AUTHORIZATION TO DISCHARGE UNDER
THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"),

Massachusetts Port Authority (Massport) and the Co-Permittees listed in Attachment B and located at Logan International Airport

are authorized to discharge from a facility located at

Logan International Airport
One Harborside Drive
East Boston, Massachusetts 02128-2909

to receiving waters named

Boston Harbor, Boston Inner Harbor and Winthrop Bay (Boston Harbor Basin)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

Co-Permittees are responsible for portions of the Stormwater Pollution Prevention Plan (SWPPP) in Part I.C. for stormwater discharges from industrial activities which they conduct. The Co-Permittee Swissport Fueling/BOSFuel is responsible for operating the treatment system associated with the centralized fuel farm. All Co-Permittee tenants that deice aircraft are responsible for complying with Part C.2 of this Permit pertaining to glycol reduction.

This permit shall become effective on [*the first day of the calendar month immediately following 60 days after signature*].[1]

This permit expires at midnight on [*five years from the last day of the month preceding the effective date*].

This permit supersedes the permit issued on July 31, 2007.

[1] Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the Permit will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

This permit consists of **Part I**, **Attachment A** (Marine Acute Toxicity Test Protocol, July 2012, 10 pages), **Attachment B** (List of Co-Permittees), and **Part II** (NPDES Part II Standard Conditions, April 2018, 21 pages).

Signed this day of

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Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

Outfall Designations

Below is a summary of where tables of the effluent limits and monitoring requirements can be found by Permit Part and page number. For reporting purposes, each numbered outfall was given letter designations that apply to different sampling conditions as follows: Wet and/or dry weather (A), deicing episodes (B), treated stormwater from the fuel storage and distribution system (D) and (E). Designations (D) and (E) represent treated discharges which are combined with other stormwater flows within the storm drainage system and eventually discharge to Outfall 001.

Outfall Number (Massport designation)	Wet and/or dry weather flows	Deicing Episode	Above-Ground Storage Tanks (ASTs), Fuel Loading Rack, and Set-up Tank Areas
Outfall 001 (North Outfall)	**01A** (I.A.1, page 4)	**01B** (I.A.3, page 15)	**01D & 01E** (I.A.4, page 18)
Outfall 002 (West Outfall)	**02A** (I.A.1, page 4)	**02B** (I.A.3, page 15)	------
Outfall 003 (Porter Street Outfall)	**03A** (I.A.2, page 11)	**03B** (I.A.7, page 24)	------
Outfall 004 (Maverick Street Outfall)	**04A** (I.A.1, page 4)	------	------
Outfall 005 (Northwest Outfall)	**05A** (I.A.5, page 20)	------	------
Outfall 006 (Perimeter Outfall A21)	**06A** (I.A.6, page 22)	**06B** (I.A.7, page 24)	------
Outfall 007 (Perimeter Outfall A33)	**07A** (I.A.6, page 22)	**07B** (I.A.7, page 24)	------
Outfall 008 (Perimeter Outfall A8)	**08A** (I.A.6, page 22)	**08B** (I.A.7, page 24)	------

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, Massport ("the Permittee") and Co-Permittees are authorized to discharge stormwater associated **with industrial activity** from vehicle maintenance areas, equipment cleaning areas and deicing activities, and groundwater infiltration through Outfall Serial Number **01A (North) to Winthrop Bay**, and **02A (West)** and **04A (Maverick Street) to Boston Inner Harbor**. Such discharges shall be limited as specified below and monitored by Massport as specified below:

Effluent Characteristic	**Effluent Limitation**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Effluent Flow[6]	Report MGD	Report MGD	1/month	Estimate
Total Suspended Solids (TSS)	Report mg/L	100 mg/L	1/month	Grab
pH[7]	6.0 - 8.5 S.U.		1/week	Grab
Oil and Grease [8]	---	15 mg/l	1/month	Grab
Fecal Coliform[9], Outfall 01A Outfalls 02A and 04A	88 cfu/100 ml Report cfu/100 ml	260 cfu/100 ml Report cfu/100 ml	1/month 1/month	Grab Grab
Enterococcus[9]	35 cfu/100 ml	276 cfu/100 ml	1/month	Grab
Benzene, µg/l[10] (Outfall 01A only)	Report µg/L	Report µg/L	1/month	Grab
Surfactants (Outfalls 01A and 02A)	Report mg/L	Report mg/L	1/year	Grab
Total Ammonia Nitrogen, as mg/L of N	Report mg/L	Report mg/L	1/quarter	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Polycyclic Aromatic Hydrocarbons (PAHs)[10]	----	Report Total	1/quarter	Grab
1) Benzo(a)anthracene	----	Report µg/L	1/quarter	Grab
2) Benzo(a)pyrene	----	Report µg/L	1/quarter	Grab
3) Benzo(b)fluoranthene	----	Report µg/L	1/quarter	Grab
4) Benzo(k)fluoranthene	----	Report µg/L	1/quarter	Grab
5) Chrysene	----	Report µg/L	1/quarter	Grab
6) Dibenzo(a,h)anthracene	----	Report µg/L	1/quarter	Grab
7) Indeno(1,2,3-cd)pyrene	----	Report µg/L	1/quarter	Grab
8) Naphthalene	----	Report µg/L	1/quarter	Grab
Perfluorohexanesulfonic acid (PFHxS)[11,12]	----	Report ng/L	1/quarter	Grab
Perfluoroheptanoic acid (PFHpA)[11,12]	----	Report ng/L	1/quarter	Grab
Perfluorononanoic acid (PFNA)[11,12]	----	Report ng/L	1/quarter	Grab
Perfluorooctanesulfonic acid (PFOS)[11,12]	----	Report ng/L	1/quarter	Grab
Perfluorooctanoic acid (PFOA)[11,12]	----	Report ng/L	1/quarter	Grab
Perfluorodecanoic acid (PFDA)[11,12]	----	Report ng/L	1/quarter	Grab
Whole Effluent Toxicity (WET) Testing[5,13,14]				

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
LC_{50}	---	Report %	1/quarter	Composite
NOAEL	---	Report %	1/quarter	Composite
pH	---	Report S.U.	1/quarter	Composite
Total Solids	---	Report mg/L	1/quarter	Composite
Total Suspended Solids	---	Report mg/L	1/quarter	Composite
Ammonia	---	Report mg/L	1/quarter	Composite
Salinity	---	Report ppt	1/quarter	Composite
Total Organic Carbon	---	Report mg/L	1/quarter	Composite
Total Cadmium	---	Report mg/L	1/quarter	Composite
Total Copper	---	Report mg/L	1/quarter	Composite
Total Nickel	---	Report mg/L	1/quarter	Composite
Total Lead	---	Report mg/L	1/quarter	Composite
Total Zinc	---	Report mg/L	1/quarter	Composite

Ambient Characteristic[15]	Reporting Requirement		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Salinity	---	Report ppt	1/quarter	Grab
Ammonia	---	Report mg/L	1/quarter	Grab
Total Organic Carbon	---	Report mg/L	1/quarter	Grab
Total Cadmium	---	Report mg/L	1/quarter	Grab
Total Copper	---	Report mg/L	1/quarter	Grab
Total Nickel	---	Report mg/L	1/quarter	Grab
Total Lead	---	Report mg/L	1/quarter	Grab
Total Zinc	---	Report mg/L	1/quarter	Grab
pH[16]	---	Report S.U.	1/quarter	Grab
Temperature[16]	---	Report °C	1/quarter	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the discharge point to the receiving water after treatment in the oil/water separator (for Outfalls 01A and 02A), prior to co-mingling with any other wastestream. On its Discharge Monitoring Report (DMR), the Permittee shall note any precipitation events of greater than 0.1 inches in magnitude or equivalent snowmelt that occurred during the 72 hours prior to sampling. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the State.

The Permittee shall report the results to EPA and the State of any additional testing above that required herein, if testing is in accordance with 40 C.F.R. § 136.

2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L).

4. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/quarter is defined as the sampling of one discharge event in each calendar quarter. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code (e.g., "C" for "No Discharge").

5. The composite sample for the Whole Effluent Toxicity (WET) testing shall consist of a minimum of eight equally weighted grab samples collected at fifteen minute intervals or greater during a normal discharge and at the outfall location.

6. The effluent flow rate for Outfalls 01A, 02A, and 04A shall be estimated by the most recent hydraulic flow model developed by Massport or other acceptable method as approved in writing by EPA. Massport shall report the average monthly and maximum daily flow rate for each of the three outfalls, in millions of gallons per day (MGD).

7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). Also see Part I.C.5.

8. The Permittee shall use EPA Method 1664A for oil & grease (O&G) analysis, which has a minimum level (ML) of 5 mg/l, where the ML is the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for a pollutant or pollutant parameter, representative of the lowest concentration at which a pollutant or pollutant parameter can be measured with a known level of confidence.

9. Fecal coliform shall be conducted year round. For Outfalls 002A and 004A, fecal coliform shall be a monitor only requirement, with no limit. **For Outfall 01A**, fecal coliform discharges shall not exceed a monthly geometric mean of 88 colony forming units (cfu) per 100 ml, nor shall more than 10% of the samples exceed 260 cfu per 100 ml as a daily maximum. *Enterococcus* monitoring shall be conducted year round. *Enterococcus* shall not exceed a monthly geometric mean of 35 colony forming units (cfu) per 100 ml, nor shall it exceed 276 cfu per 100 ml as a daily maximum.

10. The ML for benzene analysis shall be no greater than 2 µg/l. Polycyclic Aromatic Hydrocarbons (PAH) shall be monitored once per calendar quarter and the results shall be submitted with the DMR for the last month of the quarter. The ML for PAHs shall be no greater than the following: 0.1 µg/L for each Group I PAH (Items 1 to 7 on limits table above) and 5 µg/L for naphthalene. The ML is not the minimum level of detection, but rather the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for an analyte, representative of the lowest concentration at which an analyte can be measured with a known level of confidence. Analysis must be completed using an EPA approved method in 40 C.F.R. §136, Table IC – Non-Pesticide Organic Compounds. The detection limit (DL) for each analyte must be recorded. The DL is the lowest concentration that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method during routine laboratory operating conditions (i.e., the level above which an actual value is reported for an analyte, and the level below which an analyte is reported as non-detect). When an analyte is not detected above the Practical Quantification Level (PQL), the Permittee must report using the data qualifier signifying less than the DL for that analyte (i.e., <0.1 µg/L, if the PQL for an analyte is 0.1 µg/L).

11. This reporting requirement for the listed PFAS parameters takes effect six months after the Permittee is notified by EPA that a multi-lab validated method for wastewater is available to the public on EPA's CWA methods program website. *See* https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods.

12. After one year of monitoring, if all samples are non-detect for all six PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring. *See* Special Conditions in Part I.C.4.

13. The Permittee shall conduct acute whole effluent toxicity tests (WET) four times per year for each of the Outfalls 01A, 02A, and 04A in accordance with test procedures and protocols specified in **Attachment A** of this permit. LC_{50} is defined in Part II.E. of

this permit. The Permittee shall test the Mysid Shrimp, *Americamysis bahia*, and the Inland Silverside, *Menidia beryllina*. Toxicity test samples shall be collected in February, June, September, and December as shown in the table below. Sampling for February and December shall be conducted during deicing applications for Outfalls 001 and 002 only, or within 12 hours after deicing applications have occurred in the respective drainage areas of these outfalls. The test results and complete report for each toxicity test shall be submitted as an attachment to the March, July, October, and January DMRs, which are due by April 15, August 15, November 15, and February 15, respectively. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this Permit. If the Permittee is unable to conduct the deicing sampling in February or December, it shall conduct such sampling during the following month.

WET Testing Months	Submit Results With:	Test Species	Acute Endpoints
February (during deicing)	March DMR	Mysid Shrimp, *Americamysis bahia* Inland Silverside, *Menidia beryllina*	Report NOAEL & Report LC_{50}
June	July DMR		
September	October DMR		
December (during deicing)	January DMR		

14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

15. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A**, Minimum levels and test methods are specified in **Attachment A,** Part VI. CHEMICAL ANALYSIS.

16. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

2. During the period beginning on the effective date and lasting through the expiration date, Massport and Co-Permittees are authorized to discharge stormwater associated **with industrial activity** from vehicle maintenance areas, equipment cleaning areas and groundwater infiltration from outfall **03A (Porter Street Outfall) to Boston Inner Harbor**. Such discharges shall be limited and monitored by Massport as specified below:

Effluent Characteristic	**Effluent Limitation**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type**
Effluent Flow[5]	Report MGD	Report MGD	1/month	Estimate
Total Suspended Solids (TSS)	Report mg/L	100 mg/L	1/month	Grab
pH[6]	6.0 - 8.5 S.U.		1/week	Grab
Oil and Grease[7]	---	15 mg/L	1/month	Grab
Fecal Coliform[8]	Report cfu/100 ml	Report cfu/100 ml	1/month	Grab
Enterococcus[8]	35 cfu/100 ml	276 cfu/100 ml	1/month	Grab
Total Ammonia Nitrogen, as mg/L of N	Report mg/L	Report mg/L	1/quarter	Grab
Polycyclic Aromatic Hydrocarbons (PAHs)[9]	----	Report Total µg/L	1/quarter	Grab
1) Benzo(a)anthracene	----	Report µg/L	1/quarter	Grab
2) Benzo(a)pyrene	----	Report µg/L	1/quarter	Grab
3) Benzo(b)fluoranthene	----	Report µg/L	1/quarter	Grab
4) Benzo(k)fluoranthene	----	Report µg/L	1/quarter	Grab
5) Chrysene	----	Report µg/L	1/quarter	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type
6) Dibenzo(a,h)anthracene	----	Report µg/L	1/quarter	Grab
7) Indeno(1,2,3-cd)pyrene	----	Report µg/L	1/quarter	Grab
8) Naphthalene	----	Report µg/L	1/quarter	Grab
Perfluorohexanesulfonic acid (PFHxS)[10,11]	----	Report ng/L	1/quarter	Grab
Perfluoroheptanoic acid (PFHpA)[10,11]	----	Report ng/L	1/quarter	Grab
Perfluorononanoic acid (PFNA)[10,11]	----	Report ng/L	1/quarter	Grab
Perfluorooctanesulfonic acid (PFOS)[10,11]	----	Report ng/L	1/quarter	Grab
Perfluorooctanoic acid (PFOA)[10,11]	----	Report ng/L	1/quarter	Grab
Perfluorodecanoic acid (PFDA)[10,11]	----	Report ng/L	1/quarter	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the discharge point to the receiving water and prior to co-mingling with any other wastestream. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the State. The Permittee shall report the results to EPA and the State of any additional testing above that required herein, if testing is done in accordance with 40 C.F.R. § 136. Outfall 03A samples shall be comprised of two equally weighted samples taken upstream of Outfall 03A that are representative of the discharge and at least one of these shall be from the airside of the property, which is comprised of runways, taxiways and service roads.

2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L).

4. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/quarter is defined as the sampling of one discharge event in each calendar quarter. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code (e.g., "C" for "No Discharge").

5. The effluent flow rate for Outfall 03A shall be estimated by the most recent hydraulic flow model developed by Massport or other acceptable method as approved in writing by EPA. Massport shall report the average monthly and maximum daily flow rate for the outfall, in millions of gallons per day (MGD).

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). Also see Part I.C.5.

7. The Permittee shall use EPA Method 1664A for oil & grease (O&G) analysis, which has a minimum level (ML) of 5 mg/l, where the ML is the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for a pollutant or pollutant parameter, representative of the lowest concentration at which a pollutant or pollutant parameter can be measured with a known level of confidence.

8. Fecal coliform and *Enterococcus* monitoring shall be conducted year-round. *Enterococcus* shall not exceed a monthly geometric mean of 35 colony forming units (cfu) per 100 ml, nor shall it exceed 276 cfu per 100 ml as a daily maximum. Fecal coliform shall be monitored only with no limit.

9. See footnote 10 in Part I.A.1 regarding PAH analysis requirements. Sampling for PAH compounds shall be conducted once during each calendar quarter of the year.

10. The reporting requirement for the listed PFAS parameters takes effect six months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website. *See* https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods.

11. After one year of monitoring, if all samples are non-detect for all six PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring. *See* Special Conditions in Part I.C.4.

3. DEICING EPISODES

During the period beginning on the effective date and lasting through the expiration date, Massport and Co-Permittees are authorized to discharge stormwater associated with industrial activity from aircraft and pavement/runway deicing activities from outfalls 01B (North) and 02B (West). Such discharges shall be monitored by Massport as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type
Effluent Flow, MGD[5]	-----	Report, MGD	1/month (October through April only)	Estimate
Propylene Glycol	-----	Report mg/L	1/month (Oct-Apr)	Grab
Biochemical Oxygen Demand, 5 day (BOD_5)[6]	----- -----	Report mg/L Report lbs/day	1/month (Oct-Apr) 1/month (Oct-Apr)	Grab Calculated
Chemical Oxygen Demand (COD)[6]	----- -----	Report mg/L Report lbs/day	1/month (Oct-Apr) 1/month (Oct-Apr)	Grab Calculated
Dissolved Oxygen	-----	Report mg/L	1/month (Oct-Apr)	Grab
Tolyltriazoles[8], Total	-----	Report µg/L	3/Deicing Season[7]	Grab
Nonylphenol[8], Total	-----	Report µg/L	3/Deicing Season[7]	Grab
Perfluorohexanesulfonic acid (PFHxS)[9,10]	----	Report ng/L	1/quarter	Grab
Perfluoroheptanoic acid (PFHpA)[9,10]	----	Report ng/L	1/quarter	Grab
Perfluorononanoic acid (PFNA)[9,10]	----	Report ng/L	1/quarter	Grab
Perfluorooctanesulfonic acid (PFOS)[9,10]	----	Report ng/L	1/quarter	Grab
Perfluorooctanoic acid (PFOA)[9,10]	----	Report ng/L	1/quarter	Grab

Effluent Characteristic	Discharge Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type
Perfluorodecanoic acid (PFDA)[9,10]	----	Report ng/L	1/quarter	Grab

Footnotes:

1. Sampling taken in compliance with the monitoring requirements specified above shall be taken at a point prior to discharge from Outfalls 01B and 02B and prior to mixing with any other stream. Sampling shall be conducted during or soon after deicing has occurred in the respective drainage areas of these outfalls. On its DMR, the Permittee shall note any precipitation events of greater than 0.1 inches in magnitude or equivalent snowmelt that occurred during the 72 hours prior to sampling. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. All samples shall be tested using the analytical methods found in 40 C.F.R.§136, or alternative methods approved by EPA in accordance with the procedures in 40 C.F.R. §136. Any changes in sampling location must be approved in writing by EPA and MassDEP.

2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The ML is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L).

4. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

5. The effluent flow rate for Outfalls 01B and 02B shall be estimated by the most recent hydraulic flow model developed by Massport or other acceptable method as approved in writing by EPA. Massport shall report the average monthly and maximum daily flow rate for each of the two outfalls, in millions of gallons per day (MGD).

6. Massport will use the monthly sampling requirement during the deicing season for BOD_5 and COD as well as any additional sampling to ensure that the extrapolated loading estimates used in the Deicer Discharge Reduction Plan (DDRP) in Part I.C.2 are reliably accurate and statistically significant. To calculate monthly loadings, Massport shall use the methodology from the technical development document that accompanied the airport Effluent Limitation Guideline document in 2012 and found at: https://www.epa.gov/sites/production/files/2015-06/documents/airport-deicing-tdd-final-2012.pdf.

7. The deicing season is defined as October through April. Sampling for nonylphenol and tolyltriazole shall be conducted three times during the deicing season and must be conducted on the same day as sampling for other parameters for Outfalls 01B and 02B.

8. For nonylphenol, the Permittee shall use ASTM Standard Test Method D 7065 (Determination of Nonylphenol, Bisphenol A, p-tert-Octylphenol, Nonylphenol Monoethoxylate and Nonylphenol Diethoxylate in Environmental Waters by Gas Chromatography Mass Spectrometry) or submit an alternative method to EPA for approval. For tolytriazole, the Permittee shall use a test method capable of achieving a minimum level (ML) of $\leq$ 1 mg/L tolyltriazole. Tolyltriazoles may be reported as sum of the predominant isomers which are found in the glycol formulations used at the airport.

9. This reporting requirement for the listed PFAS parameters takes effect six months after the Permittee is notified by EPA that a multi- lab validated method for wastewater is available to the public on EPA's CWA methods program website. *See* https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods.

10. After four sampling events, if all samples are non-detect for all six PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring. *See* Special Conditions in Part I.C.4.

4. INTERNAL OUTFALLS ASSOCIATED WITH FUEL FARM AND OUTFALL 001 STORMWATER DRAINAGE SYSTEM

During the period beginning on the effective date and lasting through the expiration date, Massport and the Co-Permittee that operates the centralized fuel farm are authorized to discharge stormwater associated **with industrial activity** from the aboveground storage tank (AST) berms, other bermed areas in the fuel farm area and fuel loading rack area, and from hydrant vaults and pits stored in the Set-up Tank, from internal outfalls **01D and 01E**. These treated stormwater flows ultimately discharge at Outfall 01A and shall be monitored by Massport or the Co-Permittee that operates the centralized fuel farm, as specified below:

Effluent Characteristic	**Discharge Limitations**		**Monitoring Requirements**	
	Total Monthly	**Maximum Daily**	**Measurement Frequency**	**Sample Type[1]**
Flow[2]	Report, Gallons	Report, Gallons	1/month	Meter or Estimate
pH Range	Report S.U.	Report S.U.	1/month	Grab
Oil & Grease[3]	----	15 mg/L	1/month	Grab
TSS	Report mg/L	100 mg/L	1/month	Grab
Benzene[4]	Report mg/L	Report mg/L	1/month	Grab

Footnotes:

1. The water from the hydrant vaults and pits which collects in the Set-up tank shall be sampled after the treatment train consisting of an oil/water separator, a bag filter, and two carbon filters in series, prior to commingling with the water from the bermed areas of the fuel farm (including the AST bermed areas) and the water from the fuel loading rack. The sampling location designated Outfall 01E is the outlet of the last carbon filter. The water from the bermed areas of the fuel farm (including the AST bermed areas) and the water from the fuel loading rack combine with the treated water that is discharged at internal outfall 01E and pass through the oil/water separator located at the fuel farm, the outlet of which is designated as Outfall 01D. See **Figures 4A and 5** of the Fact Sheet for diagrams showing these sampling points. A monthly grab sample shall be taken during discharge, at a location

representative of the discharge after treatment, as described above for each internal outfall. All samples shall be tested using the NPDES approved EPA analytical methods for the designated effluent characteristic in accordance with 40 C.F.R. §136. Alternative methods can be used if approved by EPA in writing, in accordance with the procedures in 40 C.F.R. §136. For those months when there are no discharges, the Permittee must report a NODI Code (e.g., "C" for "No Discharge") on the DMR.

2. Metered readings or estimates of the total monthly and maximum daily amount of treated stormwater discharged to these internal outfalls shall be reported in gallons.

