9. Water Quality

Massport routinely assesses its own and its tenants and users environmental performance at Logan Airport through regular water quality, stormwater, fuel use and storage, and soils monitoring, recordkeeping, and reporting. Massport is also continually developing, implementing, evaluating, and adapting to improve its existing policies and programs. This chapter reports on Massport's environmental programs at Logan Airport pertaining to environmental compliance and management with respect to water quality.

In addition to these topics, Massport implements Logan Airport's *Sustainability Management Plan* (SMP) and Massport's *Sustainability Design Guidelines* (SDGs), which must be used by architects, engineers, and planners when implementing new development projects. These are discussed in greater detail in Chapter 11, *Sustainability and Climate Resilience*. Massport also has compliance requirements regarding air quality; reporting and discussion on this program are provided in Chapter 8, *Air Quality and Greenhouse Gas Emissions*. Key findings and a progress summary for environmental compliance management for water quality in 2023 and 2024 are presented below.

Environmental Management Policy

"Massport is committed to operate all of its facilities in an environmentally sound and responsible manner. Massport will strive to minimize the impact of its operations on the environment through the continuous improvement of its environmental performance and the implementation of pollution prevention measures, both to the extent feasible and practicable in a manner that is consistent with Massport's overall mission and goals."

2023 Water Quality Key Findings

The following details key findings of water and stormwater quality management for the Airport in 2023:

- No water quality exceedances occurred in 2023.
- The **U.S. Environmental Protection Agency (U.S.EPA)** issued a new **National Pollutant Discharge Elimination System (NPDES)** Stormwater Permit for Logan Airport (NPDES Permit MA0000787) , which sets forth new water quality testing requirements and limitations.

- Massport closed three **Massachusetts Contingency Plan (MCP)** Sites.

2024 Water Quality Key Findings

The following details key findings of water and stormwater quality management for the Airport in 2024:

- Updated Massport SDGs were published in January 2025.
- to better address water quality protection and Airport **resiliency** to flooding events, an updated Massport *Floodproofing Design Guidelines* was published in January 2025.
- Four reportable spills of ten gallons or more occurred in 2024.
- In May 2024, Massport submitted the *Polyfluoroalkyl Substances (PFAS) Reduction Plan* to **Massachusetts Department of Environmental Protection (MassDEP)** for review and commentary.

9.1 Water Quality and Stormwater Management Overview

Massport's primary water quality goal is to prevent or minimize stormwater pollutant discharges to Boston Harbor that may be associated with Airport activities. Massport employs a multitude of programs that promote awareness of potential environmental compliance issues that could arise from Massport and its tenant's activities, which in turn support improved surface and groundwater quality. These Programs include implementing **best management practices (BMPs)** for pollution prevention and enforcing compliance by Massport operation departments, tenants, and contractors; providing training to Massport operation departments staff, tenants, and contractors; maintaining a comprehensive **Stormwater Pollution Prevention Plan (SWPPP)**; and reviewing project-specific construction SWPPPs.

9.1.1 NPDES Permits at Logan Airport

Massport holds two separate individual permits under the U.S.EPA and MassDEP NPDES Program as mandated by the **Clean Water Act (CWA)**. The NPDES permit covers Massport and its **co-permittees** at Logan Airport, establishing effluent limitations and monitoring requirements for discharges from specified **stormwater outfalls**. Massport has developed a SWPPP, which defines the NPDES Program stormwater discharge compliance requirements applicable to Logan Airport under these permits and sets forth a strategy and policies to meet those requirements. The SWPPP also addresses prevention of deicing and deicing chemicals, bacteria, fuel and oil, and other contaminants exposures to the environment and includes BMPs specific to industrial activities occurring on Logan Airport.

The two separate NPDES Permits Massport holds for Logan Airport are:

- An Individual NPDES Stormwater Permit for Logan Airport (NPDES Permit MA0000787); and
- An Individual NPDES Permit/Massachusetts Surface Water Discharge Permit for the Fire Training Facility located on Governor's Island (NPDES Permit MA0032751).

The following sections describe the requirements of these two permits and Massport's compliance with these requirements.[1] These permits can be reviewed using the following weblinks:

- https://www.epa.gov/npdes-permits/massport-logan-international-airport-npdes-permit;
- https://www.epa.gov/system/files/documents/2025-06/finalma0032751permit-2021.pdf; and
- https://www.epa.gov/system/files/documents/2025-06/finalma0032751permitminormod-2021.pdf.

