.4. PFAS

The added focus given to per- and polyfluoroalkyl substances (PFAS) is appreciated. The extent of the impacts on and longevity in the environment is not entirely clear and is concerning.

Response to Comment E.4

EPA agrees that characterization of PFAS compounds from Massport outfalls is warranted and has included monitoring requirements for these compounds in the permit. Also see Responses A.3, C.3.2, and D.3.

Comment E.5. Public Awareness and Accessibility

Finally, we would like to comment on the need for improved public awareness of and access to the water quality data that is collected as part of the NPDES compliance program. As mentioned above the community's awareness of this program and the occurrence of exceedances of the permits is mostly non-existent. Given that the Commonwealth recently passed a law to "Promote Awareness of Sewage in Public Waters" and is now attempting to establish the notification procedures around CSOs when releases have occurred, it would make sense to consider how to improve the access to NPDES-related data through perhaps the same mechanisms.

The ECHO Database is probably a powerful tool in the hands of a cloistered few whose technical prowess has probably resulted in job offers from the oil industry. For the public it may as well be in Sanskrit. Even for those with the technical capacity to understand most of it, extracting useful data out of it is a frustrating chore. Perhaps better training materials would be helpful, or maybe a re-design of the interface, but something must be done to make this tool more useful to the general public.

Ultimately for the public to have faith in this system it must know that it has an impact on things on the ground. There have been permit violations in the past and corrective measures have occurred. The public is not aware of any of this. Clearly permit-holders do not want to advertise these events, but they could just as easily advertise how many quarters they have gone without any exceedances of their permits. We do feel that better publicizing the functioning of the NPDES permits, from catching a problem in the monitoring data, to the correction of that problem through enhanced BMPs and/or a fine to praising a clean track record of a facility is one way to demonstrate to the public that the system is working. Certainly community-based venues

such as the Mystic Steering Committee, MyRWA and GreenRoots are all possible options for partnering on such an effort.

Response to Comment E.5

See Response C.2.

Comment E.6. Public Hearing Comment from John Walkey

First off, my name is John Walkey. I live in East Boston and I work at Green Roots and serve on the board of Airport Impact Relief, a nonprofit group in East Boston that works with airport related issues. And I want to first thank you very much for extending the comment deadline until July. That'll be very handy. We do plan to submit written comments by that deadline.

Comment E.6.1 Timing of Reissuance

In regards to the permit, I think, at this point, the main concern that I would want to voice in this venue would be the 14 year hiatus since the last issuance of a NPDES permit for this facility, the airport. With the understanding that there's a backlog and there is more permits needed than there is staff capacity to get those things cranked out in the five year time frame. However, a 14 year hiatus, given the fact that three years after the last NPDES permit, there was a fuel spill incident at the airport, which resulted in losses that were, you know, resolved on their own. However, an event like that should be something that causes looking at these permits again.

In terms of as we're now a heightened awareness of environmental justice concerns, and trying to accommodate those issues, given the proximity of the airport to environmental justice communities, I would strongly recommend that, as a procedure, not just for this particular NPDES permit, but maybe, looking at the backlog of permits and prioritizing which should be bumped forward in the list. You might want to consider the proximity to environmental justice communities so that those that are well past the five year renewal time frame, and that are not in an environmental justice community, that maybe they be given less priority than someone who has gone past the five year time frame, but it definitely impacts an environmental justice community. That would be one way to take into consideration environmental justice in the process of a NPDES permit recognizing the limitations of trying to keep up with these things.

Response to Comment E.6.1

With regards to the delay in reissuing this permit, see Response E.1. For any matters that arise during the permit term, such as permit violations or other non-compliance, EPA's ECAD office should be contacted and would investigate such matters and take enforcement action as appropriate.

For the comment relative to environmental justice communities see Response C.1.

Comment E.6.2 PFAS

The only other comment I would make at this time was just, in looking at the -- we have now introduced -- I may screw up the exact name of it, but, for PFAS chemicals, and for the kinds of chemicals we are about in firefighting foams and things like that, that is now being accommodated into these permits, that there should be some specific procedural recommendations around how that should be monitored at the fire training facility outfall, which is specific, a specific area. I'm not entirely certain if that is in the permit at this point. But, the general map of -- there's five main outfalls and about 40 odd smaller stormwater outfalls that have airfield stormwater outfalls with some sort of treatment unit attached to it. If there could be a little bit of clarity in terms of what is being monitored at which one of these things, just so we have a spatial idea, because, such as that 2010 event, took place in one particular place on the airfield, we would want to know which of the result nearest outfall pipes are actually being monitored as part of the NPDES process so that we could use that data in tracking impacts of events on the airfields. Or the impacts of the events that happen on the airfield on the environment. And I think, at this time, I will reserve the rest of my comments into a written form.

Response to Comment E.6.2

See Responses A.3 and C.3.2, and D.3.