3. The Permittee shall use EPA Method 1664A for oil & grease (O&G) analysis, which has a minimum level (ML) of 5 mg/l, where the ML is the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for a pollutant or pollutant parameter, representative of the lowest concentration at which a pollutant or pollutant parameter can be measured with a known level of confidence.

4. The ML for benzene analysis shall be no greater than 2 µg/l. Analysis must be completed using an EPA approved method in 40 C.F.R. §136, Table IC – Non-Pesticide Organic Compounds. The detection limit (DL) for each analyte must be recorded. The DL is the lowest concentration that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method during routine laboratory operating conditions (i.e., the level above which an actual value is reported for an analyte, and the level below which an analyte is reported as non-detect). When an analyte is not detected above the Practical Quantification Level (PQL), the Permittee must report using the data qualifier signifying less than the DL for that analyte (i.e., <0.1 µg/L, if the PQL for an analyte is 0.1 µg/L).

5. During the period beginning on the effective date and lasting through the expiration date, Massport and Co-Permittees that conduct operations in this outfall's drainage area are authorized to discharge stormwater associated **with industrial activity** to outfall **05A (Northwest)** to Winthrop Bay. Sampling shall be conducted during wet weather as described below. Such discharges shall be monitored by Massport as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements[1]	
	Average Monthly	Maximum Daily	Measurement Frequency[2]	Sample Type[3]
Effluent Flow[4]	Report, MGD	Report, MGD	1/quarter	Estimated
pH, Range	Report S.U.	Report S.U.	1/quarter	Grab
Oil & Grease[5]	Report mg/L	15 mg/L	1/quarter	Grab
TSS	Report mg/L	100 mg/L	1/quarter	Grab

Footnotes:

1. Sampling taken in compliance with the monitoring requirements specified above shall be taken at Outfall 05A and prior to mixing with any other stream. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. All samples shall be tested using the analytical methods found in 40 C.F.R. §136, or alternative methods approved by EPA in accordance with the procedures in 40 C.F.R. §136. Any changes in sampling location must be approved in writing by EPA and MassDEP. Also see footnote 2 in Part I.A.1 regarding the use of sufficiently sensitive test procedures.

2. The sampling frequency of 1/quarter is defined as the sampling of <u>one</u> discharge event per calendar quarter. Samples shall be collected during the calendar quarters of January through March, April to June, July to September, and October through December and the results submitted with the March, June, September, and December DMRs. The Permittee shall submit the results to EPA of any additional testing conducted beyond that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 C.F.R. §122.41(l)(4)(ii). For those months when there are no discharges, the Permittee must report a NODI Code on the DMR.

3. Grab samples at this outfall shall be taken during wet weather conditions, if practicable. Wet weather conditions are defined as a storm event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rain fall) storm event. The 72-hour interval may be waived when the preceding measurable storm did not yield a measurable discharge, or if the Permittee is able to document that less than a 72-hour interval is representative for local storm events during the sampling period. The grab sample shall be taken during the first thirty (30) minutes of the discharge. If it is not practicable to take the sample during the first 30 minutes, sampling shall be conducted as soon as is practicable after this 30-minute period has elapsed. Massport shall estimate the flow rate for the days that sampling is conducted based on the most recent hydraulic flow model developed by Massport or other acceptable method as approved in writing by EPA.

4. The effluent flow rate shall be estimated by the most recent hydraulic flow model developed by Massport or other acceptable method as approved in writing by EPA.

5. The Permittee shall use EPA Method 1664A for oil & grease (O&G) analysis, which has a minimum level (ML) of 5 mg/l, where the ML is the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for a pollutant or pollutant parameter, representative of the lowest concentration at which a pollutant or pollutant parameter can be measured with a known level of confidence.

6. During the period beginning on the effective date and lasting through the expiration date, Massport and Co-Permittees are authorized to discharge stormwater associated **with industrial activity from pavement and runway activities other than deicing** 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. Sampling shall be conducted during wet weather as described below. Such discharges shall be monitored by Massport as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements[1]	
	Average Monthly	Maximum Daily	Measurement Frequency[2]	Sample Type[3]
Effluent Flow[4]	Report MGD	Report MGD	1/quarter	Estimated
pH, Range	Report S.U.	Report S.U.	1/quarter	Grab
Oil & Grease[5]	Report mg/L	Report mg/L	1/quarter	Grab
TSS[6]	Report mg/L	Report mg/L	1/quarter	Grab
Dissolved Oxygen	Report mg/L	Report mg/L	1/quarter[7]	Grab

Footnotes:

1. Sampling taken in compliance with the monitoring requirements specified above shall be taken at Outfalls 06A, 07A, and 08A. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. For example, the Permittee may request permission to sample alternative airfield outfalls if the designated outfalls are not easily accessible. All samples shall be tested using the analytical methods found in 40 C.F.R. §136, or alternative methods approved by EPA in accordance with the procedures in 40 C.F.R. §136. Any changes in sampling location must be approved in writing by EPA and MassDEP. Also see footnote 2 in Part I.A.1 regarding the use of sufficiently sensitive test procedures.

2. Samples shall be collected during the calendar quarters of January through March, April to June, July to September, and October through December and the results submitted with the April, June, September, and January DMRs. The Permittee shall submit the results to EPA of any additional testing conducted beyond that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 C.F.R. §122.41(l)(4)(ii). For those months when there are no discharges, the

Permittee must report a NODI Code on the DMR. If sampling is not conducted during the specified month, the Permittee shall attempt to sample during the following month.

3. Grab sample at these outfalls shall be taken during wet weather conditions, if practicable. Wet weather conditions are defined as a storm event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rain fall) storm event. The 72-hour interval may be waived when the preceding measurable storm did not yield a measurable discharge, or if the permittee is able to document that less than a 72-hour interval is representative for local storm events during the sampling period. The grab sample shall be taken during the first 30 minutes of the discharge. If it is not practicable to take the sample during the first 30 minutes, sampling shall be conducted as soon as is practicable after this 30 minute period has elapsed, Massport shall report the flow rate for the days that sampling occurs based on the model used to estimate flows at the airport.

4. The flow volume shall be estimated by using the most recent hydraulic flow model developed by Massport or other acceptable method during the days of sampling.

5. The Permittee shall use EPA Method 1664A for oil & grease (O&G) analysis, which has a minimum level (ML) of 5 mg/l, where the ML is the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for a pollutant or pollutant parameter, representative of the lowest concentration at which a pollutant or pollutant parameter can be measured with a known level of confidence.

6. Beginning after four quarterly samples have been collected, the Permittee shall calculate a rolling 4 sample average for TSS each subsequent calendar quarter. If any of these rolling average values is greater than 100 mg/L, the Permittee shall assess its SWPPP and BMP Plan and make changes that are designed to result in TSS levels that are below 100 mg/l for subsequent quarterly average values.

7. DO monitoring shall be conducted only during the quarters ending in December and March.

7. During the period beginning on the effective date and lasting through the expiration date, Massport and Co-Permittees are authorized to discharge stormwater associated **with industrial activity** from aircraft and pavement/runway deicing activities to **Outfall 03B**, **Outfall 06B** (airfield outfall A21), **Outfall 07B** (airfield outfall A33), and **Outfall 08B** (airfield outfall A8). Such discharges shall be monitored by Massport as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements [1]	
	Average Monthly	Maximum Daily	Measurement Frequency [2]	Sample Type
Propylene Glycol	-----	Report mg/L	3/Deicing Season	Grab
BOD_5	-----	Report mg/L	3/Deicing Season	Grab
COD	-----	Report mg/L	3/Deicing Season	Grab
Dissolved Oxygen	-----	Report mg/L	3/Deicing Season	Grab
Tolyltriazoles [3], Total	-----	Report µg/L	3/Deicing Season	Grab
Nonylphenol [3], Total	-----	Report µg/L	3/Deicing Season	Grab

Footnotes:

1. Sampling taken in compliance with the monitoring requirements specified above shall be taken at Outfalls 06B, 07B, and 08B. For Outfall 03B, sampling shall be conducted only at the catch basin at the airside location where the Permittee is authorized to take a sample that is representative of discharge to Outfall 03B, as described in footnote 1 of Part I.A.2. Sampling shall be conducted during or soon after deicing has occurred in the respective drainage areas of these outfalls. The Permittee may request permission to sample alternative airfield outfalls if the designated outfalls are not easily accessible. Also see footnote 2 in Part I.A.1 regarding the use of sufficiently sensitive test procedures.

2. Sampling frequency of three per deicing season of October through April, when discharge occurs. The Permittee shall submit the results to EPA of any additional testing conducted beyond that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 C.F.R. §122.41(l)(4)(ii). For those months when there are no discharges, the Permittee must report a NODI Code (e.g., "C" for "No Discharge") on the DMR.

3. See footnote 8 on Part I.A.3 above for tolyltriazole and nonylphenol analysis requirements.

Part I.A. continued:

8. The discharge shall not cause a violation of the water quality standards of the receiving waters.

9. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving waters, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

10. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.

11. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.

12. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving waters.

13. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

14. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 C.F.R. § 122.42):

    a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

        (1) 100 micrograms per liter (µg/L);
        (2) 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol; and one milligram per liter (mg/L) for antimony;
        (3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
        (4) Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f) and State regulations.

    b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

        (1) 500 µg/L;
        (2) One mg/L for antimony;

(3) 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
(4) Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f) and State regulations.

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

15. Massport, as the owner and operator of this airport facility and its stormwater collection system, is ultimately responsible for the discharges from this system to waters of the United States.

16. Massport shall comply with all existing federal, state, and local laws and regulations that apply to the reuse or disposal of solids, such as those which may be removed from any catch basins or settling basins on the site. At no time shall these solids be discharged to any receiving water.

17. The use of pavement or runway deicing compounds that contain urea is prohibited. If the Permittee determines that the use of urea is required based on safety considerations or a regulatory requirement of the Federal Aviation Administration (FAA), the Permittee shall notify the EPA and this permit will be modified to establish a total ammonia nitrogen effluent limit of 14.7 mg/l for those outfalls that receive discharges of deicing activities, consistent with the effluent limitation guidelines at 40 C.F.R. §449.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall(s) listed in Part I.A.1 through I.A.7, in accordance with the terms and conditions of this permit. Discharges are authorized from all 44 airfield, perimeter outfalls. Monitoring that is representative of all airfield outfalls is required for 3 of these outfalls as shown in Parts I.A.6 and I.A.7. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).

2. The following discharges are prohibited from entering the storm drain system. Appropriate control measures, which are outlined in the SWPPP requirements below, shall be implemented to prevent such discharges.

a. Direct discharge of pollutants [any substance, material, or waste other than stormwater associated with industrial activity including but not limited to: oil and grease, vehicle fluids, fuel, waste oil, solvents, degreasing agents, cleaning solutions, battery acid, paint, paint thinners, antifreeze (not including deicing chemicals), pesticides, herbicides, fertilizers, dumpster wastes, sediment, landscape wastes, floatables, sewage, lavatory wastes, potable water chemicals, rubber particles] into the storm drain system;

b. Discharges of stormwater and non-stormwater discharges that cause or threaten to cause pollution, contamination, sedimentation, or nuisance;

c. Stormwater and non-stormwater discharges that contribute to an exceedance of any applicable water quality standard;

d. Discharge of cleaning agents, paints, oil, or other pollutants from equipment, vehicle, or aircraft cleaning and maintenance;

e. Discharge of wash water from equipment, vehicle, aircraft, and lavatory waste truck washing;

f. Discharge of fuel from aircraft, vehicle, and equipment fueling;

g. Discharge of lavatory waste from aircraft lavatory servicing operations;

h. Discharge of sewage, sediment, or debris from sewer, catch basin, or storm drain cleaning operations;

i. Discharge of water-based or latex paint rinse water from painting activities;

j. Discharge from firefighting training activities other than those from the Fire Training Facility to the permitted outfall as authorized by NPDES Permit #MA0032751;

k. Discharge from cleaning of floor drains, sumps, and oil/water separators that contains sediment, chemical, and any other pollutants;

l. Discharges from dewatering, hydrostatic tank testing or pipe pressure testing that contains sediment, chemicals, and any other pollutants;

m. Disposal of petroleum wastes such as waste oil; and

n. Disposal of any liquid waste from any dumpster.

C. SPECIAL CONDITIONS

1. Stormwater Pollution Prevention Plan (SWPPP)

Massport shall continue to implement the SWPPP that was developed pursuant to the 2007 Permit for all sources of pollutants generated or present at Logan International Airport, ("Logan"), which have the potential to be discharged to Boston Harbor, Boston Inner Harbor or Winthrop Bay. The SWPPP includes a general section for the control of all sources of water pollutants and four (4) additional discrete sections for each major source of pollutants: (1) deicing and anti-icing chemical sources, (2) potential illicit discharges, (3) fuel and oil sources, and (4) runway rubber removal sources. Pursuant to the SWPPP, BMPs shall continue to be designed and implemented to meet the applicable Best Available Technology

Economically Achievable/Best Conventional Pollutant Control Technology (BAT/BCT) standards required by the CWA as well as the following water quality based requirements, at a minimum: (1) Any effluent shall not contain materials in concentrations or in combinations which are hazardous or toxic to aquatic life or which would impair the uses designated by the classification of the receiving waters, and (2) The discharge shall not cause or contribute to a violation of the State water quality standards.

a. Co-Permittees & Other Tenants

Co-Permittees: Many tenants and service providers (often referred to as "fixed-base operators") operating at Logan have been named as "Co-Permittees" due to their industrial activities. See Permit Attachment B for a complete list of tenants that are Co-Permittees as of the date of this Draft Permit. A Co-Permittee is a Permittee that is only responsible for permit conditions relating to the discharges for which it is an operator as provided at 40 C.F.R. § 122.26(b)(1). An entity meets the definition of a Co-Permittee if such entity performs industrial activities at an air transportation facility such as Logan, is classified under Standard Industrial Classification (SIC) 4581 and has vehicle maintenance shops, and conducts equipment cleaning operations, and/or airport deicing operations (see 40 C.F.R. §122.26(b)(14)(viii)). Vehicle maintenance includes vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication. Furthermore, entities are deemed to be Co-Permittees if they perform industrial activities at an air transportation facility as defined in the NPDES Stormwater Multi-Sector General Permit for Industrial Activities (2021 MSGP, Part 8.S.3), see also https://www.epa.gov/npdes/stormwater-discharges-industrial-activities). A Co-Permittee also includes an entity that performs an activity at Logan that EPA has determined can contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States (see 40 C.F.R. §122.26(a)(v)), as it has for entities handling aircraft lavatory waste or any other sanitary waste devices not directly piped to a "Publicly Owned Treatment Works."

The Permittee shall maintain all Stormwater Co-Permittee Applications (SWCPAs) that the Co-Permittee tenants have completed. When a new Co-Permittee begins to operate at Logan or a Co-Permittee ceases to operate at Logan, Massport shall add or delete such SWCPAs from their list. This permit requires Massport to maintain a current list of the Co-Permittees at Logan and each Co-Permittee's contact for environmental issues. All new Co-Permittee tenants shall submit to Massport for approval their own SWPPP for the industrial activities they perform or agree that they will adopt Massport's SWPPP for the discharges resulting from their industrial activities within 60 days of being designated as new Co-Permittee.

When a new Co-Permittee begins to operate at Logan or a Co-Permittee ceases to operate at Logan, Massport shall follow the change in ownership or operational control requirements of 40 C.F.R. §122.63(d). Massport shall retain a signed copy of the SWCPA for each new Co-Permittee as well as each Co-Permittee's Part II form consistent with the Massport SWPPP which meets the requirements of this final permit. Massport shall keep a copy of its current SWPPP including copies of all current Co-Permittees SWPPPs at

Massport's Environmental Department offices at Logan and shall make these available upon request to any representative of EPA or MassDEP.

Other Tenants: The presence and operations of other tenants at the airport, such as car rental and food preparation establishments which are not defined separately as having stormwater discharges associated with industrial activity under 40 C.F.R.§122.26(b)(14) shall also be addressed in the SWPPP. Massport shall require private agreements through contracts to ensure that the SWPPP for Logan addresses any potential stormwater contamination from these types of tenants. Massport shall ensure that these tenants manage any potential pollutant sources to stormwater in a manner consistent with this SWPPP.

b. SWPPP Certification and Annual Report - Massport shall maintain, update and ensure the proper implementation of its SWPPP and any separate Co-Permittee's SWPPP. With respect to the SWPPP, Massport is responsible for its own activities, each Co-Permittee is responsible for their own activities, and Massport has the overall responsibility for coordination and oversight. Massport and the Co-Permittees shall account for any changes that occur at Logan which could impact the SWPPP and amend it as necessary to reflect any changes at the airport.

   Massport shall provide an Annual Report that includes a proper certification to EPA and the MassDEP documenting that the previous year's inspections and maintenance activities were conducted, results recorded, records maintained, and demonstrating compliance with the SWPPP. Massport shall revise its SWPPP within one year of the effective date of the permit to include any changes or additional elements required by this Permit. In this first year SWPPP revision, Massport shall also ensure that its SWPPP incorporates any of the technology-based effluent limits at Part 8.S.4 and SWPPP requirements at Part 8.S.5 of the 2021 MSGP that were not previously included. The report with the proper certification shall be signed in accordance with the requirements identified in 40 C.F.R. § 122.22. A copy of this certification will be due no later than **January 31** of each year to cover the prior calendar year and include a complete listing of Co-Permittees and their respective contacts, incorporating additions and deletions through the calendar year. Massport shall obtain certifications (meeting the same requirements as described above for Massport) from all current Co-Permittees for their industrial activities and include these with the Annual Report submittal.

c. SWPPP Objectives - The SWPPP shall continue to focus on two major objectives: (1) to identify sources of pollution that have the potential to affect the quality of the water discharged from the airport's outfalls including, but not limited to, stormwater, process water, and wastewater associated with activities performed throughout the airport; and (2) to ensure implementation of measures to minimize and control pollutants in stormwater, wastewater and process water discharges associated with activities performed throughout the airport, so as to meet the CWA standards set out in Part I.C.1 of this permit.

The SWPPP for Massport and the Co-Permittees shall address all sources of pollutants within their areas of operation that have the potential to drain to the stormwater sewer system including, but not limited to, where (1) chemicals or fuels are stored, (2) deicing and anti-icing chemicals are applied to airplanes, (3) aircraft are fueled, (4) solid wastes and raw materials with the potential to leak are stored, (5) solid wastes and raw materials stored indoors and have a potential to spill and flow to inside floor drains that drain to the stormwater system or to the outside, (6) automotive maintenance and cleaning activities occur, (7) aircraft maintenance activities occur, (8) deicing and anti-icing chemicals are spread on runways and roadways, (9) maintenance of the runways to remove rubber particles to improve the surface friction levels occurs, (10) sewer connections to the stormwater drainage system are identified, (11) aircraft lavatory wastes are removed and transported, (12) food or food wastes are stored that have the potential to attract birds and animals, and (13) birds tend to flock.

Massport and the Co-Permittees shall thoroughly evaluate all potential pollution sources at the site and select and implement appropriate measures designed to prevent or control the discharge of pollutants to the outfalls, in order to meet the CWA standards set out in Part I.C.1 of this permit. Massport shall designate an Environmental Representative (ER) that will be responsible for developing and implementing the facility wide SWPPP. Each Co-Permittee listed in Attachment B shall designate an ER responsible for implementing the SWPPP required for the Co-Permittee's facility and its activities. Massport shall: (1) maintain a team of qualified environmental airport personnel who are responsible for implementing the SWPPP and assisting Massport's ER responsible in its implementation; (2) continually assess the sources of water pollution; (3) select and implement appropriate environmental management practices and controls; and (4) periodically evaluate the effectiveness of the plan to prevent the release of pollutants to the stormwater sewer system.

Massport and the Co-Permittees shall develop management practices that use pollution prevention approaches to control the discharge of pollutants. The following classes of management practices are generally employed at industrial facilities and shall continue to be employed at Logan and outlined in the SWPPP:

(1) A pollution control program that implements practices such as good housekeeping, employee training, and spill response and prevention procedures; and
(2) Management practices that address containment, mitigation, and cleanup.

d. Outline of the SWPPP - The SWPPP shall contain the following elements:

(1) Details of the SWPPP
   i. Pollution Prevention Team
   ii. Description of the Facility Regarding Potential Pollution Sources
   iii. Description of the Facility Site and Receiving Waters/Wetlands
   iv. Description of Potential Pollutant Sources
   v. Stormwater Management Controls

vi. Site Inspection
vii. Consistency with Other Plans
vii. Amending the SWPPP

(2) BMPs for Identifying and Reducing Deicing and Anti-Icing Sources
(3) BMPs for Identifying and Reducing Potential Illicit Discharges
(4) BMPs for Identifying and Reducing Fuel and Oil Sources
(5) BMPs for Minimizing and Reducing Rubber Removal Sources

e. Details of the SWPPP

(1) Pollution Prevention Team

Massport shall maintain a team of individuals that includes an ER from each Co-Permittee, who shall be responsible for implementing the SWPPP and assisting the Massport ER in its implementation. When selecting members of the team, Massport's ER should draw on the expertise of all relevant departments and Co-Permittees within the airport to ensure that all aspects of airport operations are considered when the plan is developed. The plan must clearly describe the responsibilities of each team member as they relate to specific components of the plan. In addition to enhancing the quality of communication between team members and other personnel, clear delineation of responsibilities will ensure that every aspect of the plan is addressed by a specified individual or group of individuals.

(2) Description of the Facility Regarding Potential Pollution Sources

The SWPPP shall describe activities, materials, and physical features of the facility that may potentially contribute pollutants to stormwater runoff or, during periods of dry weather, result in pollutant discharges through the separate storm sewers or stormwater drainage systems throughout the facility. This assessment of stormwater pollution risk shall support subsequent efforts to identify and set priorities for necessary changes in materials, materials management practices, or site features, as well as aid in the selection of appropriate structural and nonstructural control techniques, if necessary.

(3) Description of the Facility Site and Receiving Waters/Wetlands

The plan must contain a map or maps of the site that shows the location of outfalls covered by the permit (or by other NPDES permits), the pattern of stormwater drainage, an indication of the types of discharges contained in the drainage areas of the outfalls, structural features that control pollutants in runoff,[2] surface water bodies (including

2 Non-structural features such as grass swales and vegetative buffer strips also should be shown.

wetlands), areas where significant materials[3] are exposed to rainfall and runoff, and locations where any spills and leaks of toxic or hazardous materials have occurred in the past five (5) years. Such maps shall display the locations where the following activities take place: (1) chemicals or fuels are stored, (2) deicing and anti-icing chemicals are applied to aircraft, (3) aircraft fueling, (4) outdoor solid waste and raw materials storage, (5) indoor solid waste and raw materials storage areas that have a potential to spill and flow to floor drains that drain to the stormwater system, (6) automotive maintenance and cleaning activities, (7) aircraft maintenance activities, and (8) application of deicing chemicals on impervious (paved) surfaces. For areas of the facility that generate stormwater discharges with a reasonable potential to contain significant amounts of pollutants, the map shall indicate the probable direction of stormwater flow and the pollutants likely to be in the discharge.