9.1.1.1 Construction NPDES Permits

Massport requires contractors at Logan Airport to comply with the U.S.EPA *NPDES Construction General Permit (CGP) for Stormwater Discharges from Construction Activities* for all construction projects impacting one or more acres.[2] For smaller projects, Massport requires compliance with the Logan Airport SWPPP BMPs. Massport also requires every new development and construction project at Logan Airport to comply with Massport's updated SDGs.[3] Massport projects must meet or exceed the *Massachusetts Stormwater Management Handbook* requirements, and to the extent practicable, projects must also meet the minimum performance thresholds for **Leadership in Energy and Environmental Design (LEED®)**, **ParkSmart®**, or **Envision®** certification.[4]

9.2 Stormwater NPDES Permit Compliance

On July 31, 2007, U.S.EPA and MassDEP issued the Individual NPDES Stormwater Permit for Logan Airport, Permit No. MA0000787 (2007 NPDES Permit). This Permit remained in effect until November 1, 2023. On August 24, 2023, The U.S.EPA and MassDEP issued a new individual NPDES Stormwater Permit, Permit No. MA0000787 (2023 NPDES Permit) to Massport and co-permittees with an effective date of November 1, 2023.[5]

1 On April 12, 2021, the U.S.EPA issued a draft NPDES permit under the CWA for stormwater and wastewater discharges from Logan Airport, which regulates the discharge of pollutants to state waters, like Boston Harbor. This permit was initially finalized on August 24, 2023, and will update and replace the existing permit issued in 2007 when it becomes effective.

2 U.S.EPA.NPDES CGP for Stormwater Discharges from Construction Activities (as modified). 2022. https://www.epa.gov/system/files/documents/2025-04/2022-cgp-permit-as-modified.pdf.

3 Massport. Massport https://www.massport.com/sites/default/files/2025-01/2025-Massport-Sustainability-Design-Guidelines_FINAL.pdf

4 MassDEP. Massachusetts Stormwater Management Handbook. Updated February 2008. https://www.mass.gov/guides/massachusetts-stormwater-handbook-and-stormwater-standards

5 Most of the requirements became effective on November 1st, 2023, with a few requirements with unique conditions put into effect later on.

Figure 9-1 Logan Airport Outfalls

2023/2024 Environmental Data Report

Major Outfalls
Fire Training Facility
Airfield Stormwater Outfalls
Parking Facilities
Terminal Buildings
Outfall Drainage Area

0 600 1,200 2,400 Feet

The following sections describe stormwater outfalls, and the water quality monitoring requirements and results under the 2007 NPDES Permit for 2023 and the 2023 NPDES Permit for 2024. Section 9.2.2 summarizes the differences in compliance requirements between these two permits. more in-depth information is provided in the **User's Guide, Section U9.1**. Sampling and reporting protocols are also discussed further in the **User's Guide, Table U9-1**. The NPDES water quality monitoring results are also posted on Massport's website: https://www.massport.com/massport/business/capital-improvements/sustainability/water-quality/.

User's Guide Section U9.1

9.2.1 Stormwater NPDES Permitted Outfalls

The Logan Airport NPDES Permit No. MA0000787 regulates stormwater discharges from Logan Airport's stormwater outfalls, including the North, West, Northwest, Porter Street, Maverick Street, and airfield outfalls. Their drainage areas are shown in **Figure 9-1** and are described with associated acreages in **Table 9-2**. The North and West Outfalls have end-of-pipe pollution control facilities to remove debris, floating oil, and grease from stormwater before discharge into Boston Harbor.

Table 9-1 Stormwater Outfalls Subject to National Pollutant Discharge Elimination System (NPDES) Permit Requirements

Outfall Name and Number	Drainage Area (Acres)	Boston Harbor Discharge Location	Major Land Uses
North (Outfall 001)	152	Wood Island Bay	Terminal E, aprons, taxiways, cargo areas, fuel farms, and runways
West (Outfall 002)	449	Bird Island Flats	Taxiways, terminal areas, aprons, cargo areas, runways, and roadways
Porter Street (Outfall 003)	182	Bird Island Flats	Hangars, vehicle maintenance facilities, cargo areas, and car rental facilities
Maverick Street (Outfall 004)	34	Jeffries Cove	Car rental facilities, bus/limousine pools, and parking areas
Northwest (Outfall 005)	23	Wood Island Bay	Flight kitchens and bus maintenance facility
Airfield (Outfalls A1 through A44)	910	Inner Harbor	Runways, taxiways, perimeter roadways, Fire Training Facility, and Massport Fire and Rescue Station 2

Source: Massport, 2025.