Flows with a significant potential to cause soil erosion also must be identified. In order to increase the readability of the map, the inventory of the types of discharges contained in each outfall may be kept as an attachment to the site map.

(4) Description of Potential Pollutant Sources

The SWPPP shall provide a description of potential sources which contribute pollutants to stormwater discharges or which may result in the discharge of pollutants draining from the facility. The description shall address each pollutant for which monitoring is required. The SWPPP must identify all activities and significant materials, which may potentially be significant pollutant sources. The SWPPP shall include:

i. A topographic map extending one-quarter of a mile beyond the property boundary of the facility;
ii. An estimate of the overall runoff coefficient for the site, determined by an acceptable method, such as area weighting;
iii. Methods of on-site storage or disposal of these materials; materials management practices employed to minimize contact of these materials with stormwater runoff; materials loading and access areas; the location and description of existing structural and nonstructural control measures to reduce pollutants in stormwater runoff; and description of any treatment the stormwater receives;
iv. A list of all spills and leaks of toxic or hazardous materials that have occurred at the facility five years prior to the effective date of this permit to the present;

3 Significant materials include, but are not limited to the following: raw materials, fuels, solvents, detergents, and plastic pellets, finished materials, such as metallic products, raw materials used in food processing or production, hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), any chemical the facility is required to report pursuant to the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 313, fertilizers, pesticides, and waste products, such as ashes, slag, and sludge that have the potential be released with stormwater discharges. (*See* 40 C.F.R. §122.26(b)(8)).

v. A list of any non-stormwater discharges that are known or are reasonably expected to be present at the site.

(5) Stormwater Management Controls

Massport shall describe stormwater management controls appropriate for an airport and continue to implement such controls, in order to meet the CWA standards set out in Part I.C.1 of this permit. The appropriateness for implementing controls listed in the SWPPP must reflect identified potential sources of pollutants at the facility. The description of stormwater management controls must address the following minimum components, including a schedule for implementing such controls:

i. Pollution Prevention Team – as described in Part I.C.6.a. above. The activities and responsibilities of the team must address all aspects of Logan's SWPPP.
ii. Risk Identification and Assessment/Material Inventory - The SWPPP must assess the potential of various sources at Logan that could contribute pollutants to stormwater discharges associated with industrial activity. The SWPPP must include an inventory of the types of materials handled. Each of the following areas or activities must be evaluated for the reasonable potential for contributing pollutants to runoff: (1) storage of chemicals or fuels, (2) applications of deicing and anti-icing chemicals to aircraft, (3) fueling of planes, (4) storage of solid wastes and raw materials with the potential to leak, (5) indoor storage of solid wastes and raw materials that have with a potential to spill and flow to inside floor drains that drain to the stormwater system, (6) automotive maintenance and cleaning activities, (7) airplane maintenance activities, (8) application of deicing chemicals on tarmac or other areas, (9) identification of sewer connections to the stormwater drainage system, (10) removal and transporting of aircraft lavatory wastes, (11) storage of food or food wastes that could potentially attract birds and animals, (12) flocking of birds, and (13) maintenance of runways to remove rubber particles to improve the surface friction levels. Factors to consider include the toxicity of chemicals; quantities of chemicals used, produced, or discharged; the likelihood of their contact with stormwater, and the history of significant leaks or spills of toxic or hazardous pollutants.
iii. Preventative Maintenance - A preventative maintenance program must be comprised of inspections and maintenance of stormwater management devices (i.e., oil/water separators, catch basins, track mats) as well as the periodic inspection and testing of facility equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters.
iv. Good Housekeeping - The SWPPP shall address good housekeeping, which requires the maintenance of a clean orderly facility. Examples of these practices are included in an existing component of Massport’s SWPPP which is entitled “General – Baseline BMPs.” These practices include actions such as frequent equipment cleanings, maintenance of clean floor and pavement areas, and proper centralized storage of chemical containers.

v. Spill Prevention and Response Procedure - Areas where potential spills can occur and their accompanying drainage points, must be identified clearly in the SWPPP. The potential for spills to enter the stormwater drainage system must be eliminated whenever feasible. Where appropriate, specific material handling procedures, storage requirements, and procedures for cleaning up spills must be identified in the SWPPP and made available to the appropriate personnel. The stormwater discharges shall be tested for pollutants contained in the material spilled, in the event that the spill has reached the stormwater drain, within 24 hours from the initial occurrence of the spill as directed by the EPA or the MassDEP during clean up associated with such occurrence. Massport is responsible for the sampling and analysis of storm drain discharges.

vi. Stormwater Management - The SWPPP must contain a narrative evaluation of the appropriateness of traditional stormwater management practices. Based on an assessment of the potential of various sources at the facility to contribute pollutants to the stormwater discharge, the SWPPP must provide measures, determined to be reasonable and appropriate, to be implemented and maintained, in order to meet the CWA standards set out in Part I.C.1 of this permit.

vii. Sediment and Erosion Prevention - The SWPPP must implement ongoing measures to protect receiving water quality from impacts due to construction activities that disturb less than one acre and are not subject to EPA's NPDES Construction General Permit (CGP).

viii. Employee Training - Employee training programs must inform personnel responsible for implementing activities identified in the SWPPP, or otherwise responsible for stormwater management at all levels, of the components and goals of the SWPPP. Training should address topics such as spill response, good housekeeping and material management practices. The SWPPP must identify periodic dates for such training, which shall be conducted annually, at a minimum.

ix. Visual Inspections - Qualified facility personnel must be identified to inspect designated equipment and facility areas. Material handling areas must be inspected for evidence of, or the potential for, pollutants entering the drainage system. Along with the monitoring required at three (3) of the forty-four (44) airfield outfalls, the discharge at each of the 44 outfalls shall be inspected annually during dry weather conditions. Inspections shall be conducted near low tide, when many of these outfalls should be accessible. The inspector shall record evidence of any sheen, odors, or staining which would indicate the presence of pollutants. Weather conditions shall be recorded at the time of the inspection. A tracking or follow up procedure must be used to ensure that appropriate actions have been made in response to problems observed during the inspection (e.g. visible sheen, damaged outfall pipe). Records of inspections must be maintained for six (6) years, pursuant to Part II.C.1.b of the permit.

x. Recordkeeping and Internal Reporting Procedures - Incidents such as spills, or other discharges, along with other information describing the quality and quantity of stormwater discharges must be included in the SWPPP records. All inspections and maintenance activities must be documented and maintained on site for six (6) years.

(6) Site Inspection - An annual site inspection must be conducted by the Pollution Prevention Team, as named in the SWPPP, to verify that the description of potential pollutant sources is accurate, that the drainage map has been updated or otherwise modified to reflect current conditions, and controls to reduce pollutants in stormwater and process water discharges identified in the SWPPP are being implemented and are adequate. A tracking or follow-up procedure must be used to ensure that the appropriate action has been taken in response to any issues of concern identified during each inspection. Records documenting significant observations made during the site inspection must be retained as part of the SWPPP for six years.

(7) Consistency with Other Plans - Stormwater management controls may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the CWA and may incorporate any part of such plans into the SWPPP by reference.

(8) Amending the SWPPP - Massport and the Co-Permittees shall amend and implement an amended SWPPP whenever there is a substantial change in any aspects of design, construction, operation, or maintenance, which have a significant effect on the potential for the discharge of pollutants to any of the receiving waters; a release (as defined by 40 C.F.R. § 300.5) of reportable quantities of hazardous substances and oil; or if the SWPPP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges. Any such amended SWPPP shall be implemented within 30 days.

f. BMPs for Identifying and Reducing Deicing and Anti-icing Sources

Massport and Co-Permittees that store, handle or apply deicing and/or anti-icing compounds[4] at Logan International Airport shall continue to implement BMPs for Deicing and Anti-Icing Chemicals. The SWPPP shall include the following information:

(1) Potential Pollution Sources – All Permittees that apply deicing and/or anti-icing chemicals must maintain a record of the types of such chemicals (including the Safety Data Sheets [SDS]) used and the monthly quantities, either as measured or, in the absence of metering, as estimated to the best of their knowledge. This includes all deicing and anti-icing chemicals, not only glycol formulations, because large quantities of such chemicals may have an adverse impact on receiving waters. Co-Permittees that conduct deicing operations shall provide a copy of the above information to Massport for inclusion in the Massport SWPPP and each annual Glycol Reduction Report described in I.C.1.f.7 below.[5]

4 "Deicing" generally refers to both deicing (removing frost, snow or ice) and anti-icing (preventing accumulation of frost, snow or ice) activities, unless specific mention is made regarding anti-icing and/or deicing activities.

5 MSGP 2021, Part 8.S.3.2

(2) Source Reduction – 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.

Massport and Co-Permittee tenants that deice aircraft shall implement a blend-to-temperature program for tracking and reducing the use of glycols. 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. Massport shall continue to assess other measures to implement which will continue to reduce the levels of deicing and anti-icing chemicals used throughout the airport.

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. Massport shall also continue to assess other measures to reduce the use and discharge of glycol compounds and include its findings in each annual Glycol Reduction Report described in Part I.D.

(3) Runway Deicing and Anti-icing– Massport and Co-Permittee tenants that conduct deicing operations shall ensure that only the necessary amount of deicing and anti-icing chemicals are used, consistent with considerations of flight safety and protocols established by the Federal Aviation Administration (FAA). Massport and applicable Co-Permittee tenants shall also consider the following BMP options (or their equivalents): metered application of chemicals; pre-wetting dry chemical constituents prior to application; installing a runway ice detection system; implementing anti-icing operations as a preventative measure against ice buildup.[6] The use of any deicing or anti-icing products that contain urea, consistent with the requirement established by 40 C.F.R. § 449, is prohibited.

(4) Aircraft Deicing – Coordinating with appropriate Co-Permittees, Massport 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 should be carried out by personnel most familiar with the particular aircraft and flight operations in question. Massport and Co-Permittee tenants shall consider using alternative deicing/anti-icing agents as well as containment measures for all applied chemicals. 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. Massport and its Co-Permittee tenants shall also

6 MSGP 2021, Part 8.S.4.1.6

consider using ice-detection systems and airport traffic flow strategies and departure slot allocation systems.[7]

(5) Management of Runoff - Where deicing and anti-icing operations occur, Massport and its Co-Permittee tenants shall describe and implement a program to control or manage contaminated runoff to reduce the amount of pollutants being discharged from the site. Massport and its Co-Permittee tenants shall consider the following BMP options (or their equivalents): a dedicated deicing facility with a runoff collection/recovery system; using vacuum/collection trucks; storing contaminated stormwater/deicing fluids in tanks and releasing controlled amounts to a POTW; and directing runoff into vegetative swales or other infiltration measures. Massport and its Co-Permittee tenants shall also consider recovering deicing materials when these materials are applied during non-precipitation events (e.g. covering storm sewer inlets, using booms, installing absorptive interceptors in the drains, etc.) to prevent these materials from later becoming a source of stormwater contamination. Used deicing fluid should be recycled whenever possible.

(6) Inspections – Massport shall specify the frequency of inspections in the SWPPP. At a minimum, inspections shall be conducted by qualified personnel monthly during the deicing season (e.g., October through April). Also, if significantly or deleteriously large quantities of deicing chemicals are being spilled or discharged, or if water quality impacts have been reported, Massport shall increase the frequency of inspections to weekly until such time as the deicing chemical spills/discharges and their associated impacts are minimized to the extent practicable.

(7) Re-evaluation of BMPs - The BMPs for deicing shall be re-evaluated after each deicing season, to determine if revised or supplemental BMPs are necessary in order to protect the water quality of the receiving waters. As described in Part I.D. below, the Permittee shall submit an annual Glycol Reduction Report, no later than September 30th each year, which will track the effluent levels of BOD and COD loading and the total usage of glycols for deicing on the airport.

g. BMPs for Identifying and Reducing Potential Illicit Discharges

(1) Purpose

Massport, with the cooperation of the Co-Permittees, will continue to implement a comprehensive plan to identify and eliminate dry and wet weather illicit discharges to its separate stormwater sewer system. The plan will focus on all potential sources of contamination, including but not limited to, the sanitary sewer system, lavatory handling practices, and illegal connections. These BMPs shall consist primarily of visual observations of the stormwater sewer and sanitary sewer systems including, video inspection of the sanitary sewer system and dye testing of the sewer pipes and

7 MSGP 2021, Part 8.S.4.1.6

building plumbing. The protocol may be modified to address atypical situations such as surcharged pipelines, groundwater or backwater conditions that preclude adequate inspection, or the presence of non-human wastes.

Massport may also employ additional investigative techniques, including indicator bacteria sampling, tracers (such as fluorescent whitening agents, caffeine, and sucralose), and genetic microbial source tracking, to identify potential inputs from the sanitary sewer system to the stormwater sewer system.

Within one year of the effective date of the permit, Massport shall 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, or other impairments that could lead to bacteria or other contaminants being discharged to stormwater outfalls or otherwise affect the proper operation of the storm drainage system. Within two years after the effective date of the permit, Massport shall submit a report to EPA and MassDEP outlining the findings of this assessment, describe measures that were taken to address any discovered illicit connections or damaged sewer lines as well as any additional remediation activities that were conducted or that are planned to address any impairments or illicit connections to the storm drainage system. Recently conducted assessments of any portions of the stormwater drainage system may be used to satisfy this requirement.

(2) Mapping

The 2007 Permit's SWPPP required the Permittee to develop maps showing a comprehensive depiction of key infrastructure and identifying potential cross-connections between the sanitary sewer and stormwater sewer systems and potential illicit sanitary sewer discharges. Within one year of the effective date of the permit, the Permittee shall update these maps to reflect new information, corrections, modifications, and improvements to the sewer systems and incorporate these into its SWPPP.

(3) Drainage Tributary Area Prioritization

The Permittee will continue to focus these investigative efforts on the prioritization of the drainage areas that it determined was appropriate pursuant to the current SWPPP. This prioritization shall be reviewed with the reissuance of this permit to ensure that it is still appropriate and revised as necessary.

(4) Sewer Rehabilitation, Cross-Connection Removal and Operational Improvements

Cross-connections as well as debris and grease build-up, structural deficiencies, and other system problems will be identified based on ongoing inspections and maintenance. Appropriate rehabilitation solutions will be implemented. Following

removal of a cross-connection, illicit discharge, or other rehabilitation, dye testing will be used to verify the correction.

(5) Comprehensive Sewer Investigation (CSI) Report

The Permittee shall continue to work from a master schedule that was developed during the 2007 permit term which shall be updated based on results of ongoing field investigation and rehabilitations. An annual CSI report will be prepared based on each calendar year's efforts and submitted by March 31 of the following year to EPA and MassDEP as described in Part D. below. The prioritization of the investigative program will be based on various factors, including stormwater bacteria results, access issues, and prior problem areas.

(6) Program Evaluation

The Permittee shall submit a program evaluation detailing the information below, provide a narrative description of the program over the last year, plans for the next year, and an evaluation of overall system health. If any major projects or improvements are identified as a result of an annual evaluation, then a schedule to address such projects shall be provided, particularly if their scope goes beyond the following year.

i. Number/Percentage of manholes/structures inspected,
ii. Number/Percentage of buildings inspected/dye tested,
iii. Footage/Percentage of pipe cleaned and inspected by video,
iv. Infrastructure defects identified and repaired,
v. Number/Percentage of illicit discharges and cross-connections identified,
vi. Number/Percentage of illicit discharges and cross-connection removed,
vii. Unit and total costs of removal of illicit discharges and cross-connections, and
viii. Reduction in indicator bacteria (fecal coliform and *Enterococci*) densities at outfalls.

h. BMPs for Identifying and Reducing Discharges from Fuel and Oil Sources

(1) Above Ground Storage Tanks (ASTs) at Fuel Farm

The accumulated stormwater in the large AST secondary containment areas shall be combined with the flow from the fuel loading rack and the treated flow from the hydrant vaults and pits (Outfall 01E) and sent to the treatment system at the fuel farm to discharge at internal Outfall 01D. See I.A.4 of the permit, above, for additional requirements and applicable effluent limits associated with these internal outfalls.

(2) SPCC Plan

These BMPs can reference and must be consistent with the Spill Prevention Control and Countermeasures (SPCC) Plan for the ASTs at the site. The SPCC Plan requires an owner or operator of certain ASTs to prepare and comply with written, site-specific, spill prevention plans (see 40 C.F.R. Part 112). Any more stringent requirement below must be incorporated into the SPCC Plan/SWPPP.

(3) Minimum Requirements for ASTs

These BMPs shall require at a minimum that all spilled or leaked jet fuel (JET-A) or any other fuel from the ASTs be removed from the secondary containment system as quickly as practicable and in all cases within 24 hours of such an occurrence. Following any such spills or leaks, the secondary containment system (the bermed area around the ASTs) must be thoroughly cleaned to remove any residual contamination.

(4) Underground Storage Tanks

At the fuel farm, there is a 20,000-gallon underground storage tank (UST) referred to as the equalization/holding tank. Stormwater from the hydrant vaults and pits of the centralized fueling system is stored in this UST. This water undergoes treatment and is sampled at internal Outfall 01E in accordance with Part I.A.4 of the Permit.

A 12,000-gallon underground storage tank (UST) stores diesel fuel used by onsite trucks and two 12,000-gallon UST store gasoline for fueling on-site vehicles. A 1,000-gallon UST stores diesel fuel for an on-site electrical generator. These USTs and any additional USTs which provide fueling shall require the following BMPs, as defined in Part (5) below.

(5) Minimum Requirements for USTs and Loading Rack Area at the Fuel Farm and any other facilities providing fueling

BMPs shall include the following, at a minimum:

i. Install, inspect, maintain, test, and monitor all USTs in accordance with local, state and federal requirements.
ii. Divert stormwater flows away from fueling areas through the use of grade control, berms, or curbing to avoid stormwater contact with contaminated surfaces.
iii. Use fuel dispensing equipment with "breakaway" hoses and emergency shutdown of flow feature.
iv. Use automatic shutoff valves on fuel tanker trucks.
v. Develop a standard operating procedure (SOP) and enforce the procedures prohibiting the "topping off" of on-site vehicles to prevent the spilling of fuel.
vi. Post "No Topping Off" signs on fuel pumps intended for vehicular fueling to prevent overfills.

vii. Provide and maintain an adequate supply of spill response materials and equipment in fueling areas and on fueling trucks.
viii. Collect and properly dispose of any spilled fuel.

(6) Fueling Aircraft

Each Co-Permittee at the facility shall develop a SOP for each type of equipment that fuels aircraft including fueling from the centralized fuel line or remote fueling by tanker truck. The SOP shall include procedures for responding to minor spills (less than Reportable Quantities (RQs) as defined by 40 C.F.R. § 302.4) and major spills (greater than or equal to RQs). SOPs shall include the documentation of any quantity of JET-A or any other fuel spilled including the time and location and stipulate the spill control equipment that will be available. SOPs from Co-Permittees that fuel aircraft shall be reviewed and approved by Massport's ER to ensure consistency with Massport's Aircraft Fueling BMPs. Massport shall ensure that all Co-Permittees that conduct aircraft fueling provide ongoing refresher training for their employees or contractors that conduct fueling operations.

Each operator of fueling equipment shall have a communication device available for the purpose of alerting management of any spill. Any major spill shall be reported within two hours to the proper authorities in accordance with local, state and federal requirements.

Upon learning of a major spill, any Co-Permittee manager shall immediately alert the ER for Massport, after notifying the proper authorities.

(7) BMPs for Fueling Practices

The following BMPs are designed to prevent stormwater from contacting pollutants associated with fueling activities. Massport and Co-Permittees must implement the BMPs applicable to their facility and specific operations:

i. Describe and implement measures that prevent or minimize the discharge of fuel to the storm sewer/surface waters resulting from fuel servicing activities or other operations conducted in support of the airport fuel system. Consider the following fueling BMPs (or their equivalents): implementing spill and overflow practices (e.g., placing absorptive materials beneath aircraft during fueling); using dry cleanup methods; and collecting stormwater runoff.
ii. Collect and properly dispose of any spilled fuel.
iii. Provide and maintain an adequate supply of spill response materials and equipment on all fueling trucks.
iv. Manage the disposal of water that collects in fuel tanks and fueling hydrant sumps by disposing off site or treating before disposing. Avoid any contact with stormwater or stormwater catch basins.

v. Record all maintenance activities and inspections relating to fueling equipment, containers, and tanks in dedicated logbooks for the centralized fuel line and fuel trucks.
vii. Massport shall post information, with wording such as "Do Not Dump. Drains to Boston Harbor" by catch basins and other inlets that convey stormwater within 100 yards of any aircraft fueling location, if practicable.

(8) Aircraft Maintenance Activities at Hangars (includes washing)

Minor maintenance activities are permitted at the terminals and the terminal aprons. Minor maintenance activities include addition of fluids, changing tires, batteries and hoses, and other maintenance activities that do not have the potential of a release of pollutants. Fluid changes are not considered to be minor maintenance.

Major maintenance is permitted inside hangars and other buildings designed for maintenance of aircraft. Major maintenance includes fluid changes, engine repairs or engine disassembly. Major maintenance activities shall be performed indoors, except in case of an emergency or other compelling circumstance. The emergency or compelling circumstance and details of the maintenance activity shall be documented.

The following BMPs are designed to prevent stormwater from contacting pollutants associated with aircraft maintenance activities. Co-Permittees must implement the BMPs applicable to their facility and specific operations. Below is a list of best management practices that shall be considered in the development of the SWPPP.

i. Maintenance activities shall occur indoors at designated maintenance facilities.
ii. Equipment shall be maintained in a clean condition and stored indoors in properly designed and suitably designated areas.
iii. “Dry" cleaning and surface preparation techniques shall be used when possible.
iv. Use water-based cleaning agents or non-chlorinated solvents shall be used to clean equipment parts when possible.
v. Maintenance shall be conducted in buildings equipped with runoff controls to prevent discharges to stormwater.
vi. Maintenance activities or equipment staging shall not be conducted near stormwater catch basins or any stormwater drainage feature.
vii. Install and maintain catch basin filter inserts that assist in the removal of oil and grease, sediments and floating pollutants that may discharge from maintenance work areas, active construction sites, and other areas that may experience higher than average loadings of such materials.
viii. Use drip pans, absorbent materials, booms, etc. to collect fluid drippings.
ix. Use absorbent materials at potential problem areas. Collect/remove absorbent and used spill control materials promptly. The materials shall be properly stored and disposed of offsite according to applicable state and federal regulations.
x. Conduct periodic cleaning of any catch basins (annually at a minimum) that receive runoff within 100 yards of an aircraft maintenance area, including catch

basins outside a hangar. Wastes from catch basins must be contained and properly disposed of off-site. The flushing of contents of catch basins to receiving waters is prohibited.

xi. Store all parts and equipment for aircraft maintenance indoors.

xii. Store and properly dispose of all fluids generated from aircraft maintenance. Provide secondary containment while storing waste fluids such as greases, oils, antifreeze, brake fluid, cleaning solutions, hydraulic fluid, batteries, transmission fluid, and filters.

xiii. Whenever possible, use biodegradable products and substitute materials with less hazardous properties.

xiv. Post information, with wording such as "Do Not Dump. Drains to Boston Harbor" by catch basins and other inlets that convey stormwater within 100 yards of any aircraft maintenance location including outside aircraft hangars, if practicable.

xv. No wash waters from cleaning aircraft are to be discharged to a stormwater drainage system.

(9) Automotive and Ground Service Equipment Maintenance Activities (including washing)

Automotive and ground service equipment (GSE) maintenance activities performed on airport property shall be performed indoors in maintenance garages or maintenance facilities, except in case of an emergency or other compelling circumstance or in the case of minor activities as described below. No maintenance activities shall be performed on terminal aprons at any time, except in case of an emergency. The emergency or compelling circumstance and details of the maintenance activity shall be documented in the SWPPP files. Minor maintenance activities are permitted outdoors. Minor maintenance activities include addition of fluids, changing tires, batteries and hoses, and other maintenance activities that do not produce the potential for release of pollutants. Fluid changes are not considered to be minor maintenance. Major maintenance is permitted indoors. Major maintenance includes fluid changes, engine repairs, and engine disassembly.

The following BMPs apply to maintenance activities such as fluid changes, engine repairs or engine disassembly of automotive vehicles or ground service equipment. The BMPs are designed to prevent stormwater from contacting pollutants associated with automotive and ground service equipment maintenance activities. Co-Permittees must implement the BMPs applicable to their facility and specific operations. Below is a list of best management practices that shall be considered in the development of the SWPPP.

i. Maintenance activities shall occur indoors at designated garage or maintenance facilities.

ii. Equipment shall be maintained in a clean condition and parts and equipment shall be stored indoors at properly designed and suitably designated areas.

iii. "Dry" cleaning and surface preparation techniques shall be used when possible.

iv. Use water-based cleaning agents or non-chlorinated solvents to clean equipment parts when possible.
v. Eliminate excessive buildup of oil and grease on vehicles, equipment and work area surfaces.
vi. Conduct maintenance in buildings equipped with runoff controls to prevent discharges to stormwater.
vii. Maintenance activities or equipment staging shall not be conducted near stormwater catch basins or any stormwater drainage feature.
viii. Install and maintain catch basin filter inserts that assist in the removal of oil and grease, sediments and floating pollutants that may discharge from maintenance work areas.
ix. Use drip pans, absorbent materials, booms, etc. to collect fluid drippings.
x. Use absorbent materials at potential problem areas. Collect/remove absorbent and used spill control materials promptly. The materials shall be properly stored and disposed of offsite according to applicable state and federal regulations.
xi. Store oil filters and empty lubricant containers in leak-proof containers staged on secondary containment indoors. Spent hydraulic oil cans, filters, or used absorbent materials are not to be placed in trash receptacles or dumpsters.
xii. Conduct periodic cleaning of any catch basins (annually at a minimum) that receive runoff within 100 yards of a maintenance garage or maintenance facility including catch basins outside of a facility. Wastes from catch basins must be collected and properly disposed of off-site. The flushing of contents of catch basins to receiving waters is prohibited.
xiii. Store and properly dispose of all fluids generated from automotive or GSE maintenance. Remove and properly dispose of batteries from automotive or GSE operations. Provide secondary containment while storing waste fluids such as greases, oils, antifreeze, brake fluid, cleaning solutions, hydraulic fluid, batteries, transmission fluid, and filters.
xiv. Whenever possible, use biodegradable products and substitute materials with less hazardous properties.
xv. Post information, with wording such as "Do Not Dump. Drains to Boston Harbor" by catch basins and other inlets that convey stormwater within 100 yards of any automotive or GSE maintenance location, if practicable.
xvi. No wash waters from cleaning automotive and GSE are to be discharged to a stormwater drainage system.

i. BMPs for Minimizing and Reducing Rubber Removal Sources

Runway Maintenance - Over time, materials such as tire rubber, oil and grease, paint chips, and jet fuel can build up on the surface of a runway causing a reduction in the friction of the pavement surface. When the friction level of a runway falls below a specific level, maintenance must be performed. The FAA recommends several methods for removing rubber deposits and other contaminants from a runway surface including the use of high pressure water, chemical solvents, high velocity particle impact, and mechanical grinding. If not properly managed, the materials removed from the runway surface could

be discharged into nearby surface waters. Similarly, if chemical solvents are used in these operations, improper management practices could result in discharges of the chemical solvents in the stormwater runoff from runway areas.

Massport uses high pressure water spray to periodically remove rubber deposits from the runways. Massport is required to implement measures to minimize the discharge of the dislodged material from runways during these operations into the drainage system. All collected rubber debris from this operation shall be disposed of according to local or State ordinances. Any washwaters from rubber removal operations shall not be discharged to the storm drain system or sanitary sewer. Such washwaters may be discharged to grassy areas of the airfield, provided all of the catch basins in the vicinity of such areas are covered. Massport shall notify the EPA and MassDEP of any changes to this procedure.

2. Long Term Reduction in Glycol Usage and BOD/COD Loading

Beginning the first full deicing season that is at least one year after the effective date of this permit, Massport and its Co-Permittee tenants 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 use of Blend-to-Temperature programs have been determined through Best Professional Judgement (BPJ) to constitute Best Available Technology (BTA) 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. PRTs are defined as technologies employed to control discharges resulting from aircraft deicing that are required to support normal flight operations at Logan Airport. For purposes of this permit, "Blend-to-Temperature" shall mean a system to blend Type I aircraft deicing fluids (ADF) based on temperature and other factors, including ensuring compliance with all FAA regulations and operational safety, that will reduce the use of these fluids.

The DDRP shall be incorporated into Massport's SWPPP within twelve (12) 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 one year after the effective date of this permit.

The DDRP shall include other glycol reduction measures, examples of which are provided in Part I.C.1.f, to demonstrate decreases in the annual effluent COD loadings and glycol usage during the deicing season as measured at Outfalls 001 and 002.

Massport shall submit the DDRP to EPA and MassDEP within six (6) 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 permittee shall implement the DDRP no later than the first full deicing season that is at least one year after the effective date of this permit. The DDRP shall be made available to the public to the extent allowable by law.

The DDRP shall include:

- A description of the Blend-to-Temperature program.
- A description of the methods and data that will be used to calculate and report the annual relative aircraft glycol use and COD/BOD loading reductions resulting from the implementation of the Blend-to-Temperature program.
- Descriptions of other PRTs implemented to further reduce the application and/or discharges of aircraft glycol in comparison to the absence of such PRTs.
- A requirement that Co-Permittees that deice aircraft quantify the volume of ADF used throughout each deicing season, a period that runs from October 1 through April 30. Massport shall implement data collection and analysis measures to quantify such use by Co-Permittees and submit its findings in a report to the agencies.
- Consideration of other deicer reduction practices described in the Airport Cooperative Research Program (ACRP) Report 14: Deicing Planning Guidelines and Practices for Stormwater Management Systems (2nd Edition, April 2020) as well as other industry publications, and
- Consideration of product substitution and operational changes for runway deicers that reduce the oxygen demand of deicer discharges, such as using products that contain a lower percentage of glycols and/or other oxygen demanding substances.

Massport, in cooperation with the Co-Permittees, shall submit an annual Glycol Reduction Report by September 30th each year, which tracks the implementation of the DDRP. The Glycol Reduction Report shall include:

- A description of the steps taken to develop and implement the DDRP.
- The annual relative (i.e., percent) reduction in the volume of glycol applied using the Blend-to-Temperature program compared to the volume of glycol that would have been applied in the absence of the Blend-to-Temperature program for the deicing season. All analyses and assumptions underlying this reduction estimate shall be provided.
- The annual relative (i.e., percent) reduction in COD/BOD loadings discharged to Outfalls 001 and 002 compared to the loadings that would have been discharged in the absence of the Blend-to-Temperature program for the deicing season. Massport will use the monthly sampling requirement for BOD/COD during each deicing season as well as any additional sampling results to assure that the extrapolated effluent loading estimates are reliably accurate and statistically significant. All analyses and assumptions underlying this reduction estimate shall be provided.

- The estimated total annual amounts of glycol applied and potentially available for discharge via Outfalls 001 and 002 as a result of aircraft deicing operations.
- Consideration of weather and other factors that affect the performance of the Blend-to-Temperature program.
- A description of any PRTs in addition to Blend-to-Temperature that Massport and the Co-Permittees have implemented or evaluated.
- 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.
- Massport and its Co-Permittee tenants will also continue to assess other measures to reduce the use and discharge of glycols and Massport shall also reduce the use of acetate formulations for the deicing of ramps, taxiways, and runways to the extent practicable.

3. Discharges of Chemicals and Additives

The discharge of any chemical or additive, including chemical substitution, which was not reported in the application submitted to EPA or provided through a subsequent written notification submitted to EPA is prohibited. Upon the effective date of this permit, chemicals and/or additives which have been disclosed to EPA may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this permit 30 days following written notification to EPA unless otherwise notified by EPA. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

a. The following information for each chemical and/or additive that will be discharged:

(1) Product name, chemical formula, general description, and manufacturer of the chemical/additive;
(2) Purpose or use of the chemical/additive;
(3) Safety Data Sheet (SDS), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, for each chemical/additive;
(4) The frequency (e.g., daily), magnitude (i.e., maximum application concentration), duration (e.g., hours), and method of application for the chemical/additive;
(5) The maximum discharge concentration; and
(6) The vendor's reported aquatic toxicity, if available (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

b. Written rationale which demonstrates that the discharge of such chemicals and/or additives as proposed will not: 1) Add any pollutants in concentrations which exceed permit effluent limitations; 2) Exceed any applicable water quality standard; and 3) Add

any pollutants that would justify the application of permit conditions that are different from or absent in this permit.

4. After one year of monitoring, if all samples are non-detect for all six PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring. Until written notice is received from EPA indicating that the PFAS monitoring requirements have been changed, the Permittee is required to continue the monitoring specified in this permit. *See* Reporting Requirements in Part I.D.3.a(8).

5. pH Study

In order to continue the pH limit range of 6.0 - 8.5 S.U. in future permits, within three (3) years of the effective date of the permit, the Permittee shall conduct a study to demonstrate that the pH in the receiving water does not exceed the range of 6.5-8.5 S.U. At least six (6) months prior to beginning to conduct the study, the Permittee shall contact MassDEP (massdep.npdes@mass.gov) for guidance on how to complete the study. The completed pH study shall be submitted in accordance with Part I.D.2. and Part I.D.5 below.

D. REPORTING REQUIREMENTS

Unless otherwise specified in this permit, the Permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State no later than the 15th day of the month electronically using NetDMR. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessed from the internet at https://netdmr.zendesk.com/hc/en-us.

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. *See* Part I.D.5. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this permit.

3. Submittal of Requests and Reports to EPA/WD

a. The following requests, reports, and information described in this permit shall be submitted to the EPA/WD NPDES Applications Coordinator in EPA's Water Division:

(1) Transfer of Permit notice;
(2) Request for changes in sampling location;
(3) SWPPP reports and certifications, if required;
(4) Request to discharge new chemicals or additives;
(5) Request for change in WET testing requirements;
(6) Report on unacceptable dilution water/request for alternative dilution water for WET testing;
(7) Deicer Discharge Reduction Plan/Glycol Reduction Report; and
(8) Request for discontinuation of per- and polyfluoralkyl substances (PFAS) sampling requirements.

b. These reports, information, and requests shall be submitted to EPA/WD electronically at R1NPDESReporting@epa.gov or by hard copy mailed to the following address:

U.S. Environmental Protection Agency
Water Division
EPA/WD NPDES Applications Coordinator
5 Post Office Square - Suite 100 (06-03)
Boston, MA 02109-3912

4. Submittal of Reports in Hard Copy Form

a. The following notifications and reports shall be signed and dated originals, submitted in hard copy, with a cover letter describing the submission:

(1) Written notifications required under Part II. Beginning December 21, 2025, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

b. This information shall be submitted to EPA ECAD at the following address:

U.S. Environmental Protection Agency
Environmental Compliance Assurance Division
Water Compliance Section
5 Post Office Square, Suite 100 (04-SMR)
Boston, MA 02109-3912

5. State Reporting

Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

Massachusetts Department of Environmental Protection
Bureau of Water Resources
Division of Watershed Management
8 New Bond Street
Worcester, Massachusetts 01606

An electronic copy of the pH Study described in Part I.C.5 shall be submitted to massdep.npdes@mass.gov.

6. Verbal Reports and Verbal Notifications

   a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

   b. Verbal reports and verbal notifications shall be made to:

617-918-1510

   c. Verbal reports and verbal notifications shall be made to the State's Emergency Response at:

888-304-1133

E. STATE 401 CERTIFICATION CONDITIONS

This Permit is in the process of receiving state water quality certification issued by the State under § 401(a) of the CWA and 40 C.F.R. § 124.53. EPA will incorporate by reference all State water quality certification requirements (if any) into the Final Permit.

ATTACHMENT A

MARINE ACUTE
TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**

- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

Acute toxicity data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#methods

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any holding time extension. Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine[1] (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate

[1] For this protocol, total residual chlorine is synonymous with total residual oxidants.

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6^{o} C.

IV. DILUTION WATER

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2,Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water is found to be, or suspected to be toxic or unreliable, ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is

species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency, Region 1
Five Post Office Square, Suite 100
Mail Code OEP06-5
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
Five Post Office Square, Suite 100
Mail Code OES04-4
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcementandassistance/dmr.html for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST[1]

1. Test type	48hr Static, non-renewal
2. Salinity	25ppt ± 10 percent for all dilutions by adding dry ocean salts
3. Temperature (^{o}C)	20^{o}C ± 1^{o}C or 25^{o}C ± 1^{o}C, temperature must not deviate by more than 3^{o}C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, < 24 hours age range
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated Artemia naupli while holding prior to initiating the test
13. Aeration [2]	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions [3]	5 plus a control. An additional dilution at the permitted effluent concentration (%

	effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST[1]

1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt ± 10 % by adding dry ocean salts
3. Temperature	20°C ± 1°C or 25°C ± 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated Artemia nauplii while holding prior to initiating the test
13. Aeration[2]	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions[3]	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

In general, if reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥3 standard deviations for IC25s and LC50 values and ≥ two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Level for effluent[*1] (mg/L)
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine [*2]	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

Superscript:

[*1] These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

[*2] Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

-Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
-Method 4500-CL G DPD Photometric Method.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See flow chart in Figure 6 on page 73 of EPA 821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 87 of EPA 821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
    - Facility name
    - NPDES permit number
    - Outfall number
    - Sample type
    - Sampling method
    - Effluent TRC concentration
    - Dilution water used
    - Receiving water name and sampling location
    - Test type and species
    - Test start date
    - Effluent concentrations tested (%) and permit limit concentration
    - Applicable reference toxicity test date and whether acceptable or not
    - Age, age range and source of test organisms used for testing
    - Results of TAC review for all applicable controls
    - Permit limit and toxicity test results
    - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at http://www.epa.gov/NE/enforcementandassistance/dmr.html

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures;
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s);
- Reference toxicity test control charts;
- All sample chemical/physical data generated, including minimum levels (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint.

Attachment B

Logan International Airport NPDES Permit - MA0000787
2020 NPDES Co-Permittees

Contact	Organization
Brian Hennessey	Massachusetts Port Authority
Gabriel Figueiredo	ABM Aviation, Inc.
Jay Elkhoury	Aero Mag 2000 BOS LLC
Ed Pontremoli	AeroSnow Removal Corporation
Derrick Proffitt, GM	American Airlines, Inc.
Joseph Xenakis	British Airways
Jennifer Tango	Cape Air
Ravindra Dadhich, GM	Delta Air Lines, Inc.
William F. White/AM Jim McSwiney/PM	Federal Express
Shawn Theriault	Ground Services International, dba dnata
Dan Blake	Jet Blue Airways
Tony Santilli	Nouria Energy Corp./Shell Station
Deborah Tavernese	Paul Revere Transportation LLC/ Green Bus Depot
Dominic Patti	Ready Jet, Inc.
Rick Muse	Signature Flight Support
Stephen Lupis	Snowlift, LLC
Elizabeth Criscuolo	Southwest Airlines Co.
Angelo Grech	Swissport Fueling/BosFuel

Attachment B

Logan International Airport NPDES Permit - MA0000787
2020 NPDES Co-Permittees

Contact	Organization
Bryan Amaro	Swissport North America, Inc.
Eirika Gudjonsdottir	Triangle Aviation Services
Christopher Painter	United Airlines
Genia Lomas (AM)/ William Sellers (PM)	United Parcel Service (UPS)

Notes:

1. ASTAR Air Cargo discontinued operations at Logan Airport on January 27, 2008.
2. Swiss International was delisted as a co-permittee on December 18, 2008.
3. Southwest Airlines Co. was added as a co-permittee on July 23, 2009.
4. Northwest Airlines was delisted as a co-permittee on October 31, 2009.
5. Oxford Airport Technical Services was delisted as a co-permittee on January 4, 2010.
6. Diesel Direct, Inc. was added as a co-permittee on July 8, 2010.
7. Ground Services International, Inc. was added as a co-permittee on August 31, 2010.
8. American Eagle was delisted as a co-permittee on November 18, 2011.
9. Aramark Aviation Services LP ceased business operations on May 17, 2011.
10. Gate Gourmet, Inc. was delisted as a co-permittee on December 7, 2012.
11. Paul Revere Transportation LLC was added as a co-permittee as of January 1, 2013.
12. On January 1, 2013, Southwest Airlines and Air Tran Airways managed as one co-permittee.
13. Effective April 1, 2013, United Air Lines, Inc. and Continental Airlines, Inc. merged and became United Airlines, Inc.
14. On August 2, 2013, Swissport International, Ltd. acquired Servisair LLC.
15. Effective December 9, 2013, U.S. Airways merged with American Airlines.
16. On January 1, 2015, South Terminal Corporation was delisted as the business dissolved.
17. Quantem Aviation Services was delisted as a co-permittee as of December 21, 2015.
18. Swissport USA, Inc. added as a co-permittee as of January 1, 2016.
19. Energy North Inc. added as a co-permittee as of January 1, 2016.
20. Aviation Port Services added as a co-permittee as of September 14, 2016.
21. Aero Mag 2000 added as a co-permittee as of January 23, 2018.
22. Aviation Port Services delisted as a co-permittee in March, 2018.
23. Nouria Energy Corp. added as a co-permittee effective June 1, 2019.
24. Energy North Group delisted as a co-permittee effective June 1, 2019.
25. ReadyJet, Inc. added as co-permittee as of September 26, 2019.

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)[1]

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[1] Updated July 17, 2018 to fix typographical errors.

A. GENERAL REQUIREMENTS

1. Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit

condition.

3. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from responsibilities, liabilities or penalties to which the Permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

5. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

6. Confidentiality of Information

a. In accordance with 40 C.F.R. Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or Permittee;
(2) Permit applications, permits, and effluent data.

c. Information required by NPDES application forms provided by the Director under 40 C.F.R. § 122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

7. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The Permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this Section.

c. Notice

(1) *Anticipated bypass*. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

(2) *Unanticipated bypass*. The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

d. *Prohibition of bypass.*

(1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The Permittee submitted notices as required under paragraph 4.c of this Section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

a. *Definition*. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or

improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated; and
(3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
(4) The Permittee complied with any remedial measures required under B.3. above.

d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or

knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).

(3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. *Transfers*. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.

d. *Monitoring reports*. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. *Twenty-four hour reporting.*

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.

h. *Other information.* Where the Permittee becomes aware that it failed to submit any

relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

i. *Identification of the initial recipient for NPDES electronic reporting data*. The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under paragraph A.6. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and federal standards and limitations to which a "discharge," a "sewage sludge use or disposal practice," or a related activity is subject under the CWA, including "effluent limitations," water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," pretreatment standards, and "standards for sewage sludge use or disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in

"approved States," including any approved modifications or revisions.

Approved program or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

Best Management Practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Bypass see B.4.a.1 above.

C-NOEC or *"Chronic (Long-term Exposure Test) – No Observed Effect Concentration" means* the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483and Public Law 97-117, 33 U.S.C. 1251 *et seq*.

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily Discharge means the "discharge of a pollutant" measured during a calendar day or any

other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the "discharge of a pollutant."

Director means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts' authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by Permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Director on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under section 304(b) of CWA to adopt or revise "effluent limitations."

Environmental Protection Agency ("EPA") means the United States Environmental Protection

Agency.

Grab Sample means an individual sample collected in a period of less than 15 minutes.

Hazardous substance means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Interference means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal.

LC_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be

publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.

(b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program."

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants;"

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source;" and

(d) Which has never received a finally effective NPDES permit for discharges at that "site."

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Director in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Director shall consider the factors specified in 40 C.F.R. §§ 125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System."

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge (see definition above) which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (40 C.F.R § 122.28). "Permit" does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or "proposed permit."

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq*.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train*, 8 E.R.C. 2120 (D.D.C. 1976), *modified* 12 E.R.C. 1833 (D.D.C. 1979)); also listed in Appendix A of 40 C.F.R. Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a "POTW."

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly owned treatment works (POTW) means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary industry category means any industry which is not a "primary industry category."

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does

not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substance designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (*see* 40 C.F.R. § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or waste water treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

disposal in 40 C.F.R. Part 503 as a "treatment works treating domestic sewage," where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Waste pile or *pile* means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States or waters of the U.S. means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands;"

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

    (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

    (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

    (3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test.

*Zone of Initial Dilution (*ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen

kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0000787

PUBLIC NOTICE START AND END DATES: April 12, 2021 – June 11, 2021

NAME AND MAILING ADDRESS OF APPLICANT:

Massachusetts Port Authority
Environmental Management Unit
One Harborside Drive, Suite 200S
East Boston, Massachusetts 02128-2090

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Massachusetts Port Authority
Logan International Airport
East Boston, Massachusetts 02128-2090

RECEIVING WATER AND CLASSIFICATION:

Boston Harbor - Class SB (MA 70-01); Boston Inner Harbor - Class SB (CSO) (MA 70-02)
Winthrop Bay - Class SB (MA 70-10)

SIC CODE: 4581 – Airports, Flying Fields, and Airport Terminal Services

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1.0 Proposed Action

The Massachusetts Port Authority ("Massport" or "Permittee") is an independent, public authority that manages air and sea transportation infrastructure in the Commonwealth of Massachusetts.

Massport has applied to Region 1 of the U.S. Environmental Protection Agency (EPA") for reissuance of a National Pollutant Discharge Elimination System ("NPDES") permit to discharge stormwater associated with industrial activity from: (1) vehicle maintenance areas; (2) equipment cleaning areas; and (3) aircraft, runway, and pavement deicing and anti-icing activities, from Outfalls 001 through 005, and 44 airfield outfalls to Boston Harbor, Boston Inner Harbor, and Winthrop Bay. Table 1 lists the locations and receiving waters of all outfalls from the property. Table 2 lists the acreage of each drainage area, as well as how much of each drainage area is considered impervious (paved). Outfalls 001 through 005 are referred to as the "major" outfalls, since they discharge stormwater from drainage areas where the majority of industrial activity occurs.