9.2.2 NPDES SWPPP Compliance Requirements

The 2023 NPDES Permit carries forward effluent limitations, monitoring, and reporting requirements from the 2007 NPDES Permit, with different compliance requirements. These include changes in effluent limits, monitoring requirements for specific outfalls, and modifications in monitoring protocols, procedures, and reporting methods. Notable changes in requirements are summarized below:

- Separate sampling events during both wet weather conditions and dry weather conditions at all outfalls are no longer required. Instead, sampling occurs according to the prescribed monitoring frequency but may be influenced by wet or dry weather flows.
- Sampling 15 percent, or seven outfalls total, from among the set of airfield outfalls (Outfalls A1 – A44), is no longer required. Instead, three outfalls, Outfalls 006 (Perimeter A21), 007 (Perimeter A33), and 008 (Perimeter A8) have been established as permanent airfield monitoring locations for sampling intended to represent airfield runoff characteristics.
- New Effluent Limitations Established:
    - Numerical bacterial limits set for the first time for stormwater discharges from Outfalls 001 (North), 002 (West), 003 (Porter Street), and 004 (Maverick Street).
    - For Outfall 003 (Porter Street) and Outfall 005 (Northwest), a maximum daily limit was established for oil and grease where previously only reporting a detection was required.
    - For Outfall 003 (Porter Street) and Outfall 005 (Northwest), A maximum daily limit for total suspended solids (TSS) was established where previously only reporting was required.
    - For Outfall 003 (Porter Street), Total ammonia must now be included in quarterly sampling and detections reported, while benzene and surfactant sampling is no longer required.
    - For Outfalls 003 (Porter Street), 006 (Perimeter A21), 007 (Perimeter A33), and 008 (Perimeter A8), benzene sampling is no longer required; however the average monthly and maximum daily dissolved oxygen (DO) in mg/L must now be reported.
- Quarterly monitoring requirement set for six types of **per- and polyfluoroalkyl substances (PFAS)** for the permitted outfalls 001 through 005.
- Whole Effluent Toxicity (WET) testing is now required every quarter of the permit term for Outfalls 001 (North), 002 (West), and 004 (Maverick Street).
    - the 2007 NPDES Permit limited WET testing to two sampling events during a wet weather deicing episode, one in the first year and one in the third year of the permit cycle, for Outfalls 001 (North), 002 (West), and 003 (Porter Street).
- Deicing Episode Monitoring Modifications:
    - Ethylene glycol, total ammonia, and WET sampling and reporting are no longer required. However, maximum daily DO reporting is now a requirement.

- Monitoring is required monthly for Outfalls 001 (North) and 002 (West) instead of sampling twice within the deicing season, except for tolyltriazole, which is now sampled three times per season instead of twice, and nonylphenol, which is now sampled once per season instead of twice.
- Airfield Outfalls 006 (Perimeter A21), 007 (Perimeter A33), and 008 (Perimeter A8) are sampled quarterly for pH, oil and grease, TSS, and DO instead of 15 percent of the airfield outfalls twice during the season. Other analytes from the 2007 NPDES Permit are now sampled three times during the season instead of twice, except for nonylphenol, which is sampled once.
- for airfield Outfalls 006 (Perimeter A21), 007 (Perimeter A33), and 008 (Perimeter A8), ethylene glycol and total ammonia monitoring is no longer required.

The NPDES water quality monitoring results are also posted on Massport's website: https://www.massport.com/massport/business/capital-improvements/sustainability/water-quality/.

More information on the NPDES stormwater discharge compliance regulations and requirements can be found in the **User's Guide, Section U9.1.**

User's Guide Section U9.1

Deicer Discharge Reduction Plan

The 2023 NPDES Permit also establishes new technology-based requirements designed to reduce deicing chemical use by implementing a Blend-to-Temperature program as part of an overall *Deicer Discharge Reduction Plan* (DDRP).[6] This plan, coupled with new, enhanced monitoring and reporting requirements throughout the deicing season, will better protect water quality. Additionally, starting in 2026, Massport, in collaboration with the Co-Permittees, must submit an annual Glycol Reduction Report each year by September 30th.

PFAS Reduction Plan

In accordance with Condition 1.a. of the Massachusetts Clean Water Act Section 401 Certification for the Final 2023 Federal NPDES Permit for Logan International Airport, Massport prepared a summary of the products containing PFAS stored at Logan, and whether storage or use of those products can be reduced or eliminated.

9.2.2.1 2023 NPDES SWPPP Compliance Requirements

In October 2023, Massport conducted its annual SWPPP update meeting with its co-permittees. Also in 2023, Massport conducted training for personnel responsible for implementing activities identified in the SWPPP, performed SWPPP inspections of operating areas at Logan Airport, including tenants' facility areas, and made recommendations on how to optimize BMPs during those inspections.

6 Part I.C.2.2023 NPDES Permit No. MA0000787, Authorization to Discharge Under the National Pollutant Discharge Elimination System. August 24, 2023.