The existing Permit was issued on July 31, 2007, became effective on September 29, 2007, and expired five years from the last day of the month preceding the effective date, on August 31, 2012 ("2007 Permit"). The Permittee timely reapplied for permit coverage, and its application was deemed complete by EPA's letter dated April 25, 2012. Massport submitted the permit renewal application for its discharges and on behalf of its Co-Permittee tenants for their discharges, which are further described below in Section 3.2.1. Since the renewal application was deemed timely and complete by EPA, the 2007 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6.

This permit covers only Massport's industrial stormwater discharges at Logan International Airport and does not cover Massport's municipal separate storm sewer (MS4) discharges. Massport should submit a Notice of Intent to be covered under the 2016 Massachusetts Small MS4 General Permit.

2.0 Statutory and Regulatory Authority

Congress passed the Federal Water Pollution Control Act of 1972 (Public Law 92-500, October 18, 1972) (hereinafter the Clean Water Act or CWA), 33 U.S.C. 1251 et seq., with the stated objectives to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 101(a), 33 U.S.C. 1251(a). To achieve this goal, the CWA provides that "the discharge of any pollutant by any person shall be unlawful" except in compliance with other provisions of the statute. CWA section 301(a). 33 U.S.C. 1311. The CWA defines "discharge of a pollutant" broadly to include "any addition of any pollutant to navigable waters from any point source." CWA section 502(12). 33 U.S.C. 1362(12). EPA is authorized under CWA section 402(a) to issue a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant from a point source. These NPDES permits are issued by EPA or NPDES-authorized state or tribal agencies. Since 1972, EPA and the authorized states have issued NPDES permits to thousands of dischargers, both industrial (e.g., manufacturing, energy and mining facilities) and municipal (e.g., sewage treatment plants). As required under Title III

of the CWA, EPA has promulgated Effluent Limitations Guidelines (ELGs) and New Source Performance Standards (NSPS) for many industrial point source categories and these requirements are incorporated into NPDES permits.

The Water Quality Act (WQA) of 1987 (Public Law 100-4, February 4, 1987) amended the CWA, adding CWA section 402(p), requiring implementation of a comprehensive program for addressing stormwater discharges. 33 U.S.C. 1342(p). Section 405 of the WQA of 1987 added section 402(p) of the CWA, which directed the EPA to develop a phased approach to regulate stormwater discharges under the NPDES program. The CWA regulates storm water if the discharge falls into one of five categories, the second of which is at issue here:

> (A) A discharge with respect to which a permit has been issued under this section before February 4, 1987.
> (B) A discharge associated with industrial activity.
> (C) A discharge from a municipal separate storm sewer system serving a population of 250,000 or more.
> (D) A discharge from a municipal separate storm sewer system serving a population of 100,000 or more but less than 250,000.
> (E) A discharge for which the Administrator or the State, as the case may be, determines that the stormwater discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

33 U.S.C. § 1342 (p)(2)(A) through (E) (emphasis added).

EPA published a final regulation on the first phase of this program on November 16, 1990, establishing permit application requirements for "stormwater discharges associated with industrial activity." See 55 FR 47990 (Nov. 16, 1990). "Dischargers of storm water associated with industrial activity" must apply for an individual permit or seek coverage under a promulgated storm water general permit. 40 CFR § 122.26(c)(1); *see also* 33 U.S.C. § 1342(p)(3)(A). 40 C.F.R. § 122.26(b)(14) defines "[s]torm water discharge associated with industrial activity [as] the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant." Industries covered by the term "industrial activity" are defined in accordance with SIC codes, which are used to identify regulated industrial activities. *See* 40 C.F.R. § 122.26(b)(14).

EPA issued the Multi-Sector General Permit (MSGP) under this statutory and regulatory authority, the current version of which was effective on March 1, 2021.[1] For the 2021 MSGP, EPA updated the requirements for "Sector S – Air Transportation Facilities" to incorporate the airport deicing effluent limitation guidelines and new source performance standards. Airlines and airports conduct deicing operations on aircraft and airfield pavement to ensure the safety of passenger and cargo flights. In the absence of controls, deicing chemicals are widely dispersed causing pollutants to enter nearby rivers, lakes, streams, and bays. On May 16, 2012, EPA published the Airport Deicing ELG in the Federal Register to control the discharge of pollutants from airport deicing operations to surface waters. See 40 CFR Parts 9

[1] The MSGP is currently available at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities

and 449. The requirements largely apply to wastewater associated with the deicing of airfield pavement at primary airports. The rule also established New Source Performance Standards (NSPSs) for wastewater discharges associated with aircraft deicing for a subset of new airports. These guidelines are implemented in discharge permits issued by states and EPA Regional Offices under the NPDES program. Therefore, the 2021 MSGP incorporates the requirements from the Airport ELG that are appropriate for the types of discharges the MSGP authorizes. These requirements are found in Part 8.S.8 of the MSGP. Material handling and storage, equipment maintenance and cleaning, and other activities at Massport Logan are often exposed to the weather. Runoff from rainfall or snowmelt that comes in contact with these activities can pick up pollutants and transport them directly to adjacent waterbodies via a storm sewer and degrade water quality. Therefore, this Permit has incorporated applicable elements of the MSGP. These include requirements based on the final ELG for jet and airport deicing operations. Also, the 2021 MSGP clarifies airport operators' responsibilities and permit requirements that airport authorities may conduct on behalf of airport tenants. *See* 2021 Multisector General Permit Sector S – Air Transportation Facilities at Part 8.S.3.

Section 301 and 306 of the CWA provides for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, 304(b) and 306; 40 CFR Parts 122, 125, 131 and 401.

2.1 Technology-Based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under §§ 301(b), 306 and 402 of the CWA to meet best practicable control technology currently available (BPT) for certain conventional pollutants and some metals, best conventional control technology (BCT) for other conventional pollutants, best available technology economically achievable (BAT) for toxic and non-conventional pollutants, and NSPS based on the best available demonstrated control technology (BADT) for new sources. *See* 40 CFR § 125 Subpart A and 40 CFR § 401.12.

Subpart A of 40 CFR Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under § 402(a)(1) of the CWA. EPA promulgates NSPS under CWA § 306 and 40 CFR § 401.12. *See also* 40 CFR §§ 122.2 (definition of "new source") and 122.29.

In general, ELGs for non-POTW facilities must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989. *See* 40 CFR § 125.3(a)(2). Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by an NPDES permit. *See* 40 CFR § 122.47(a). In the absence of published technology-based effluent guidelines, the permit writer is authorized under § 402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

2.2 Water Quality-Based Requirements

The CWA and federal regulations also require that permit effluent limits based on water quality considerations be established for point source discharges and/or cooling water withdrawals when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* § 301(b)(1)(C) of the CWA and 40 CFR §§ 122.44(d)(1), 122.44(d)(5), 125.84(e) and 125.94(i).

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all waterbodies within the State. *See* CWA § 303 and 40 CFR §§ 131.10, 131.11, and 131.12. Generally, WQSs consist of three parts: 1) the designated use or uses assigned for a waterbody or a segment of a waterbody; 2) numeric or narrative water quality criteria sufficient to enable the waterbody to attain its assigned designated use(s); and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. The applicable State WQSs can be found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

As a matter of state law, state WQSs specify different waterbody classifications, each of which is associated with certain designated uses and numeric and narrative water quality criteria. Permit limits must allow the water body to attain the applicable designated uses and water quality criteria. When using chemical-specific numeric criteria to develop permit limits, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to monthly average limits.

When permit effluent limits are necessary for a pollutant to allow the receiving water to meet narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: (1) based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," (2) based on a "case-by-case basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, (3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A-C).

2.2.2 Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife, and to support recreation in and on the water, unless

the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

Massachusetts' statewide anti-degradation policy, entitled, "Antidegradation Provisions," is found in the State's WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled, "Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00" dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the anti-degradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses, of a receiving waterbody must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the state's anti-degradation requirements, including the protection of exiting uses of the receiving water. This permit does not authorize new or increased discharges. Therefore, MassDEP is not required to conduct an antidegradation review for this permit reissuance.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) Unimpaired and not threatened for all designated uses; 2) Unimpaired waters for some uses and not assessed for others; 3) Insufficient information to make assessments for any uses; 4) Impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) Impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum load of the pollutant that can be discharged to a specific water body while maintaining WQSs for designated uses, and allocates that load to the various pollutant sources, including point source discharges, subject to NPDES permits. *See* 40 CFR § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation for a NPDES permitted discharge, the effluent limit in the permit must be consistent with the assumptions and requirements of that waste load allocation. *See* 40 CFR § 122.44(d)(1)(vii)(B).

MassDEP published a Final Pathogen TMDL in October 2018 for Boston Harbor, Weymouth-Weir, and Mystic Watersheds. This TMDL was subsequently approved by EPA. See Section 4.1 below for more information. This draft permit's effluent limitations and monitoring requirements are consistent with that TMDL.

2.2.4 Reasonable Potential

Pursuant to 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements, in addition to TBELs, that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality." *See* 40 CFR § 122.44(d)(1)(i). There is reasonable potential to cause or contribute to an excursion if the projected or actual in-stream concentration exceeds the applicable criterion. If the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the pollutant. *See* 40 CFR § 122.44(d)(1)(iii).

In determining reasonable potential, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. EPA typically considers the statistical approach outlined in *Technical Support Document for Water Quality-Based Toxics Control* (TSD)[2] to determine if the discharge causes, has the reasonable potential to cause, or contributes to an excursion above any WQS. *See* 40 C.F.R. § 122.44(d). EPA's quantitative approach statistically projects effluent concentrations based on available effluent data, which are then compared to the applicable water quality criteria. This draft permit contains EPA's reasonable potential determination for the pollutants Nonylphenol and Tolyltriazole.

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs or the state waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes

[2] March 1991, EPA/505/2-90-001.

properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing § 405(d) of the CWA are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the EPA permit appeal procedures of 40 CFR § 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to final permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of state law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by state law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." *See* 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR § 122.4(d) and 40 CFR § 122.44(d).

2.3 Effluent Flow Requirements

Generally, EPA uses effluent flow both to determine whether an NPDES permit needs certain effluent limitations and to calculate the effluent limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C) of the CWA. Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced and the calculated effluent limitations might not be sufficiently protective (i.e., might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" effluent flow assumptions through imposition of permit conditions for effluent flow.[3] In this regard, the effluent flow limit is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on effluent flow is within EPA's authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d); 122.43 and 122.44(d). A condition on the discharge designed to ensure the validity of EPA's WQBELs and reasonable potential calculations is encompassed by

[3] EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," which is a function of both the effluent flow and receiving water flow. 40 CFR §122.44(d)(1)(ii). EPA guidance directs that this "reasonable potential" analysis be based on "worst-case" conditions. *See In re Washington Aqueduct Water Supply Sys., 11 E.A.D. 565, 584 (EAB 2004)*.

the references to "condition" and "limitations" in CWA §§ 402 and 301 and its implementing regulations, as WQBELs are designed to assure compliance with applicable water quality regulations, including anti-degradation requirements. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with the CWA.

In addition, as provided in Part II.B.1 of this permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the Facility's wastewater treatment systems as designed includes operating within the Facility's design effluent flow. Thus, the effluent flow limitation is necessary to ensure proper facility operation, which in turn is a requirement applicable to all NPDES permits. *See* 40 CFR § 122.41.

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

The CWA and EPA's implementing regulations authorize the Agency to include monitoring and reporting requirements in NPDES permits. *See* CWA §§ 308(a) and 402(a)(2), 33 U.S.C. §§ 1318(a) and 1342(a)(2); 40 C.F.R. § 122.48. *See also* 40 C.F.R. § 122.41(j).

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2) of the CWA, and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The draft permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the wastewater discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the state may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to § 304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.[4] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

[4] Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

- The method minimum level[5] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapter N or O, for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to electronically report monitoring results obtained during each calendar month as a Discharge Monitoring Report (DMR) to EPA and the State using NetDMR no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has allowed participants to discontinue mailing in hard copy forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessed from the following website: https://netdmr.zendesk.com/hc/en-us. Further information about NetDMR can be found on the EPA Region 1 NetDMR website.[6]

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Draft Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit such as for providing written notifications required under the Part II Standard Conditions.

2.5 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified with less stringent limitations or conditions than those contained in a previous permit unless in compliance with one of the specified exceptions to those requirements. *See* §§ 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1) and (2). Anti-backsliding provisions apply to effluent limits based on technology, water quality, and/or state certification requirements.

[5] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

[6] https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2007 Permit unless one of the exceptions listed in 40 CFR § 122.44(l)(2)(i) and/or CWA § 402(o)(2) applies in accordance with § 303(d)(4). Discussion of any applicable exceptions are discussed in sections that follow. Therefore, the Draft Permit complies with the anti-backsliding requirements of the CWA.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

Massport owns and operates Logan International Airport ("Logan"). Logan serves the Boston metropolitan area and New England and is located in East Boston. It occupies approximately 2,400 acres, which includes 94 buildings, six runways and numerous ancillary facilities. Massport owns the stormwater sewer system within the property boundary of the airport. This stormwater sewer system includes the storm sewers, roads, runways or other impervious surfaces with drainage systems, catch basins, culverts, curbs, gutters, ditches, constructed channels or storm drains on the property. See Figure 1 for an outfall map and Figure 2 for a map of the receiving waters and major outfalls.

Figure 3 displays an overview of the site which includes runways, taxiways, main outfalls, airfield outfalls, and main drain lines within each drainage area contributing to the outfalls as well as the direction of stormwater flow. The stormwater discharges associated with industrial activity on the site originate from areas and activities operated by Massport and its Co-Permittee tenants, also referred to as fixed-base operators (FBOs). See Table 3 for a listing of industrial activities that have the potential to discharge pollutants from the drainage areas of all outfalls. In addition, there are varying levels of groundwater infiltration into the major outfalls due to the age and condition of the subsurface drainage system.

3.1.1 Effluent Limitation Guidelines

On May 16, 2012, EPA promulgated technology-based National Effluent Limitation Guidelines (ELG) for discharges from airports, flying fields, and airport terminal services (Standard Industrial Code 4581) at 40 CFR Part 449 – Aircraft Deicing Point Source Category. 95 Fed. Reg. 29168 (May 16, 2012). These regulations require that any existing point source with at least 1,000 annual non-propeller aircraft departures comply with certain requirements representing the degree of effluent reduction attainable by the application of BAT (best available technology economically achievable). 40 CFR § 449.10. Specifically:

Airfield pavement deicing: There shall be no discharge of airfield pavement deicers containing urea. To comply with this limitation, any existing point source must certify annually that it does not use airfield deicing products that contain urea. Alternatively, airfield pavement discharges at every discharge point must achieve the numeric limitations for ammonia of 14.7 mg/l, prior to any dilution or commingling with any non-deicing discharge. 40 CFR § 449.10(a), Table 1. Since Massport discontinued the use of any airfield pavement deicing chemical containing urea as of February 2010, the Permittee is in compliance with this regulation. The use of urea for any deicing at the airport is prohibited.

In the Proposed Rule for the Aircraft Deicing Category, 74 Fed. Reg. 44676 (August 28, 2009), EPA proposed three options to control aircraft deicing discharges for those airports with over 1,000 annual jet departures that conduct deicing operations. Logan falls into this category. All three of these options included the urea substitution requirement or, alternatively, the requirement to meet the limit of 14.7 mg/l as described above. In addition, two of the options required large ADF users such as Logan to collect 40% of aircraft deicing fluid (ADF) as well as numeric COD limitations for direct discharges of collected ADF. The third option, which EPA selected in the Final Rule, 77 Fed. Reg. 29168 (May 16, 2012), did not establish ELGs for aircraft deicing discharges, but instead left the determination of BAT requirements for each airport to the discretion of the permit writer on a case-by-case "best professional judgment" basis based on site-specific conditions. *See* 77 Fed. Reg. at 29178. EPA found that none of the ADF collection technologies considered for the Final Rule represented the best technology available for the entire category. Rather, EPA concluded that BAT determinations should be made on a site-specific basis because such determinations appropriately consider localized operational constraints, land availability, safety considerations, and potential impacts to flight schedules. *See* 77 Fed. Reg. 29178-79.

The Permittee's ongoing efforts to reduce impacts to receiving waters from the discharge of aircraft deicing fluids (ADF) are consistent with the 2007 Permit's SWPPP. The SWPPP requirements of this Draft Permit require that the Permittee continue to study and implement measures to reduce ADF discharges and consider options to capture and/or dispose of ADF. In support of these efforts, the Permittee submitted a Deicer Management Feasibility Study (DMFS) to EPA in May of 2017, which assesses methods to further reduce the discharge of ADF from the airport. Based on the recommendations of this report, the Draft Permit contains specific requirements for the Permittee and its Co-Permittee tenants that deice using glycol compounds to implement a blend-to-temperature program for the majority of deicing applications. This program involves the blending of water and glycol compounds at certain proportions, depending on air temperatures, which generally results in progressively lower glycol proportions with rising temperatures. The Permittee has estimated that fully implementing this program will result in up to a 30% reduction in ADF use at the airport, as the standard pre-mixed glycol formulations are replaced with blends that contain lower glycol percentages. Upon consideration of localized operational constraints, land availability, safety considerations, potential impacts to flight schedules and other relevant factors, EPA in its BPJ has determined that these requirements constitute BAT for Logan relative to the control of ADF discharges.

Part I.D of the Draft Permit includes the implementation requirements of this blend-to-temperature program, which is technology-based, and which requires quantification of permanent decrease in the amounts of glycols used and discharged at Outfalls 001 and 002, which receive the majority of ADF discharges. The Co-Permittees will be required to continue to evaluate and implement additional glycol reduction measures through the term of this Permit and consistent with the Deicer Discharge Reduction Plan in Part I.D. of the Permit.

Finally, EPA has not promulgated technology-based effluent limitation guidelines for stormwater discharges from airports. In accordance with CWA § 402(a)(1)(B), EPA has determined the appropriate technology-based level of control based on best professional judgment. See also CWA section 402(a)(1); 40 C.F.R. § 125.6. The CWA and NPDES regulations authorize EPA to include non-numeric effluent limits in NPDES permits. See CWA § 402(a)(1); 40 CFR §

122.44(k)(3). Therefore, in addition to the Draft Permit's numeric effluent limits on select parameters in stormwater discharges, the Draft Permit includes non-numeric, technology-based effluent limits applicable to all stormwater discharges.

3.2 Location and Types of Discharges

The airport is located at Latitude 42° 20 ' 54.0" Longitude 71° 0' 25" and is adjacent to Boston Harbor, Boston Inner Harbor, and Winthrop Bay. See Table 1 for coordinates of all permitted outfalls.

3.2.1 Tenant Co-Permittees

Many tenants and contractors (often referred to as "fixed base operators" (FBOs)) are named as "Co-Permittees" due to the stormwater discharges associated with their industrial activities. "Co-Permittee" is defined as a permittee in a NPDES permit that is only responsible for permit conditions relating to the discharge for which it is an operator, as defined at 40 CFR § 122.26(b)(1). An entity meets the definition of a Co-Permittee if it performs industrial activities at an air transportation facility such as Logan, classified under Standard Industrial Classifications (SIC) 4581, and has vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Vehicle maintenance includes vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication. See 40 CFR § 122.26(b)(14)(viii). Furthermore, entities are deemed to be Co-Permittees if they perform industrial activities at an air transportation facility as defined in the NPDES Stormwater Multi-Sector General Permit for Industrial Activities. See also https://www.epa.gov/npdes/stormwater-discharges-industrial-activities. A Co-Permittee also includes an entity that performs an activity at Logan that EPA has determined can contribute to a violation of a water quality standard. *See* 40 CFR § 122.26(a)(v). As an example, EPA has determined that any tenant that handles aircraft lavatory waste or any other sanitary waste device not directly piped to a Publicly Owned Treatment Works or associated sanitary waste collection system is required to be a Co-Permittee.

During the drafting of the 2007 Permit, EPA sent an information request letter to 32 potential Co-Permittees under the authority of Section 308(a) of the Clean Water Act (CWA), 33 U.S.C. § 1318(a). The potential Co-Permittees were required to either fill out a Logan Stormwater Co-Permittee Application (SWPCA) if the company performed the industrial activities designated above or certify the company was not performing those activities. Each identified Co-Permittee filled out a SWCPA which included the name and address of the company, and the name, title, phone number and e-mail of the person in charge of environmental compliance for the Co-Permittee. These Co-Permittees identified the industrial activities they performed at their leased property at Logan and all other industrial activities they performed elsewhere on Logan property. Massport, as the owner and operator of the airport facility and the stormwater sewer system, is responsible for the discharges from its stormwater sewer system to waters of the United States.

Tenants change over time at airports and not all airport tenants are required to be Co-Permittees. See Attachment B of the Draft Permit for the current list of tenants which are designated Co-Permittees as of December 29, 2020. These tenants perform industrial activities that have the potential to discharge pollutants to the stormwater sewer system. The Permittee shall maintain all

current SWCPAs that have been completed by its Co-Permittee tenants. When a new Co-Permittee begins to operate at Logan or a Co-Permittee ceases to operate at Logan, Massport shall add or delete such SWCPAs from their list. All new Co-Permittee tenants shall submit a request to Massport for approval of their own Best Management Practices (BMP) Plan for the industrial activities they perform (such as an existing corporate BMP plan) or agree to adopt Massport's SWPPP for discharges from their operational areas.

In the 2007 Permit, the Permittee was required to notify EPA in writing any time there was an addition or deletion of a tenant that performed industrial activities as described above. For the Draft Permit, Massport is required to maintain a current list of Co-Permittee tenants and provide a current list with its annual SWPPP certification that is due by January 31st of each year, as well as upon request by EPA. Upon Massport's first SWPPP submission under the permit term, the Co-permittee list in the most recent SWPPP will be the most current Co-permittee list until it is next updated.

3.2.2 Stormwater Discharges Associated with Industrial Activity

Many activities conducted at Logan may potentially impact stormwater quality. A summary of the current Co-Permittees and the activities they conduct are discussed below. Massport has addressed these activities through BMPs in its SWPPP that are designed to minimize the discharge of pollutants to the stormwater drainage system. A summary of the current industrial activities that occur within the drainage areas of the permitted outfalls is shown in Table 3**.** The following activities are conducted at Logan Airport by Massport and its tenants that have the potential to discharge stormwater associated with industrial activity at one or more outfalls:

Aircraft and Pavement Deicing and Anti-Icing Performed by Massport

Deicing is a generic term used to cover both anti-icing, which is the prevention of snow and ice build-up, and deicing, which is the removal of the snow or ice once it has built up on the ground surfaces or on an aircraft. Two basic types of deicing operations are carried out at Logan: deicing of runways, taxiways, ramp areas, roadways, and public sidewalks and deicing of aircraft. Massport is responsible for deicing operations on runways, taxiways, ramp areas, roadways, and public sidewalks, while aircraft deicing is the responsibility of each individual airline that conducts deicing operations or of those Co-Permittees that airlines contract with to conduct deicing. The ramps, taxiways, and runways are deiced and anti-iced using potassium acetate. Deicing of public roadways is a process whereby a combination of rock salt (sodium chloride) and sand is used for both anti-icing and deicing practices. Salt is prohibited on runways as it is corrosive to aircraft components.

Co-Permittee Deicing Activities

Tenant aircraft deicing operations at Logan primarily utilize propylene glycol, with the exception of one smaller airline which may still use ethylene-glycol based deicers. The deicer is typically applied from tank trucks that have spray nozzles on extendable booms.

Potential pollutants associated with aircraft and pavement deicing and anti-icing include: propylene glycol, ethylene glycol, potassium acetate, as well as other components of deicing compounds, such as corrosion inhibitors.

Deicing and Anti-icing Chemical Storage

Deicing compounds are stored in a variety of locations (indoor and outdoor) in storage containers ranging in size from 55-gallon drums to 100,000-gallon tanks. The glycols are stored in aboveground and underground tanks, and potassium acetate is stored in an aboveground tank. Tanks and drums have the potential to leak and raw materials could be entrained in stormwater flow if exposed to precipitation.

Aircraft Lavatory Service Operations

Aircraft lavatory wastes are removed from aircraft, transferred to a lavatory truck, and disposed of at one of two designated indoor triturators at the airport. A triturator is a type of shredder, with one being located at Terminal B near Gate B5 and operated by ABM Janitorial Services Northeast, while the other is located at Hangar 9 in North Cargo and operated by Swissport. After passing through these triturators, sanitary wastes are discharged to the Boston Water and Sewer Commission (BWSC) sanitary sewer system. Some disinfectant (surfactant) mixing may occur in the triturator area and may be discharged to the sanitary sewer system along with rinse waters produced during the servicing of aircraft lavatory facilities. Particular attention must be given when transferring lavatory wastes from airplanes to lavatory trucks and then from the trucks to the triturator facilities, in order to avoid spilling any waste that can then be introduced into the storm drainage system and discharged through an outfall. Therefore, the SWPPP specifically addresses this potential and requires the Permittee to take measures to prevent any such release of lavatory waste to the storm drain system. Potential pollutants associated with lavatory service operations include bacteria, lavatory chemicals, and solids.

Sewer Maintenance

Sewer maintenance activities at Logan consist of preventative maintenance and corrective maintenance. Preventative maintenance activities include inspections, cleaning, and dye testing of sewer lines. Corrective maintenance includes repairs of deficient sewers and cross connections. All materials removed as part of sewer cleaning or repair are disposed of off-site. Potential pollutants associated with sewer maintenance include: oil and grease, petroleum hydrocarbons, metals, bacteria, and solids. See discussion in Section 5.1.5 below regarding these activities.

Vehicle and Equipment Fueling

Ground vehicle and equipment fueling is conducted at several locations at Logan. The SWPPP contains a requirement for all operators of fueling vehicles to not “top off” when filling, especially in warmer months when thermal expansion of fuel can occur. Potential pollutants from vehicle and equipment fueling are oil and grease and petroleum hydrocarbons.

Fuel and Oil Storage

Massport and its Co-Permittees have various types of storage tanks for heating oil, kerosene, diesel fuel, gasoline and other petroleum products. The centralized fuel farm, located at the northwest corner of the property, borders the Porter and North drainage areas. The facility includes four above-ground storage tanks (ASTs), each of which has a capacity of approximately 1.8 million gallons for the storage of jet fuel. Fuel delivery to the fuel storage facility is both by tanker truck and by pipeline from a remote storage terminal along Chelsea Creek. The ASTs are surrounded by a secondary containment system.

Fueling of vehicles occurs at the fuel loading rack area. Four underground storage tanks (USTs) are located at the fuel loading rack area including two 12,000 gallon gasoline USTs, one 12,000 gallon diesel fuel UST, and one 1,000 gallon UST of diesel fuel used to run an on-site generator.

The fuel storage and fuel distribution systems were constructed by Massport and are leased and operated by BOSFuel, which is a consortium of Logan tenants formed to operate the fuel storage facility and distribution system. BOSFuel has contracted with Swissport Fueling, Inc. (Swissport) to manage daily operations of the fuel storage and distribution facilities. Daily throughput at the facility is approximately 1,200,000 gallons of jet fuel. Potential pollutants from fuel storage include oil and grease and petroleum hydrocarbons.

Aircraft Fueling

Fueling of aircraft at passenger terminals and cargo facilities is accomplished through the use of an underground hydrant fuel distribution system or by tanker trucks, as described above. Fuel from the hydrant is pumped directly into aircraft fuel tanks by hydrant carts, which employ metering and final filtering capacity. Fueling by diesel-powered tanker trucks is conducted at the North Cargo, South Cargo and General Aviation aircraft loading areas. During this type of fueling, trucks load jet fuel at the fuel storage facility or from the centralized fuel farm, travel across the apron, and pump fuel into the aircraft fuel tanks. Potential pollutants from vehicle and equipment fueling are petroleum hydrocarbons.

Hangar Maintenance, Including Aircraft Washing

The hangars at Logan house a range of maintenance and repair services conducted by airlines and FBOs. A variety of hazardous materials are used and stored in these facilities. Activities at the hangars include aircraft, ground vehicle, and equipment maintenance and repair. Wastewater that can be generated from hangar floor cleaning and equipment wash down should be directed to the BWSC sewer system. Automotive and aircraft related maintenance requires the handling and storage of hazardous materials including battery acids, fuel additives, adhesives, and spent absorbent from spill cleanup, in addition to the larger quantities of potential contaminants such as fuels, oils, solvents, and detergents. Aircraft washing is confined to hangars to limit the potential for direct discharge of pollutants to the storm drain system. As part of its SWPPP, Massport requires that all wash waters must be collected and discharged to the sanitary sewer system through a permitted connection. Potential pollutants associated with hangar maintenance activities include oil and grease, petroleum hydrocarbons, and degreasers.

Vehicle and Equipment Maintenance

Automotive repair work often requires the handling and storage of various hazardous materials including paints, degreasers, battery acid, fuel additives, oils and hydraulic fluid. Vehicle and equipment maintenance is conducted indoors or under cover except under emergency circumstances. Potential pollutants associated with vehicle and equipment maintenance activities include oil and grease, petroleum hydrocarbons, and degreasers.

Vehicle and Equipment Washing

Discharges from outdoor washing operations are not authorized by this Permit unless confined to a containment area where wastes are collected and disposed of as sanitary waste. Dry washing techniques are used whenever possible. Potential pollutant sources from equipment and vehicle washing operations include oil and grease, petroleum hydrocarbons and surfactant-containing detergents and degreasers.

Aircraft Maintenance

Potential pollutants associated with aircraft maintenance include oil and grease, petroleum hydrocarbons, degreasers, and other fluids. Aircraft maintenance should be conducted indoors whenever possible because small leaks and spills of materials such as lubricating oils, hydraulic oils, degreasers, and other cleaning products can occur during routine maintenance activities.

Rubber Removal

Repeated aircraft landings result in the build-up of residual rubber on the runway. This build-up can reduce friction levels on the runway, and during a rain event, can cause an aircraft to hydroplane. To remove accumulations of rubber on the runways, rubber removal operations are performed along the runway ends utilizing a specialized vehicle, which dispenses water at high pressure. No chemicals are used for this rubber removal procedure. Potential pollutants associated with rubber removal activities include solids. The Draft Permit's SWPPP requires the Permittee to minimize the discharge of any removed solids from these operations into the drainage system and dispose of all collected rubber materials in accordance with local and/or state ordinances. Wash water is discharged to grassy surfaces away from storm drains.

Cargo Handling

There are approximately thirty cargo handlers in ten different buildings at Logan. Although the main operation of these facilities is cargo transfer, associated activities can include vehicle maintenance, fueling, as well as the handling of potentially hazardous cargo. Leaking fluids from cargo handling equipment also have the potential to enter the storm drain system and end up in Boston Harbor. Potential pollutants associated with cargo handling include: oil and grease, petroleum hydrocarbons, degreasers, and unknown hazardous materials.

Outdoor Handling of Material

Bulk material handling operations occur throughout Logan. Areas where significant materials are handled included hangars, maintenance areas, and the fuel storage facility. Smaller volumes of

materials are handled during deicing operations, lavatory service, and sewer/storm drain maintenance. Materials spilled or leaked during outdoor handling of material have the potential to enter the storm drain system through dry weather flow or can be exposed to precipitation and stormwater runoff during rain events. Potential pollutants from outdoor handling of material include: oil and grease, petroleum hydrocarbons, fire-fighting foam, degreasers, bacteria, sand, glycol, sodium acetate, and potassium acetate.

Outdoor Container Storage

Raw materials, leaking equipment/vehicles, and containers exposed to stormwater at outdoor storage areas can adversely impact stormwater. Massport requires that all containers have secondary containment and be stored under cover when possible. Containers that are 55-gallons or larger are subject to SPCC regulations. Potential pollutants from outdoor container storage include: oil and grease, petroleum hydrocarbons, degreasers, metals, solids, glycol, sodium acetate, and potassium acetate.

Outdoor Vehicle/Equipment Storage

Ground support vehicles and equipment parked outdoors have the potential to leak fluids including diesel fuel, hydraulic oil, transmission fluids, antifreeze, glycol, and lavatory fluids. Leaking fluids from parked vehicles and equipment have the potential to enter the storm drain system through dry weather flow or be exposed to precipitation and stormwater runoff during rain events. Potential pollutants from outdoor vehicle and equipment storage include: oil and grease, petroleum hydrocarbons, metals, bacteria, glycol, sodium acetate, and potassium acetate.

Solid Waste Management

Solid waste storage containers are located throughout the airport and vary in size from small rubbish bins to large trash compactors. Solid waste is transported from the airport by contractors and disposed of off-site. Solid waste storage containers must be covered and inspected regularly for leaks and overfilling. Potential pollutants from solid waste management containers include: oil and grease, petroleum hydrocarbon residues, food waste, and debris.

Pavement Cleaning/Street Sweeping

Outdoor pavement cleaning and sweeping activities are conducted throughout Logan to remove fluids, sand, and debris from paved surfaces and reduce the potential for the pollutants to enter the storm drain system. During pavement cleaning, all stormwater inlets are blocked and wash water is contained, collected and discharged to the sanitary sewer system. Solid waste collected from pavement sweeping is collected in on-site dumpsters for off-site disposal. Potential pollutants from pavement cleaning and sweeping include: residues contaminated with oil and grease, petroleum hydrocarbons, metals, glycol, phosphates, acetates, and solids.

Catch basin/Stormdrain/Stormceptor© Cleaning and Maintenance

Periodic cleaning and maintenance of stormdrains, Stormceptors© and catch basins is performed by Massport. A Stormceptor© is a below-grade cylindrical or rectangular structure that is designed to remove floatables, oil and grease, and solids from stormwater flow. Accumulated

trash and debris in these structures and any standing water is removed using a vacuum truck and disposed of off-site. Potential pollutants associated with the cleaning and maintenance of these structures include: oil and grease, petroleum hydrocarbons, glycols, solids, bacteria, and sediment.

Painting

Painting operations may involve the use of water and oil-based paints. Massport conducts painting of the runways and taxiways using water-based paint. Some tenants conduct pavement painting at their facilities. Potential pollutants associated with painting include: water-based paint, oil-based paint, solvents, thinners, and solids.

Wildlife Management

Massport employs full-time wildlife technicians whose responsibility is to deter airplane strikes primarily from bird flocks. This is accomplished through different strategies, including the use of pyrotechnics in strategically placed locations on the airfield where birds are known to land. This program is implemented daily to ensure bird flocks do not populate the airfield. The Wildlife Management program also has a stormwater pollution prevention benefit as reductions in the bird population on the airfield and at the end of runways should also reduce the potential fecal bacteria contamination of the receiving waters.

Construction

Construction activities occur on a regular basis at Logan and range from small-scale to large-scale construction of buildings, roadways, runways and utilities and may be undertaken by Massport, its tenants, and/or its developers. All construction projects, regardless of area and impact, are required to implement BMPs to minimize and, where possible, eliminate impacts to stormwater quality. The main concern associated with construction is erosion control and the prevention of sediment infiltration into the storm drain system. Other construction-related potential pollutant sources include: oil and grease, petroleum hydrocarbons, solids, and pH excursions from concrete processing.

Other Tenant Activities and Operations

Certain tenants at Logan have not been designated as Co-Permittees because the level of their activity or classification of industrial activity is exempt from permitting by the MSGP. It is incumbent upon Massport to ensure that these tenants manage potential pollutant sources in a manner consistent with the facility SWPPP.

Car Rental Facilities

Car rental facilities at Logan Airport conduct activities that require the use and storage of a variety of hazardous materials. Activities at the car rental facilities may include: motor vehicle maintenance and repair, storage of lubricating, engine and waste oil, storage of batteries, parts cleaning with degreasers, washing, fueling, and pavement deicers. Potential pollutants associated with car rental facilities include: oil and grease, petroleum hydrocarbons, degreasers, surfactants, paints, solids, and deicing agents.

Oil and Hazardous Materials Spills and Releases

Massport requires that all spills or releases of oil and hazardous materials (OHM) must be reported to the Massport Fire Rescue Department (MFRD) immediately. The Permittee employs a Spill Response Notification Flow Chart (SRNFC) which details the protocols for reporting spills. The MFRD is the On-Scene Commander (OSC) and provides emergency containment of releases or spills when necessary until the responsible party completes the cleanup. Small spills by Massport and tenants are typically cleaned-up with absorbent materials, temporarily stored, and disposed of, by licensed contractors. Regardless of the quantity of oil stored or used, all tenants and airport users must have sufficient quantities of containment and clean-up materials on hand at all times including, but not limited to: drain covers, absorbent material and booms, pads, and mats. These materials shall be stored nearby and be fully accessible at all times in fuel handling and vehicle maintenance areas and other locations where hazardous materials are stored, handled or transported. Fueling vehicles are required to carry a spill mat that is large enough to completely cover the storm drain inlet immediately downstream from the fueling area.

When Massachusetts Contingency Plan (MCP) reportable spills occur, notifications are made to the MassDEP. The U.S. Coast Guard and the National Response Center are also notified if the release reaches the storm drainage system. Larger spills are cleaned-up by emergency response clean-up contractors with oversight conducted by the MFRD and Massport's Environmental Management Unit. Massport provides an oversight role and verifies that the proper authorities have been contacted and all appropriate corrective actions have been taken. All reportable spills must be documented to Massport's Environmental Management Unit and a database of all reported spills and releases is maintained by the MFRD.

3.2.3 Description of Outfalls

Outfall 001 - North Outfall

Approximately 165 acres of the northern side of the terminal buildings drain stormwater associated with industrial activity to Winthrop Bay through a 5 by 10 foot box culvert at Outfall 001. Outfall 001 is located on the north side of the Logan property and discharges near tidal flats adjacent to the Orient Heights neighborhood of East Boston. The drainage area includes Terminal E, the apron and taxiway between Terminals D and E, a portion of the outer taxiway, the north taxiway area that includes the American and Delta hangars, and the north cargo building. The main activities that take place in the drainage area include: vehicle and aircraft maintenance, fuel storage and distribution, aircraft fueling and sanitary waste handling at the gates, runway rubber removal, and runway and aircraft deicing.

Stormwater treatment at this outfall structure includes a mechanical bar screen that removes floating debris, after which stormwater travels to the floating skimmer to remove any oil and fuel. The skimmer discharges to a fiberglass coated steel underground packaged pumping station with a macerator (grinder) and two flooded, suction centrifugal pumps with a rated capacity of 210 gpm (per pump). From there, the skimmed water is pumped to a 1,000-gallon sedimentation tank and then flows by gravity to the oil/water separator. A small amount of stormwater is also removed along with the oil and gets recirculated through the treatment system. The majority of stormwater flows beneath the skimmer to the outfall. Sampling for this outfall is conducted about

100 feet upstream of the tidegate, in a sample vault. Oil from the separator is pumped out by Massport for disposal.

Swissport Fueling/BOSFuel, an FBO, operates the centralized fuel farm and fueling operation at Logan, as well as the fuel loading rack for vehicle fueling and the stormwater treatment system. The centralized fuel farm includes four, 43,000-barrel (1.8 million gallon) ASTs. During a storm event, water accumulates within the concrete containment area that surrounds the AST. Accumulated stormwater is discharged to the stormwater treatment system at the fuel farm after it is observed by Swissport to ensure there is no oil sheen present. If an oil sheen is present, any free petroleum product would be collected and transported off site. For the fuel rack loading area, a 12,000-gallon UST stores diesel fuel used by on-site trucks and two 12,000-gallon USTs store gasoline for fueling on-site vehicles.

Fueling of aircraft at passenger terminals and cargo facilities is accomplished through the use of an underground hydrant fuel distribution system or by tanker trucks. The underground hydrant fuel distribution system consists of a main distribution pipeline connected to the centralized fuel farm described above, which distributes fuel to terminal gates via hydrants located in underground vaults at the gates. Fuel from these hydrants is pumped directly into aircraft fuel tanks by hydrant carts, which employ metering and final filtering capability.

On April 26, 2019, Massport submitted supplemental information and a revised Part 2C of its NPDES Application Form on behalf of its tenant and co-Permittee, BOSFuel Corporation, LLC ("BOSFuel"). This submittal notified EPA that BOSFuel had committed to install improved structural controls and treatment processes in the fuel farm area to improve its stormwater collection and management system. Plans for this new treatment system were reviewed and approved by MassDEP, construction was undertaken in 2020, and the treatment system went online in late 2020. A schematic of this upgraded treatment system is shown in Figure 4 and is described below.

The treatment capacity of this new system is greater than the capacity of the system it replaced. However, Massport contends that there are no anti-degradation issues associated with the improved system because neither BOSFuel nor Massport is requesting to treat more stormwater than what EPA anticipated would be collected and treated under the 2007 Permit. For this reason, EPA and MassDEP concur that this change does not trigger an anti-degradation review.

Stormwater that accumulates in the hydrant vaults and pits is pumped out by truck and treated in a grit chamber and oil/water separator (OWS) prior to being stored in the 20,000-gallon set-up tank at the centralized fuel farm. This water is then pumped to a 42 gallon per minute (gpm) treatment system, which is comprised of a bag filter, an Oilsorb® unit and two carbon units in series. Sampling is conducted at the outlet of this treatment system at an internal outfall designated Outfall 01E. Discharges from this system are joined with stormwater that collects within the fuel farm containment area and the loading rack area and is pumped to a 200 gpm stormwater OWS system, which has a capacity of 10,000 gallons. Sampling is conducted at the outlet of this system, designated as Outfall 01D, before being sent to Outfall 001 with other stormwater flows for additional treatment and discharge. See Figure 4 for a schematic of these treatment systems and Figure 5 for the location of internal Outfalls 01D and 01E.

Outfall 002 - West Outfall

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 at Outfall 002. Outfall 002 is along the southwest perimeter of the Logan property. The drainage area includes Terminals A and B, parts of Terminals C and D, the apron and taxiways between Terminals B and C, a portion of the outer taxiway, and cargo areas. The main activities that take place in the drainage area include aircraft fueling, aircraft maintenance at gates, fueling distribution, handling of sanitary wastes from aircraft, runway rubber removal, runway deicing, and aircraft deicing. This outfall structure includes an oil skimmer, grinder pump, sedimentation tanks, and final separator chambers with a waste oil collection area, similar to the treatment train employed at Outfall 001, with the same pumping capacities. Sampling for this outfall is conducted immediately after treatment in a sampling vault about 100 feet upstream of the tidegate at Outfall 002.

Outfall 003 - Porter Street Outfall

Stormwater runoff from about 182 acres on the northwest side of the terminal buildings and a portion of East Boston discharge through Outfall 003 to Boston Inner Harbor, 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, and vehicle access roads. The main activities that occur on airport property in this drainage area include vehicle and aircraft maintenance, generally inside a hangar or an indoor garage with no known discharges to the stormwater sewer system. No washing, fueling, or other maintenance activities occur outside at the automotive rental facilities. Outfall 003 is equipped with absorbent booms to capture floating materials. These booms are inspected on a regular basis and replaced as necessary. Additionally, a combined sewer overflow (CSO) from East Boston discharges through Outfall 003. CSO flows may be comprised of a combination of stormwater, sanitary sewerage, and industrial wastewater, and typically occur during periods of extended or intense precipitation events when the normal drainage system cannot handle the excess flows.

Because off-site discharges occur from Outfall 003, including the East Boston CSO, the 2007 Permit required the Permittee to determine upstream sampling locations which were representative of Massport's contribution to this outfall. Massport determined that there were three subcatchment areas draining to Outfall 003 which were representative. During the permit term, the Permittee analyzed samples from these three locations separately and reported the average of these three values in the DMR. By email of October 29, 2015 from Rosanne Joyce of Massport to George Papadopoulos of EPA, Massport requested to reduce the three (3) sampling locations to two (2) and EPA has agreed with the requested change, which is reflected in the Draft Permit. One of these locations is on the airside of the property, which includes runways, taxiways and service roads, while the other is on the street side. The composite of samples from these two locations is believed to be representative of the Permittee's Outfall 003 discharges.

Outfall 004 - Maverick Street Outfall

Stormwater from approximately 34 acres on the southwest portion of the airport drains into a stormwater drainage system that discharges to Boston Inner Harbor via Outfall 004. Outfall 004 is located at the southwest corner of Logan adjacent to the Jefferies Point neighborhood of East

Boston. The drainage area includes vehicle access roads and automotive rental agencies. The main activities that occur on airport property in this drainage area include light vehicle maintenance and washing, which normally occurs under a canopy or inside a garage. Outfall 004 is equipped with absorbent booms for the capture of floating materials. These booms are inspected on a regular basis and replaced as necessary. Outfall 004 is sampled at the first accessible point where the discharge emerges from the outfall structure. Outfall 004 discharges adjacent to a City of Boston CSO discharge pipe, authorized by another NPDES Permit, #MA0101192.

Outfall 005 - Northwest Outfall

Stormwater from approximately 23 acres located in the northwest corner of Logan drains to Outfall 005 and discharges to Winthrop Bay. About half of the area is undeveloped and consists of a dirt or gravel surface. The other half is occupied by two buildings and their associated parking areas. One building is unoccupied and the other is leased by a food servicing company. A portion of the undeveloped portion of the site has been used in the past to store precast concrete structures for Logan construction projects and also for storage of Massport construction equipment. This outfall drains a relatively small area with very little industrial activity and is sampled at the first accessible point where the discharge emerges from the outfall structure.

Airfield (Perimeter) Outfalls

There are 44 airfield outfalls which mainly ring the perimeter of the runways as shown in Figure 3, listed on Tables 1 and 2, and designated as A1 to A44. These outfalls shall be referred to as "airfield/perimeter stormwater outfalls." These outfalls are designated and numbered in Tables 1 and 2 and their drainage areas are shown in Figure 3. The 2007 Permit required the periodic sampling of seven (7) of these outfalls (designated as a composite Outfall 006) for several parameters. For this Draft Permit, monitoring requirements have been established for three (3) specific airfield outfalls, designated Outfalls 006, 007, and 008, which correspond respectively to Massport outfall numbers A21, A33, and A8.