Co-Permittees submitted documentation verifying the SWPPP annual requirements had been fulfilled, including training, inspections, reporting, and BMP implementation, as applicable to each co-permittee facility's operations. Each co-permittee successfully submitted their Certification of Compliance to Massport's Environmental Management. On January 19, 2024, The 2023 Annual Certificates of Compliance were submitted jointly by Massport and the co-permittees to the U.S.EPA and MassDEP.

9.2.2.2 2024 NPDES SWPPP Compliance Requirements

Massport conducted its annual SWPPP update meeting with its co-permittees in October 2024. Also in 2024, Massport conducted training for personnel responsible for implementing activities identified in the SWPPP, performed SWPPP inspections of operating areas at Logan Airport, including tenants' facility areas, and made recommendations on how to optimize BMPs during those inspections.

Co-Permittees submitted documentation verifying the SWPPP annual requirements had been fulfilled, including training, inspections, reporting, and BMP implementation, as applicable to each co-permittee facility's operations. Each co-permittee successfully submitted their Certification of Compliance to Massport's Environmental Management. On January 17, 2025, The 2023 Annual Certificates of Compliance were submitted jointly by Massport and the co-permittees to the U.S.EPA and MassDEP.

Massport developed their DDRP with strategies for reducing deicing use over time, including options for developing the Blend-to-Temperature Program. While the Blend-to-Temperature technology does not need to be implemented until the end of 2026, Massport has met the 2023 NPDES Permit requirement to submit the DDRP and will continue to advance the implementation of the DDRP.

9.2.3 NPDES Monitoring Requirements and Results

For 2023 monitoring, the 2007 NPDES Permit No. MA0000787 mandated monthly **grab samples** from Outfalls 001 (North), 002 (West), 003 (Porter Street), and 004 (Maverick Street) to test various parameters, including pH, oil and grease, and bacteria, with additional wet weather sampling for polycyclic aromatic hydrocarbons (PAHs) and specific monitoring for deicing compounds twice per season. While the 2007 NPDES permit sets discharge limitations for pH, oil and grease, and TSS for certain outfalls, it only requires reporting of sampling results for other parameters and outfalls. For more on NPDES monitoring, see **User's Guide, Section U9.3**.

User's Guide Section U9.3

For November 1, 2023 through the end of 2024, monitoring followed the 2023 NPDES Permit requirements, and the changes in monitoring requirements between the two permits are summarized in Section 9.2.2. Both 2023 and 2024 monitoring data is available in Appendix K, *Water Quality Supporting Documentation*.

Massport conducts investigations to determine potential sources when exceedances are detected, and when the source is identified, Massport takes appropriate corrective action to resolve the issue.

Because the Logan Airport drainage areas can be large, and pollutant concentrations in discharges can be relatively low, it is not always possible to trace exceedances to specific events.

9.2.3.1 2023 NPDES Monitoring Results Summary

No permit exceedances occurred during the 2023 reporting year's monitoring efforts. Wet weather monitoring was not possible for Outfalls 001 (North), 002 (West), or 003 (Porter Street) in April and May 2023 due to unsafe weather conditions, like lightning or severe storms. Outfall 004 (Maverick Street) was also inaccessible in May 2023 due to adverse weather. PAHs were only detected in the fourth quarter sampling from Outfalls 001 (North), 002 (West), or 003 (Porter Street). Sampling results were reported as required to the U.S.EPA and MassDEP. Refer to Appendix K, Table K-1 to Table K-12 for the 2023 monitoring data results.

9.2.3.2 2024 NPDES Monitoring Results Summary

In 2024, over 98 percent of monthly stormwater samples from Outfalls 001 (North), 002 (West), 003 (Porter Street), and 004 (Maverick Street) were in compliance with standards for pH, oil and grease, benzene, and TSS. Refer to Appendix K, Table K-13 and Table K-15, for more details. The 2024 reporting year was the first full year where the new 2023 NPDES Permit requirements and monitoring protocols were in effect.

In 2024, there was one effluent discharge limitation exceedance for TSS, at 152.5 mg/L, which exceeded the maximum daily limit of 100 mg/L. Snow removal activities during the timeframe of the exceedance were identified as a potential cause.

Outfall 005 (Northwest) samples for pH, oil and grease, and TSS were collected in three of four quarters with no exceedances for these analytes in 2024. Airfield Outfalls 006 (Perimeter A21), 007 (Perimeter A33), and 008 (Perimeter A8) were also sampled over three quarters for these analytes in 2024, as well as for DO, although DO measurements are only required in the first and fourth quarters of a given reporting year. There were no exceedances for these outfalls for the required analytes in 2024, and DO values were approximately at saturation levels, indicating biochemical oxygen demand (BOD_5) and chemical oxygen demand (COD) were not an issue. Insufficient discharge flow volume meant samples could not be collected from Outfalls 005 through 008 in the third quarter of 2024, so no data is available. This sampling data is provided in Appendix K, Table K-20 and Table K-21.

Quarterly composite WET sampling was conducted in 2024 for Outfalls 001 (North), 002 (West), and 004 (Maverick Street), although data could not be collected from Outfall 004 during the first quarter sampling. Ambient Characteristic grab samples were also collected from each outfall's receiving water body, which are listed in **Table 9-1**, at a designated location upstream from each outfall's discharge point. These results were reported in accordance with the 2023 NPDES Permit requirements. See Appendix K, Table K-17 and Table K-18 for WET and Ambient Characteristic monitoring data.

Monthly grab sampling for pH, oil and grease, TSS, and benzene is required for internal outfalls associated with the fuel farm discharge treated stormwater from Outfall 001 (North). Discharge volumes sufficient to sample from these areas only occurred in February, April, and from September to December 2024; however, no exceedances were observed among the analyzed samples. Refer to Appendix K, Table K-19 for monthly data.

9.2.4 Deicing Monitoring

Aircraft and pavement deicing are typically conducted at Logan Airport beginning in October or November and continuing through March or April, depending on weather conditions in a given year. The 2007 and 2023 NPDES permit requires Massport, the airlines, and **fixed-base operators (FBOs)** to minimize deicer discharges to stormwater to the extent practicable by conducting aircraft and pavement deicing efficiently. Massport monitors both deicing use and stormwater discharges during the deicing season.

Massport has submitted a draft DDRP for review and comment from MassDEP and the U.S.EPA. In both 2023 and 2024, Massport collaborated with tenants and FBOs to review current practices and best practices, as well as planned activities outlined in the DDRP, to control deicer exposure to stormwater discharges. Although the use of Blend-to-Temperature systems is not mandatory until 2026, several tenants are already utilizing these practices, and Massport routinely checks in with tenants to assess their progress with implementing these practices. Starting in 2026, Massport will report on the program's efficacy at reducing glycol use. More information on the NPDES stormwater discharge compliance regulations and requirements is available in the **User's Guide, Section U9.1** Stormwater sampling results from the 2023 and 2024 reporting year deicing seasons are reported as required to the U.S.EPA NetDMR website and are also included in Appendix K, Table K-22 and Table K-23.[7]

User's Guide Section U9.1

9.2.4.1 2023 Deicing Monitoring Results Summary

Outfall 001 (North) was sampled in November and December of 2023 with BOD_5 and chemical oxygen demand COD at reportable levels, although these were not discharge limitation exceedances. These analytes are for BOD_5 and COD, respectively, and may be indicative of excess nutrients or de-icing chemicals in discharges. Outfall 002 (West) was also sampled in November and December, but only COD was detected at a reportable level. Outfall 003 (Porter Street) was sampled in February 2023 for the 2022-2023 deicing season. Each effluent chemical tested for in the discharges was observed in detectable quantities from Outfall 003 (Porter Street), as required by the 2007 NPDES permit. In 2023, WET and ambient toxicity testing was not required.

7 Wet weather deicing monitoring is only required during the first and third year of the NPDES permit.

9.2.4.2 2024 Deicing Monitoring Results Summary

Outfalls 001 (North) and 002 (West) were sampled monthly over seven sampling events. Two sampling events, one in October and one in November, were cancelled due to unsafe weather conditions at the time. While the November event was successfully rescheduled, it was not possible to collect samples for October.[8] For these outfalls, the BOD_5 and COD results were substantially similar to the 2023 monitoring results. Tolyltriazole and nonylphenol were below the analysis method's minimum level (ML) for detection in the samples analyzed.

Quarterly sampling for PFAS during the deicing season also began in 2024. Although the six PFAS types prescribed for monitoring were detected in discharges from Outfalls 001 and 002, the quantities detected were orders of magnitude below the acute saltwater aquatic life benchmarks for Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS).

9.2.5 Stormwater and Sanitary Sewer System Inspections and Repairs

Massport's Facilities Department conducts biannual inspections of the 61 **Stormceptor®** devices located throughout the Airport in accordance with Massport's Operations and Maintenance department policies. In addition to biannual Stormceptor® inspections, Massport routinely inspected catch basins within 100 yards of aircraft, vehicle, and equipment maintenance facilities, and they were cleaned on an as-needed basis. The pollution control facilities located at the North and West Outfalls have bar screen rooms, which remove trash and debris from stormwater runoff before it is released as a discharge, as well as oil-water (OW) separators, which remove floating oil and grease. The pollution control facilities are inspected daily, maintained, and cleaned as appropriate. In 2023 and 2024, Massport also conducted Logan Airport tenant facility inspections, and the inspection outcomes are summarized below. More information on the structural BMPs and Massport's inspection and repair protocols is provided in the **User's Guide, Section U9.1.4**.