EPA has determined that Massport conducted adequate monitoring of these airfield outfalls during the current Permit term and that the parameters that were sampled were generally at lower concentrations than those detected at the main outfalls, likely due to the fact that most of these outfalls were a far distance from industrial activity being conducted at the airport. Therefore, EPA proposes reducing the number of airfield outfalls to be sampled in this Draft Permit. The three specific airfield outfalls selected for ongoing monitoring are in close proximity to one or more runways on the site and are believed to best represent discharges of stormwater associated with industrial activity, primarily from deicing activities.

A quantitative description of the discharges in terms of significant effluent parameters based on discharge monitoring reports (DMRs) submitted for all of the outfalls during the time period from April 2015 to December 2020 was reviewed and used in the development of this Draft NPDES Permit. A summary of the DMR data is provided in Attachment A.

3.3 Outfall Nomenclature

A listing of Massport's outfalls is provided on Page 2 of the Draft Permit and reproduced here. Monitoring conditions and outfall designations have been revised from the 2007 Permit as described below. In all cases where an outfall ends with a letter, signifying a specific monitoring location or condition, one "zero" has been removed from the outfall number. For example, whereas Outfalls 001D and 001E were previously designated outfalls from the fuel storage and distribution system, these outfall designations have been changed to 01D and 01E, respectively. When discussing a specific outfall in general in this Fact Sheet, it is still referred to as a three digit outfall, such as 001.

Outfall Number (Massport designation)	Routine Monitoring	Deicing Episode	ASTs, Fuel Loading Rack, and Set-up Tank Areas
Outfall 001 (North Outfall)	**01A**	**01B**	**01D & 01E**
Outfall 002 (West Outfall)	**02A**	**02B**	------
Outfall 003 (Porter Street Outfall)	**03A**	**03B**	------
Outfall 004 (Maverick Street Outfall)	**04A**	------	------
Outfall 005 (Northwest Outfall)	**05A** (Wet Weather)	------	------
Outfall 006 (Perimeter Outfall A21)	**06A** (Wet Weather)	**06B**	------
Outfall 007 (Perimeter Outfall A33)	**07A** (Wet Weather)	**07B**	------
Outfall 008 (Perimeter Outfall A8)	**08A** (Wet Weather)	**08B**	------

Regular/routine sampling: Outfalls 01A through 08A (formerly wet weather sampling)

The 2007 Permit required the Permittee to collect a grab sample during the first 30 minutes of discharge during wet weather, which is defined as a storm event greater than 0.1 inches in magnitude and that occurred at least 72 hours from the previously measured (greater than 0.1 inch rain fall) storm event. However, due to the stormwater collection and treatment system characteristics, and the operational procedures at the facility, monitoring requirements have been revised to provide more representative samples of the discharges occurring at Outfalls 001, 002, and 004.

For example, the Permittee operates Outfall 001 such that stormwater and dry weather and deicing flows (seasonally) are released from the system on the ebbing tide, approximately one to three hours prior to low tide during both dry and wet weather, with higher flow rates and earlier release of these mixed flows occurring during precipitation events. The tide gate at Outfall 001 holds back flows during periods around high tide. The oil/water separator and skimmer at this outfall typically are operated beginning about two (2) hours prior to low tide until about four (4) hours after low tide, as the discharge is occurring. Therefore, sampling during the first ebb/low tide period is not necessarily correlated to an ongoing or recent precipitation event. Untreated stormwater may accumulate in the drainage system vault behind stoplogs prior to reaching the treatment systems at Outfalls 001 and 002 and may include stormwater from multiple rain events. In addition, treated stormwater may be held behind the tide gates for a period of time before being discharged. Thus, the 2007 Permit's definition of "wet weather" may result in sampling that is conducted which is not representative of the discharge associated with the current precipitation event.

Discharges from Outfalls 001, 002 and 004 would typically contain wet and dry weather flows and potentially flow from multiple storm events. Therefore, the Draft Permit requires periodic sampling without a requirement to sample within a given time frame relative to a precipitation event for Outfalls 001, 002, and 004. The requirement to sample stormwater associated with industrial activity shall be required without consideration of when the last measurable precipitation event occurred for Outfalls 001, 002, and 004. With each sampling activity that is conducted, the Permittee is required to report whether there was a storm event of greater than 0.1 inch in magnitude in the prior 72 hours and its approximate size as an attachment to the DMR.

Outfalls 003 (upstream sampling locations), 005, 006 (airfield outfall A21), and newly designated airfield permit Outfalls 007 and 008, typically discharge during wet weather and are not subject to containment or treatment. For these outfalls, the wet weather definition for sampling has been retained, with an outfall designation of "A". The outfall designation "A" has been retained for Outfalls 001, 002, 003, and 004. The outfall designation "C," previously denoting dry weather conditions for Outfalls 001, 002, 003, and 004, has been removed from this Draft Permit.

Deicing Episode sampling: Outfalls 01B, 02B, 03B, 06B, 07B, and 08B

Sampling during deicing activities was required in the 2007 Permit during the deicing season (October through April) and was required to be conducted during periods of wet weather, as previously defined. Figure 6 shows areas of the site where deicing and anti-icing operations occur. Drainage areas for Outfalls 001, 002, and 003 were the ones most associated with the deicing areas at gates and taxiways. In the 2007 Permit, Outfall 006 was designated as a composite of seven (7) perimeter outfalls. The Draft Permit has established deicing episode monitoring for airfield outfalls A21, A33, and A8 (as designated by Massport and as shown on Figure 3) and these have been designated Outfalls 006, 007, and 008, respectively, in the Draft Permit. EPA determined that sampling from three (3) representative airfield outfalls is a sufficient number with which to characterize the pollutant loadings from all of the airfield outfalls. Monitoring of stormwater associated with aircraft and pavement/runway deicing is

required three times during the deicing season, which runs from October through April. See deicing discharge discussion below in Section 6.9.

Dry Weather sampling: Outfalls 01C through 04C (this designation will no longer be used)

These were discharges associated with industrial activity (likely residual stormwater, groundwater, and potentially de-icing during dry weather conditions). Sampling was conducted based on the definition of dry weather conditions in the 2007 Permit, which was defined as samples being taken at least 72 hours after the preceding measurable (greater than 0.1 inch rain fall) storm event. The 72-hour requirement could be waived if the previous storm of greater than 0.1 inches of rainfall did not yield a measurable discharge. As noted earlier, the designation of "A" for outfalls now encompasses discharges from both wet and dry weather, therefore the outfall designation of "C" will no longer be used in this Permit.

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

Outfall 01D is an internal outfall associated with treated stormwater that has collected in the containment area of the centralized fuel farm and treated water that has been collected from the various vaults and hydrant pits, before it is pumped to the oil/water separator associated with Outfall 001 and discharged to Winthrop Bay. Outfall 01E is an internal outfall comprised of discharges from approximately 32 vaults and 320 hydrant pits of the centralized fueling system that distribute fuel to terminal gates for aircraft fueling. The water that collects in these vaults and hydrant pits is pumped out manually and transferred to a "set up tank," which is a 5,000 gallon (UST) in the fuel farm area.

3.4 Discharges not Authorized by This Permit

3.4.1 Fire Training Facility (FTF)

Massport operates a Fire Training Facility (FTF) located on the Governor's Island portion of the site, which is located just north of airfield outfall A38 as shown on Figure 3. Massport conducts fire training for its own fire department and for those of regional airports and municipalities of Massachusetts and other New England states. The facility is composed of a 120-foot diameter burn pit, which has a lined containment system and contains a mock-up aircraft, control building and other support structures. There are no storm drains at the FTF and the training area is bermed to prevent surface water flows into the resource areas.

Water, unburned fuel, and stormwater are discharged from the burn pit via an overflow weir to an oil/water separator. There are anywhere from 35-70 testing sessions conducted per year, with roughly 8,000 to 15,000 gallons of water and 800 gallons of fuel used per test. Treated water from the separator is sent to a series of four, 6,000 gallon flow equalization/surge tanks and is then pH adjusted with caustic soda or chlorine tablets, if necessary. This is followed by filtration and treatment with a granular activated carbon (GAC) unit at an average flow rate of 40 gallons per minute (gpm). Treated water is then sent to an above ground, 21,000 gallon capacity storage tank for later reuse, or discharged. 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. Water that

cannot be reused is eventually discharged to one of the perimeter drain outfalls to Boston Harbor, as authorized by NPDES Permit No. MA0032751 which was last issued on January 27, 2021.

3.4.2 Prohibited Discharges

The following discharges are prohibited from entering the storm drain system. Appropriate control measures, which are outlined in the SWPPP, shall be implemented to prevent these discharges.

- Direct discharge of pollutants (any substance, material, or waste other than uncontaminated stormwater) including but not limited to: oil and grease, vehicle fluids, fuel, waste oil, solvents, degreasing agents, cleaning solutions, battery acid, paint, paint thinners, antifreeze (not including deicing chemicals), pesticides, herbicides, fertilizers, dumpster wastes, sediment, landscape wastes, floatables, sewage, lavatory wastes, potable water chemicals, rubber particles) into the storm drain system;

- Stormwater and non-stormwater discharges that contribute to an exceedance of any applicable water quality standard;

- Discharge of cleaning agents, paints, oil, or other pollutants from equipment, vehicle, or aircraft cleaning and maintenance;

- Discharge of wash water from equipment, vehicle, aircraft, and lavatory waste truck washing;

- Discharge of fuel from aircraft, vehicle, and equipment fueling;

- Discharge of lavatory waste from aircraft lavatory servicing operations;

- Discharge of sewage, sediment, or debris from sewer, catch basin, or storm drain cleaning operations;

- Discharge of water-based or latex paint rinse water from painting activities;

- Discharge from fire-fighting training activities;

- Discharge from cleaning of floor drains, sumps, and oil/water separators that contains sediment, chemical, and any other pollutants;

- Discharges from dewatering, hydrostatic tank testing or pipe pressure testing that contains sediment, chemicals, and any other pollutants;

- Disposal of petroleum wastes such as waste oil in dumpsters; and

- Disposal of any liquid waste from any dumpster.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Massachusetts Surface Water Quality Standards (MASWQS) at 314 CMR 4.06, designate Boston Harbor (Segment MA70-01) and Winthrop Bay (Segment MA70-10), as Class SB waters and Boston Inner Harbor (Segment MA70-02), as a Class SB (CSO) water.

Class SB waters are described in the MASWQS (314 CMR 4.05(4)(b)) and designated as a "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." Waters with a SB (CSO) designation are occasionally subject to short-term impairment of swimming or other recreational uses due to untreated CSO discharges in a typical year [314 CMR 4.06(11)]. A CSO is the discharge from a combined sewer system at a point prior to the POTW. CSOs occur during wet weather when the flow in the combined sewer system exceeds the system's capacity and typically occur during periods of moderate to heavy rain. On February 27, 1998, EPA approved the State's changes to water quality standards, which included an SB (CSO) designation for Boston Inner Harbor.

Sections 305(b) and 303(d) of the CWA require that States complete a water quality inventory and develop a list of impaired waters. Specifically, Section 303(d) of the CWA requires States to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls, and as such, require the development of a Total Maximum Daily Load (TMDL) for each pollutant that is prohibiting a designated use(s) from being attained. In Massachusetts, these two evaluations have been combined into an Integrated List of Waters. The integrated list format provides the status of all assessed waters in a single, multi-part list.

Boston Inner Harbor, Boston Harbor, and Winthrop Bay are listed in the *Massachusetts Year 2016 Integrated List of Waters* ("303(d) List") as a Category 5 "Waters Requiring a TMDL.[7] The cause of impairment listed for each is as follows:

Boston Harbor: fecal coliform, cause unknown (contaminants in fish and/or shellfish), and polychlorinated biphenyls (PCBs) in fish tissue.
Boston Inner Harbor: *Enterococcus*, fecal coliform, dissolved oxygen, cause unknown (contaminants in fish and/or shellfish), and PCBs in fish tissue.
Winthrop Bay: *Enterococcus*, fecal coliform, cause unknown (contaminants in fish and/or shellfish), and PCBs in fish tissue.

[7] *Massachusetts Year 2016 Integrated List of Waters*. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts.
https://www.mass.gov/files/documents/2020/01/07/16ilwplist.pdf

The status of each designated use described in MassDEP's 2014 Integrated List of Waters Map[8] is presented in Table 1.

Table 1: Summary of Designated Uses and Listing Status for Winthrop Bay (MA70-10)

Designated Use	Status	Cause of Impairment	Source(s)
Aquatic Life	Not Assessed		
Aesthetics	Not Assessed		
Primary Contact	Not Supporting	Fecal coliform, Enterococcus	CSOs, discharges from Municipal Separate Storm Sewer Systems (MS4), unspecified urban stormwater, source unknown
Secondary Contact	Fully Supporting		
Fish Consumption	Not Supporting	PCB in fish tissue, other	Wet weather discharges, discharges from biosolids storage, application, or disposal, contaminated sediments, unknown
Shellfish Harvesting	Not Supporting	Fecal coliform	CSOs, discharges from Municipal Separate Storm Sewer Systems (MS4), unspecified urban stormwater, source unknown

Table 2: Summary of Designated Uses and Listing Status for Boston Inner Harbor (MA70-02)

Designated Use	Status	Cause of Impairment	Source(s)
Aquatic Life	Not supporting	Dissolved oxygen	Source unknown
Aesthetics	Not Assessed		
Primary Contact	Not Supporting	Enterococcus	CSOs, discharges from Municipal Separate Storm Sewer Systems (MS4), unspecified urban stormwater, source unknown
Secondary Contact	Not Supporting	Enterococcus	CSOs, discharges from Municipal Separate Storm Sewer Systems (MS4), unspecified urban stormwater, source unknown
Fish Consumption	Not Supporting	PCB in fish tissue, other	Wet weather discharges, discharges from biosolids storage, application, or disposal, contaminated sediments, unknown
Shellfish Harvesting	Not Supporting	Fecal coliform	Source unknown

[8] 2014 Integrated List of Waters Map. MassDEP Online Map Viewer.
http://maps.massgis.state.ma.us/images/dep/omv/il2014viewer.htm

Table 3: Summary of Designated Uses and Listing Status for Boston Harbor (MA70-01)

Designated Use	Status	Cause of Impairment	Source(s)
Aquatic Life	Fully Supporting		
Aesthetics	Not Assessed		
Primary Contact	Fully Supporting		
Secondary Contact	Fully Supporting		
Fish Consumption	Not Supporting	PCB in fish tissue, other	Wet weather discharges, discharges from biosolids storage, application, or disposal, contaminated sediments, upstream source
Shellfish Harvesting	Not Supporting	Fecal coliform	Municipal point source discharges, discharges from Municipal Separate Storm Sewer Systems (MS4)

MassDEP is required under the CWA to develop a TMDL for waterbodies that are identified as impaired. A TMDL is essentially a pollution budget designed to restore the health of a water body. A TMDL first identifies the source(s) of the pollutant from direct and indirect discharges in order to next determine the maximum amount of pollutant (including a margin of safety) that can be discharged to a specific water body while maintaining water quality standards for designated uses. It then outlines a plan to meet the goal.

As noted in Section 2.2.3 above, a final pathogen TMDL has been published by MassDEP and approved by EPA for the entire Boston Harbor Watershed, except the Neponset River sub-basin. The majority of pathogen impairments among the various segments in the watershed is due to discharges from CSOs, municipal point sources, illicit sewer connections, and urban runoff/storm sewers, while for other impaired segments, the potential contamination sources are unknown. Logan continues to be a source of bacteria to the Boston Harbor watershed through several outfalls. This Draft Permit has established effluent limits and SWPPP conditions in order to reduce effluent bacteria levels consistent with this TMDL.

Also, in addition to the impairments for shellfish harvesting in the receiving waters, there are small portions of Boston Inner Harbor and Winthrop Bay that are listed by the Massachusetts Division of Marine Fisheries (MADMF) as conditionally restricted for shellfishing, as shown in Figure 7. This designation is discussed below in Section 5.1.5 as it relates to bacteria monitoring requirements and limits in this Permit.

5.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which is discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

5.1 Effluent Limitations and Monitoring Requirements

The State and Federal regulations and data regarding discharge characteristics were used during the effluent limitation development process. Discharge data are included in **Attachment A.**

5.1.1 Effluent Flow

The flows for major outfalls during the Permit term have been reported by the Permittee based on estimates from a hydraulic flow model, EPA's Stormwater Management Model (SWMM), that was developed pursuant to the 2007 Permit. As part of the Deicer Study, the Permittee updated the model to represent baseflows dynamically based on simulated water table conditions, rather than the original method with monthly constants. The Permittee also confirmed drainage areas and drainage infrastructure and determined that the model continues to remain appropriate to use.

In accordance with Part I.C.1 of the 2007 Permit, Massport developed a sampling program for Outfall 003 which was comprised of samples from three (3) catch basins upstream of the actual outfall that were determined to be representative of stormwater flows from Massport's property within the Outfall 003 drainage area. These sampling points were to be split between the northern and southern portions of the drainage area associated with Outfall 003 and chosen to minimize contributions from the adjacent stormwater system operated by the Boston Water and Sewer Commission (BWSC). During the 2007 Permit term, Massport analyzed samples from each of these three upstream locations separately and reported the results on the DMR as an average. For the WET testing requirement, composite samples comprised of all three (3) locations were used. For the reissued Permit, Massport has proposed using two (2) of these upstream locations, one which is "airside" and the other being "streetside," which it believes is a representative composite of Massport's contribution to Outfall 003. EPA has agreed to allow this sampling change.

The stormwater flows recorded during the Permit term have been highly variable, as estimated by the SWMM model used by Massport. Consistent with the requirements of the 2007 Permit, the Permittee has reported the monthly average flow and daily maximum flow for each outfall. The Draft Permit requires daily flow reporting for each day of the month as an attachment to the DMR for Outfalls 01A through 08A, inclusive.

The Permittee uses the model, along with precipitation data collected at Logan, and records the monthly average flow for each outfall as well as the daily maximum flow, which is the day of the month with the highest modeled flow. In the Draft Permit, the estimation of flow rate will be required for Outfalls 01A through 08A. For Outfalls 01D and 01E, the Permittee is required to report the monthly average and daily maximum flows of treated stormwater, since these flows are metered.

5.1.2 Total Suspended Solids

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Solids can clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended

solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals and polycyclic aromatic hydrocarbons (PAHs), which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension. Therefore, the release of these compounds into the environment can be reduced by regulating the amount of suspended solids discharged.

The 2007 Permit established a maximum daily, technology-based effluent limitation of 100 mg/L for TSS for stormwater discharges in wet weather (outfalls designated as "A") and dry weather (outfalls designated as "C") at Outfalls 001, 001D, 001E, 002, and 004, and a monitoring requirement at Outfalls 003. The 2007 Permit also required TSS monitoring for wet weather discharges from Outfall 005 and the airfield perimeter runways (designated as Outfall 006). The 2007 Permit also required monthly monitoring and reporting of the average monthly TSS concentration for all outfalls.

As described in Section 3.2.3, above, the outfalls at Logan are equipped with various levels of treatment for stormwater. Outfalls 001 (North) and 002 (West) are equipped with pollution control facilities consisting of a bar screen, oil skimmer, grinder pump, sedimentation tank, and oil/water separator (OWS). Internal Outfall 01D is comprised of water from the fuel loading rack area and aboveground storage tanks which has been treated in an oil/water separator. Internal Outfall 01E is comprised of water from the set-up tank storing stormwater from the hydrant vaults and pits of the centralized fueling system that is treated in an OWS, a bag filter, and two carbon units in series before discharging to Internal Outfall 01D (and its OWS) and finally through Outfall 001. See flow diagram in Attachment 4A. Outfalls 003 and 004 are equipped with absorbent booms for the capture of oil and floating materials. In addition, Massport has established best management practices (BMPs), as documented in the Facility's SWPPP which help control the discharge of TSS. For example, Massport routinely monitors and regularly cleans-out catch basins and other structures (e.g., Stormceptors©) that trap or contain sediment to minimize the discharges of solids. In addition, these structures are routinely cleaned and pumped out before they are 40% full of solids and frequent cleaning of floating debris and sediments is conducted to prevent clogging and ensure they are operating effectively.

The average daily maximum TSS concentration and range (i.e., minimum and maximum reported values) for each outfall for the period from April 2015 through December 2020 is presented in Table 4, below. The reported monthly values and summary data is provided in Appendix A.

Table 4. Average and range of reported maximum daily TSS concentrations (in mg/L) for wet and dry weather discharges for listed outfalls between April 2015 and December 2020. Samples below the detection level (5 mg/L) are designated as "ND." Monitoring is required only during dry weather at Outfalls 01D and 01E and only during wet weather at Outfalls 005 and 006.

		Wet Weather		Dry Weather	
Outfall	2007 Limit	Average	Range	Average	Range
001 (North)	100 mg/L	8.9	ND - 150	18.3	ND - 220

001D (Fuel Loading Rack & ASTs)	100 mg/L	---	---	3.0	ND - 43
001E (Set-up Tank)	100 mg/L	---	---	15.2	5.6 - 43
002 (West)	100 mg/L	39.7	5 - 590	13.0	ND - 25
003 (Porter St.)	Report	33.2	ND - 400	45.9	3.2 - 2400
004 (Maverick St.)	100 mg/L	28.7	ND - 260	11.0	ND - 54
005 (Northwest)	Report	35.0	7.6 - 220	---	---
006 (Runway Perimeter)	Report	19.6	ND - 750	---	---

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

TSS concentrations at Outfalls 01D and 01E, which are equipped with oil/water separators and, in the case of 01E, bag filters (prior to upgrade) and carbon filters, did not exceed the technology-based maximum daily limit of 100 mg/L. The Permittee has not reported a discharge from Outfall 01E since August 2016. Monthly performance data from the four primary stormwater outfalls indicate that the TBELs are achievable at the Facility. See Figures 5.1.2(a) and 5.1.2(b), below. TSS concentrations at Outfalls 001 and 002, which are also treated at oil/water separators, are routinely less than the limit of 100 mg/L. TSS concentrations at Outfalls 004 and 005 (Outfall 005 requires wet weather monitoring only) were also consistently within the limit of 100 mg/L. Outfalls 003 is not equipped with an oil/water separator but is controlled with best management practices similar to Outfalls 004 and 005. TSS concentrations at Outfall 003 have exceeded 100 mg/L on multiple occasions in both wet and dry conditions.