User's Guide Section U9.1.4

9.2.5.1 2023 Stormwater and Sanitary Sewer System Inspections and Repairs

In 2023, nine units required cleaning during inspections; the remainder of the units had nominal sediment accumulations. Sediment and debris were removed and transported off-site to a solid waste landfill for disposal. No new Stormceptor® devices were installed in 2023. The bar screen rooms and OW separators associated with Outfalls 001 (North) and 002 (West) were also routinely inspected, cleaned, or repaired as necessary.

[8] Missed sampling events and failure to reschedule sampling are usually due to lack of weather conditions that do not necessitate the user of a deicer.

9.2.5.2 2024 Stormwater and Sanitary Sewer System Inspections and Repairs

Massport inspected the Stormceptor® units during two separate inspection surveys in 2024, and 26 units required cleaning. Sediment and debris were removed and transported to an off-site solid waste landfill for disposal. In 2024, no new Stormceptor® devices needed to be installed. The bar screen rooms and OW separators associated with Outfalls 001 (North) and 002 (West) were also routinely inspected and cleaned or repaired when needed.

9.2.6 Bacteria Source Tracking

Massport monitors bacteria levels at stormwater outfalls by obtaining samples during wet weather and dry weather events. Grab samples are collected from outfalls during monthly sampling events. Sampling results are available in Appendix K and can also be viewed in discharge monitoring reports (DMRs) posted on Massport's website: http://www.massport.com/massport/business/capital-improvements/sustainability/water-quality.

9.2.6.1 2023 Bacteria Source Tracking Results Summary

The laboratory analytical data obtained for compliance with the 2007 NPDES Permit indicated bacteria levels continue to be highly variable. Although the 2007 NPDES Permit did not set discharge limitations for bacteria, these data were reported as required by the permit and are provided in Appendix K, Table K-1 to Table K-4, Table K-8, and Table K-9.

9.2.6.2 2024 Bacteria Source Tracking Results Summary

The 2023 NPDES Permit included changes to reporting requirements for bacteria source tracking, as well as set effluent limitations for *Enterococcus* and fecal coliforms.[9] Results of bacteria sampling conducted in 2024 continued to be highly variable. Commencing in 2025, the 2023 NPDES Permit reporting requirements for bacteria source tracking will change and effluent limitations for *Enterococcus* and fecal coliforms will be set. Supporting data is provided in Appendix K, Table K-13 and Table K-15.

9 2023 NPDES Permit No. MA0000787, Authorization to Discharge Under the National Pollutant Discharge Elimination System. August 24, 2023.

9.3 Snow Disposal and Runoff Management

Massport's snow disposal for Logan Airport involves using large, mobile machines to melt accumulated snow. This approach helps keep the runways open and minimizes interruptions to passenger services, especially considering the high annual snowfall the Airport typically receives. Massport melts snow in areas where meltwater, which could contain pollutants, cannot readily access wetlands or water bodies, such as Boston Harbor. Massport's *Snow Disposal Policy* conforms to MassDEP's *Snow Disposal Guidance* requirements.[10]

Snow Melter at Logan Airport.

9.4 Fire Training Facility NPDES Surface Water Discharge Permit Compliance

The NPDES Permit/MassDEP Surface Water Discharge Permit No. MA0032751 was issued January 21, 2021, and became effective on April 1, 2021. This permit specifically regulates treated water discharges to Boston Harbor surface waters from Logan Airport's Fire Training Facility (as depicted in **Figure 9-1**). These discharges result from process water that collects at the Fire Training Facility during firefighting training exercises. There are no storm drains within the Fire Training Facility; therefore, this permit does not regulate stormwater discharges, but rather is specific to the treated process water collected from water-only training conducted in the fire training area. Further details about the Fire Training Facility's NPDES Surface Water Discharge Permit are in the **User's Guide, Section U9.5**.

User's Guide Section U9.5

9.4.1 NPDES Regulated Discharge Monitoring Requirements

The discharge monitoring requirements and analytes for the 2023 and 2024 reporting years, as well as the prior reporting requirements, are provided in the **User's Guide, Section U9.4.** When needed, collected waters are treated by separation and carbon filtration methods to remove fuel contaminants, then reused onsite to recharge the fire training pit for training exercises. If storage is unavailable, collected waters are treated to remove regulated contaminants and then tested to confirm that it meets water quality standards before being discharged from Outfall 001 (Airfield Outfall A-38).

User's Guide Section U9.4

Aqueous film forming foam (AFFF) containing PFAS are used by Aircraft Rescue and Firefighting (ARFF) personnel to fight aviation fuel fires safely and efficiently, per **Federal Aviation Administration (FAA)** Part 139 Certification safety requirements.[11] Massport has eliminated the use of AFFF containing PFAS in fire training exercises, which is also in accordance with FAA guidance. Massport is evaluating FAA

10 Massachusetts Department of Environmental Protection. (2020). *Snow disposal guidance*. Bureau of Water Resources. Retrieved from https://www.mass.gov/doc/2020-snow-disposal-policy-and-guidance/download

11 FAA *Advisory Circular (AC) No. 150/5210-22 Airport Certification Manual (ACM).* Issued April 26, 2004. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5210_22.pdf

In 2023 and 2024, DMRs that included wastewater sampling results were submitted electronically to the U.S.EPA on a monthly basis as mandated by the permit via the U.S.EPA's NetDMR web application, regardless of whether discharges occurred.

and other guidance and safety requirements regarding transitioning to a fluorine-free foam product and its use.

More information on the Fire Training Facility's NPDES Surface Water Discharge Permit monitoring requirements are provided in the **User's Guide, Section U9.5**. The discharge dates and total gallons of treated collected waters discharged for each event are presented in **Table 9-2** below.

Appendix K, Table K-24 lists six PFAS compounds required for discharge monitoring, and samples collected in 2023 and 2024 were analyzed using the U.S.EPA's multi-lab validated Method 1633A, *Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS*.[12] PFAS sampling at the Fire Training Facility began in the 2023 reporting year per the MassDEP permit's terms and conditions.

User's Guide Section U9.5

9.4.1.1 2023 Fire Training Facility Regulated Discharges Summary

In 2023, five controlled, batch-type discharges of treated collected waters from the Fire Training Facility to Boston Harbor were conducted after submitting sample analysis results to Massachusetts Division of Marine Fisheries (MassDMF) and receiving approval. In 2023, 148,867 gallons of Fire Training Facility collected waters were recycled and reused. One type of PFAS was detected above trace amounts in the sample for the one quarterly discharge event in 2023, with 5.71 nanograms per liter (ng/L) of PFOS.

Table 9-2 Fire Training Facility Regulated Discharges, 2023 and 2024

Discharge Date	Discharge Volume (gallons)
10/25/2023	17,992
11/07/2023	19,813
11/08/2023	17,796
11/20/2023	19,661
11/21/2023	7,616
4/23/2024	18,717
4/24/2024	20,407

Source: Massport, 2025.

12 U.S.EPA. Method 1633, Revision A, *Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS*. Updated December 2024. https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas

9.4.1.2 2024 Fire Training Facility Regulated Discharges Summary

A total of 39,124 gallons of treated collected waters were discharged in 2024 during two events on April 23rd and April 24th as controlled, batch-type discharges from the Fire Training Facility via Airfield Outfall 001 to Boston Harbor after submitting sample analysis results to MassDMF and receiving approval. In addition, 177,437 gallons of Fire Training Facility collected waters were recycled and reused in 2024. No PFAS compounds were detected in Fire Training Facility samples in 2024.

9.5 Fuel Use and Spills

Massport maintains a **Spill Prevention, Control, and Countermeasures (SPCC) Plan** for facilities storing petroleum products. Tenants meeting certain thresholds are required to prepare their own SPCC plans for their facilities. Additionally, tenants receive information on Massport BMPs, which focus on spill management and prevention. Massport also implements a Tank Management Program, a continuous program of inspections, testing, and minor repairs for Massport-owned **underground storage tanks (USTs)**, **aboveground storage tanks (ASTs)**, related piping, tank monitoring systems, and associated equipment. More information on Massport's Tank Management Program, fuel and materials handling, spill prevention, and spill management procedures and policies are provided in the **User's Guide, Section U9.7**.

User's Guide Section U9.7

9.5.1 Fuel Use and Spills Compliance Requirements

Massport's Aircraft Fueling System (AFS) minimizes water quality impacts by implementing SWPPP BMPs, which include cathodic protection, leak detection devices, secondary containment, tank overfill protection, and reducing at-gate tanker truck deliveries. The AFS facility is leased and operated by BOSFuel Corporation. Operation of the AFS was performed by Swissport Fueling until Spring 2024, after which time FSM Group has operated on behalf of BOSFuel. Massport Fire Rescue maintains records of spills at Logan Airport. State environmental regulations require reporting fuel spills of ten gallons or more in volume to MassDEP. Spills of any volume entering storm drains must also be reported to MassDEP. Massport maintains records of spills, including those less than the reporting threshold. Most spills result from operator errors, such as overfilling during fueling, or other mechanical issues.

A summary of Logan Airport jet fuel usage and spill records from 2022, 2023, and 2024 is shown in **Table 9-3**, and details pertaining to the type and quantity of the spills can be found in Appendix K, Table K-26 and Table K-27.

Table 9-3 Fuel, Oil, and Regulated Materials Spills, 2022-2024

Material Spilled	Volume Spilled (gallons)			Number of Spills 10 gallons or More		
	2022	2023	2024	2022	2023	2024
Jet Fuel	200	511	328	3	7	1
Hydraulic Oil	39	74	84	0	0	3
Diesel Fuel	19	46	23	0	1	0
Gasoline	22	24	6	0	0	0
Other	12	236	42	0	3	0
Total Spills	**292**	**891**	**483**	**3**	**11**	**4**

Source: Massport, 2025.

9.5.1.1 2023 Fuel Use and Spills Compliance Summary

In 2023, of the 229 fuel, oil, or hazardous material spills reported to Massport Fire Rescue, 11 were reportable quantity spills requiring MassDEP notification. Six of the reportable spills reached storm drains, but all were pumped out at the impacted drain and did not reach the Harbor.

9.5.1.2 2024 Fuel Use and Spills Compliance Summary

In 2024, a total of 148 spills of regulated materials occurred, resulting in 483 gallons spilled. Although there were four reportable quantity spills in 2024, MassDEP was notified accordingly. Two of the reportable spills reached storm drains, but all were pumped out at the impacted drain and did not reach the Harbor. Site Assessment and Remediation

Massport complies with the MCP, 310 Code of Massachusetts Regulations (CMR) 40 et seq., by monitoring fuel and oil and hazardous materials spills, and tracking the status of spill response actions. In accordance with the MCP, Massport assesses, remediates, and brings areas of subsurface contamination into regulatory compliance.

9.5.2 Site Assessment and Remediation Compliance

Active MCP sites are illustrated in **Figure 9-2**, and Appendix K, Table K-28 describes Massport's progress in 2023-2024 in achieving regulatory closure of MCP sites. A map of sites that have achieved regulatory closure can be found in Appendix K, Figure K-1.

9.5.2.1 2023 Site Assessment and Remediation Updates

In 2023, two active MCP sites were closed, and one release tracking number (RTN) was assigned to a new site, which achieved a permanent solution and was closed the same year. The Fire Training Facility (RTN: 3-28199) MCP site was closed with the submittal of a Permanent Solution with Conditions Statement (PSCS) and Activity and Use Limitation (AUL) to MassDEP in June 2023. The Former American Airlines North Cargo (RTN: 3-35030) site was also closed following Massport's submittal of a Release

Abatement Measures (RAM) Completion Report, Permanent Solution Statement (PSS), and Notice of AUL first amendment letter. A 120-day reporting condition was issued in August 2023 for Runway 15R-33L Taxiway N Area (RTN: 3-38284), following the detection of polychlorinated biphenyls (PCBs) in soil during sampling for construction. The site was further assessed, and limited soil removal was completed in coordination with construction. The site was closed in December 2023, with a Permanent Solution with No Conditions.

9.5.2.2 2024 Site Assessment and Remediation Updates

In 2024, one release site, the former TWA Airlines Site (RTN: 3-1449), was identified in October 2024 to have been historically not closed out by the prior responsible party tenant, who no longer operates at Logan Airport. Massport took over assessment and response actions related to that site. In addition, at the end of 2024, two additional MCP sites managed by Massport remained open: the Fuel Distribution System (RTN: 3-1287) and Former Building 6 (RTN: 3-37749). RAM status reports were submitted every six months for the two active sites. In January 2024, the Phase IV Remedy Implementation Status Report was submitted for the MCP site at Terminal B Gate 5, formerly Gate 7 (RTN: 3-35047), and in July, the AUL and PSCS Report was submitted to close out the project.

Figure 9-2 Massachusetts Contingency Plan Sites (Active)

2023/2024 Environmental Data Report

1. Fuel Distribution System (3-1287)
2. Fire Training Facility (3-28199)
3. Former American Airlines - North Cargo (3-35030)
4. Terminal B Gate 5 (Formerly Gate 7) (3-35047)
5. Former Building 6 (3-37749)
6. Runway 15R-33L Taxiway N Area (3-38284)
7. TWA Airlines Site (RTN 3-1449)

Active
Closed in 2023
Closed in 2024
Jet Fuel Distribution System

0 600 1,200 2,400 Feet