Figure 5.1.2(a) TSS Wet Weather Discharges April 2015 – April 2020

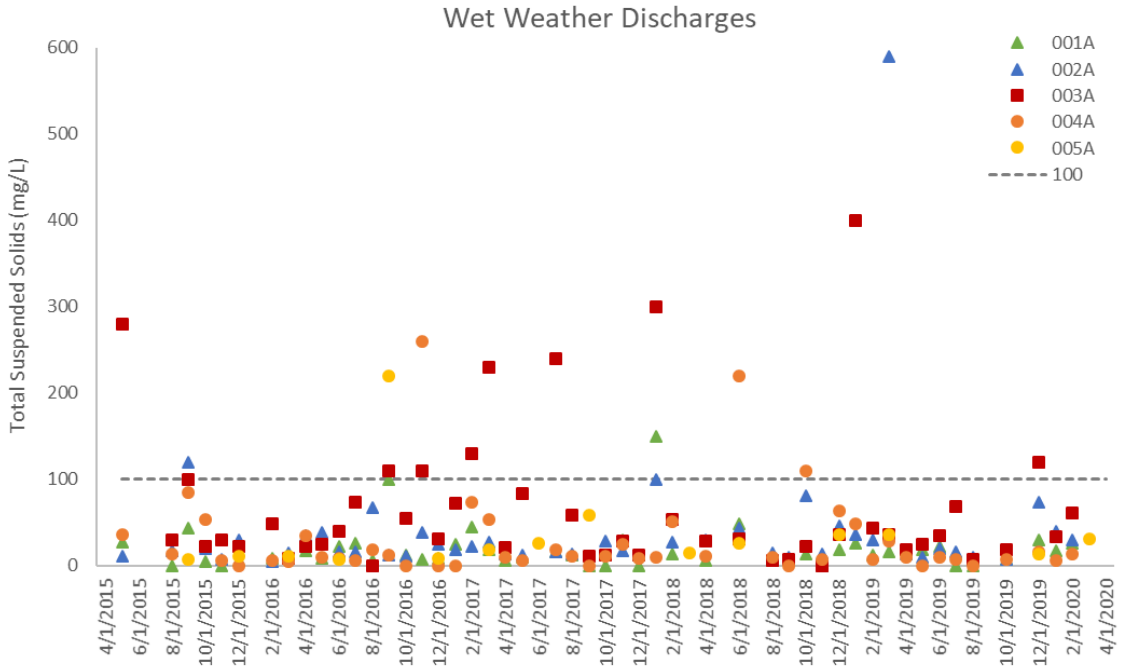
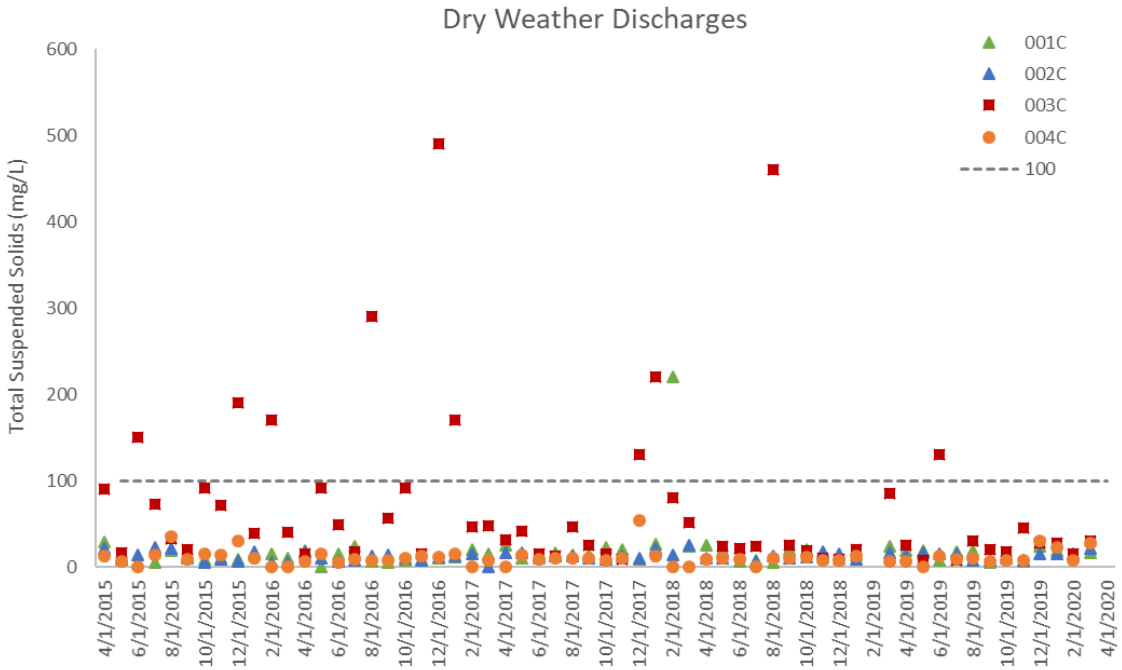


Figure 5.1.2(b) TSS Dry Weather Discharges April 2015 – April 2020*



* The Permittee reported an additional exceedance at 2400 mg/L in April 2018 at Outfall 003C

Technology-based effluent limits for conventional pollutants, including TSS, represent the minimum level of control that must be imposed in accordance with the best conventional pollutant control technology (BCT). Effluent guidelines under Section 304(b) of the CWA have not been promulgated for stormwater discharges from airports. In the absence of national effluent limitations guidelines, EPA establishes technology-based limits for conventional pollutants based on best professional judgement (BPJ) on a case-by-case basis. See CWA Section 402(a)(1)(B).

In establishing these limits, EPA considered TSS limits for stormwater discharges at other facilities that store petroleum products and fuel, including railroad transportation facilities, airports, and oil terminals, as well as national effluent limitations guidelines for other sectors. The maximum daily TSS limit of 100 mg/L is consistent with the level of treatment that can be technologically achieved using an oil/water separator based on best professional judgement (BPJ). In developing effluent limits for the Steam Electric Power Point Source Category promulgated at 40 CFR Part 423, EPA identified TSS as a potential pollutant due to the drainage associated with equipment containing fuel oil and/or the leakage associated with the storage of oil analogous to the storage of jet fuel and other petroleum products at Logan Airport's fuel farm that are associated with Outfalls 01A, 01D, and 01E. [9] *See* 40 CFR § 423.12(b)(3) and (12). For the other outfalls, there are smaller storage tanks for fuel, glycols, and other chemicals throughout the airport.

[9] *See* Development Document for Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category. EPA-440-1-82-029. Washington, DC. (November 1982).

EPA evaluated the factors to be considered when setting permit limits for conventional pollutants based on BPJ for the 2007 Permit. See 40 C.F.R. § 125.3(c)(2) and § 402(a)(1)(B) of the CWA. EPA determined that the permit limits in the 2007 Permit are justified with respect to the cost of attaining reduction in effluent compared to the effluent reduction benefits derived, the cost and level of reduction in pollutants at the Facility based on the cost and level of reduction at a publicly-owned treatment works (POTW), the age of equipment and facilities, the processes employed, the engineering aspects of the control technologies, the process changes, and the non-water quality impacts. This BPJ-based, BCT analysis considered the technologies employed at the Facility, including oil/water separators at Outfalls 01A, 01D, 01E, and 02A and non-numeric, technology-based best management practices (BMPs) throughout the Facility. Performance data from this Facility and other facilities with similar industrial activity (e.g., fuel storage at oil terminals and other airports) support that a maximum daily TSS limit of 100 mg/L can be achieved through the proper operation of a correctly-sized OWS and properly implemented BMPs without additional technology or process changes.

The Permittee has also established BMPs throughout the drainage area for Outfall 003 (Porter Street Outfall). However, both the wet and dry weather stormwater discharges routinely exceed a TSS concentration of 100 mg/L. See Figures 5.1.2(a) and 5.1.2(b), above. The drainage area for Outfall 003 includes, but is not limited to, a jet fuel storage facility, rental car agencies, and the US Airways hangar, which is consistent with the industrial activity and exposures in the drainage areas for other stormwater outfalls that routinely meet a limit of 100 mg/L (e.g., vehicle and aircraft maintenance, fuel storage and handling, and aircraft deicing during winter months). Monitoring at Outfalls 004 and 005 indicates that the Permittee achieves TSS levels below this concentration through the same BMPs (including the use of stormceptors® used to control TSS) that are employed at Outfall 003.

The Porter Street drainage also receives stormwater from East Boston and the stormwater system operated by the Boston Water and Sewer Commission. The Fact Sheet to the 2007 Permit explains that EPA established monitoring-only requirements for Outfall 003 because the existing monitoring locations at the time did not appropriately separate the contribution from Massport from the BWSC and East Boston contributions. The 2007 Permit required the Permittee to establish sampling location(s) that best represent the water quality of stormwater from the Porter Street drainage area at Logan. According to Massport, stormwater samples from Outfall 003 are collected at three specific locations within the Porter Street drainage area representative of Massport's contribution of flow discharging from the outfall and upstream of the BWSC contribution. Under the 2007 Permit, the Permittee established monitoring locations at Outfall 003 representative of the contribution from Massport. The Draft Permit includes a daily maximum, technology-based TSS limit at Outfall 003 consistent with the limitations for the other drainage areas of other outfalls, such as Outfall 004, at which TSS concentrations are routinely less than 100 mg/L.

The Draft Permit maintains or establishes a maximum daily limit of 100 mg/L at Outfalls 01A, 01D, 01E, 02A, 03A, 04A, and 05A. Monitoring is required once per month at Outfalls 01A, 02A, and 03B as well as 01D and 01E. Monitoring is required quarterly at Outfalls 04A and 05A. Quarterly monitoring is warranted for these two outfalls because, in comparison to the other outfalls, the drainage areas are relatively small (less than 40 acres) and industrial activity is

generally light. The TSS limits are achievable based on a case-by-case, BPJ analysis considering the performance of technologies and BMPs at the Facility, TSS limits at other, similar facilities, and effluent limitations guidelines for other industries. The TSS limits for stormwater discharges from these outfalls is also consistent with narrative water quality standards, which require that Class SB waters "be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom." See 314 CMR 4.05(4)(b)(5). For example, EPA established that a TSS concentration of 100 mg/L, which is the median concentration from the National Urban Runoff Program, represents the concentration above which water quality concerns may result. See 60 Fed. Reg. 50825 (Friday, September 29, 1995).

Outfalls 006, 007, and 008

Stormwater discharges to the airfield perimeter outfalls are primarily associated with pavement deicing during winter months, airfield line painting, and runway rubber removal. In particular, rubber removal practices are a potential source of solids in stormwater discharges. The Facility's SWPPP has specific BMPs targeting airport pavement painting and rubber removal operations designed to minimize the discharge of associated solids. The industrial activity associated with the airfield runways and perimeter outfalls is substantially different from the industrial activity associated with the other drainage areas. The BMPs specifically targeting the potential sources of exposures should limit the discharge of TSS at these outfalls. To ensure that the BMPs are properly implemented, the Draft Permit establishes a benchmark concentration of 100 mg/L for the airfield perimeter outfalls, with quarterly sampling. The Permittee must calculate a rolling annual average value based on the last four quarterly samples. This monitoring frequency has been retained at quarterly due to the occasionally high levels of TSS that have been recorded during the monitoring period as noted above. As explained above, EPA recognizes 100 mg/l TSS as a concentration above which water quality concerns may result. The benchmark of 100 mg/L will also ensure that water quality standards are met.

If the rolling average TSS value exceeds 100 mg/l for any of these outfalls, 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 benchmark. If TSS levels remain higher than the benchmark despite action control measures, EPA may modify the permit to impose effluent limitations for TSS for one or more of these outfalls.

5.1.3 pH

The hydrogen-ion (H^-) concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic.[10] Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life.

[10] Summarized from U.S. Environmental Protection Agency, Entry: Causal Analysis/Diagnosis Decision Information System, Volume 2: Sources, Stressors & Responses, pH. Available at http://www.epa.gov/caddis/index.html.

Pursuant to the MASWQS at 314 CMR 4.05(4)(b)3, pH for Class SB waters shall be in the range of 6.5 through 8.5 standard units and not more than 0.2 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class. The pH limit of 6.0 to 8.5 in the 2007 Permit was established for Outfalls 01A, 02A, 03A, and 04A. Monitoring for pH was required for Outfalls 01D, 01E, 05A, and 06A. The 2007 Draft Permit limit of 6.5 S.U. was changed to 6.0 S.U. in the Final Permit after consideration of the dilution and buffering capacity of the receiving water. In its CWA Section 401 certification, MassDEP specified that the pH limit range of 6.0 to 8.5 be required for Outfalls 01A, 02A, 03A, and 04A.

Between the monitoring period of April 2015 to April 2020, wet weather flows through Outfalls 001 through 004 were predominantly within the range of 6.0 – 8.5 S.U., with the exception of seven (7) exceedances for all of the outfalls, with a range of 5.15 to 8.81 S.U. The pH at internal Outfalls 01D and 01E ranged from 5.0 to 9.6; however, it has been demonstrated that the pH at Outfall 01A, where these treated flows ultimately discharge, is consistently within the range of 6.0 to 8.5, with one exception during the monitoring period. There was no monitoring for pH required during dry weather.

For Outfall 05A, the pH ranged from 5.21 to 7.97 S.U. For Outfall 006, which was a composite of various airfield outfalls, the pH ranged from 5.95 to 8.83 S.U. Both of these outfalls were monitored during wet weather and pH was a monitor only requirement.

The pH limited range has been retained at the range of 6.0 to 8.5 S.U. for Outfalls 01A, 02A, 03A, and 04A. This Draft Permit has allowed the lower end of the pH range to be less stringent than the range in the MASWQS which is 6.5-8.5 S.U. In order for consideration to be given to retain this relaxed pH range in the subsequent permit reissuance and as described in Part I.C.5 of the Draft Permit, Massport is required to submit a study within three (3) of the effective date of this permit demonstrating that the pH in the receiving water does not exceed the range of 6.5-8.5. For existing Outfalls 05A and 06A, the pH monitoring requirement has been retained at quarterly. For newly designated airfield Outfalls 07A and 08A, pH monitoring frequency has been established at quarterly.

5.1.4 Oil and Grease

Oil and Grease is not a single chemical constituent, but includes a large range of organic compounds, which can be both petroleum-based (e.g., hydrocarbons) and non-petroleum-based (e.g., vegetable and animal oils and greases, fats, and waxes). These compounds have varying physical, chemical, and toxicological properties. Generally, oils and greases in surface waters either float on the surface, are solubilized or emulsified in the water column, adsorb onto floating or suspended solids and debris, or settle on the bottom or banks. Oil and grease, or certain compounds within an oil and grease mixture, can be lethal to fish, benthic organisms and water-dwelling wildlife.

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

From April 2015 through April 2020, oil and grease levels have consistently been below 15 mg/L. See Appendix A. One wet weather sample above 15 mg/L was reported at Outfall 002, and two wet and two dry weather samples above 15 mg/L were reported at Outfall 003.

The 2007 Permit included a technology-based oil and grease limit of 15 mg/L at Outfalls 001, 02A, and 04A, which was carried forward from the 1978 Permit and based on the level that can be achieved with an oil/water separator (OWS). A limit of 15 mg/L is also the benchmark level from EPA's guidance to, and as a means of establishing a categorization within, the petroleum marketing terminals and oil production-facilities categories.[11] As explained in the discussion of TSS above, the 2007 Permit included a BPJ-based, BCT analysis that considered the technologies employed at the Facility, including oil/water separators at Outfalls 01A, 01D, 01E, and 002 and non-numeric, technology-based best management practices (BMPs) throughout the Facility. Performance data from this Facility and other facilities with similar industrial activity (e.g., fuel storage at oil terminals and other airports) support that a maximum daily oil and grease limit of 15 mg/L can be achieved through the proper operation of a correctly-sized OWS and properly implemented best management practices (BMPs) without additional technology or process changes.

The Draft Permit maintains or establishes a technology-based, maximum daily oil and grease limit of 15 mg/L at Outfalls 01A, 01D, 01E, 02A, 03A, 04A, and 05A. Monitoring is required once per month at Outfalls 01A, 02A, 03A, 01D, and 01E. Monitoring is required quarterly at Outfalls 04A and 05A. Quarterly monitoring is warranted for these two outfalls because, in comparison to the other outfalls, the drainage areas are relatively small (less than 40 acres) and industrial activity is generally light. The oil and grease limits are achievable based on a case-by-case, BPJ basis considering the performance of technologies and BMPs at the Facility, limits at other, similar facilities, and effluent limitations guidelines for other industries. The oil and grease limits for stormwater discharges from these outfalls is also consistent with narrative water quality standards, which require that Class SB waters "shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life." See 314 CMR 4.05(4)(b)(7). An oil and grease concentration of 15 mg/L is also recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish.[12]

Outfalls 06A, 07A, and 08A

As explained in the discussion of TSS above, stormwater discharge to the airfield perimeter outfalls is primarily associated with pavement deicing during winter months, airfield line painting, and runway rubber removal. The industrial activity associated with the airfield runways and perimeter outfalls is substantially different from the industrial activity associated with the other drainage areas. From April 2015 through December 2020, detectable levels of oil and grease were reported in just two samples (September 2016 and June 2019) and both were well

[11] See *Additional Guidance for Petroleum Marketing Terminals and Oil Production Facilities.* N-74-1. Washington, D.C. (July, 1974).
[12] USEPA. 1976. *The Red Book – Quality Criteria for Water.* July 1976.

below 15 mg/L. See Appendix A. The Draft Permit requires quarterly sampling for oil and grease to ensure that BMPs continue to limit the discharge of oil and grease at these outfalls.

5.1.5 Bacteria

The 2007 Permit was issued with bacteria monitoring to characterize the levels of bacteria in the airport's discharges. As part of the SWPPP requirement established for the 2007 Permit, the Permittee was also required to undertake an effort to identify and reduce potential sources of bacteria being discharged from the site. This effort required Massport to develop BMPs for aircraft lavatory service, triturator operation, and sewer maintenance, as well as other measures.

Beginning in 2007, the Permittee initiated a bacteria source tracking program to try to determine the nature and source of the ongoing bacteria discharges at its outfalls. As part of its effort to map and investigate its drainage and sewer system structures during the 2007 Permit term, Massport identified several cross connections, collapsed sewer lines, and clogged pipes which have since been repaired. All of this work has been detailed in annual Progress Reports on the Comprehensive Sewer Investigations (CSI) that the Permittee has submitted documenting its efforts to comply with the SWPPP. This requirement to submit an annual CSI has been maintained in Part I.C.1.g.(5) of the Draft Permit.

In 2007, stormwater and sediment samples were collected from Outfall 001 in order to assess whether human (bacterial) markers, or indicators, were present. Caffeine was present in the Outfall 001 samples, but the overall evidence of human sewage was inconclusive. Concurrent sampling for bacteria was also conducted from a lavatory truck and a sanitary sewer manhole. It was determined that the genetic patterns present in the Outfall 001 samples were not similar enough to those from the lavatory truck or sanitary sewer to conclude that they originated from the same source.

Other sampling in 2007 at Outfall 001 looked at whether some portion of fecal coliform colonies could be characterized as non-fecal in origin. Massport found that the colonies were dominated by *Klebsiella pneumoniae,* a type of coliform that is characterized as non-fecal which can grow under certain conditions in water, food, waste and decaying plant matter and cause false positive counts of fecal contamination. Through additional sampling and speciation of the coliform, the Permittee found a correlation between fecal coliform and *Klebsiella* levels. The Permittee suspects that the plant material in the marshy environment of the area around Outfall 001 may enhance the *Klebsiella* counts at this location allowing their levels to multiply and that elevated levels of this bacteria in the discharge may be due to tidal water seeping behind the leaky tide gate. However, this would not explain the high levels of *Enterococcus* also being discharged at this outfall or the elevated levels of fecal coliform at other outfalls which discharge to deeper waters away from salt marshes.

Another sampling effort was conducted by the Permittee in 2010 to assess samples of stormwater, upstream catch basins, and salt marsh areas in the vicinity of Outfall 001 for the presence of human fecal markers (indicators). This study found no evidence of human sewage at Outfall 001 and evidence of human sewage at the salt marsh and catch basin sampling locations was inconclusive.

The 2007 Permit required monitoring with no limits for fecal coliform and *Enterococcus* for Outfalls 001A through 004A (wet weather) as well as 001C through 004C (dry weather). Monitoring results are displayed in Attachment A.

For the outfalls designated with "A" (stormwater associated with industrial activity during wet weather), fecal coliform and *Enterococcus* values ranged from not detected up to 80,000 colony forming units (cfu) per 100 ml. Typically, the value reported as 80,000 is equivalent to a "too numerous to count" value for bacteria. For the outfalls designated with "C" (stormwater associated with industrial activity during dry weather), fecal coliform and *Enterococcus* values ranged from not detected up to 80,000 cfu per 100 ml. Mean bacteria values for each outfall are summarized in Table 5.

Table 5
Arithmetic mean bacteria values at Outfalls 001 through 004 based on monitoring data from 2015-2020

Outfall	Fecal Coliform (cfu per 100 ml)		Enterococcus (cfu per 100 ml)	
	Wet Weather "A"	Dry Weather "C"	Wet Weather "A"	Dry Weather "C"
001	6520	4640	3890	870
002	6700	9950	3950	3170
003	224	36	837	84
004	6310	2760	2680	378

Since there are ongoing discharges of bacteria at Outfalls 001 through 004, this Draft Permit requires continued bacteria monitoring and sets effluent bacteria limits where warranted. The Draft Permit also requires additional investigative measures associated with the SWPPP to reduce discharges of bacteria and to gain a better understanding of the sources of the high levels of bacteria, which, as discussed above, have been inconclusive to date. As noted earlier in Section 4.1 above, all three receiving waters are currently impaired for fecal coliform and two of the receiving waters are also impaired for *Enterococcus*. MassDEP has an approved TMDL to address pathogens in Boston Harbor. In addition, the tidal flat area to which Outfall 001 discharges as well as other areas of Boston Harbor adjacent to the airport are currently conditionally restricted for shellfishing with depuration (purification), as shown in Figure 7. These shellfish growing areas are designated as GBH5.2, GBH5.3, and GBH5.4.

The MASWQS for Class SB waters have different indicator bacteria for recreational uses and for shellfishing use. *See* 314 CMR 4.05(4)(b)(4). For Class SB waters designated for shellfishing, fecal coliform is the applicable indicator for shellfishing uses. The MASWQS limit fecal coliform to a geometric mean MPN (most probable number) of 88 organisms per 100 ml and not more than 10% of the samples exceeding an MPN of 260 organisms 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 in the most recent revision of the *Guide For The Control of Molluscan Shellfish.* More stringent regulations may apply, *see* 314 CMR 4.06(1)(d)(5).

In the MASWQS, the *Enterococcus* criteria have replaced the former *E. coli* criteria as the preferred indicator for marine recreational uses. At bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010, no single enterococci sample taken during the bathing season shall exceed 104 colonies per 100 ml and the geometric mean of

the five most recent samples taken within the same bathing season shall not exceed 35 enterococci colonies per 100 ml. In non-bathing beach waters and bathing beach waters during the non-bathing season, no single enterococci sample shall exceed 104 colonies per 100 ml and the geometric mean of all of the samples taken during the most recent six months typically based on a minimum of five samples shall not exceed 35 enterococci colonies per 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department. Consistent with Massachusetts Department of Public Health regulations for bathing beaches, the single sample maximum values in the primary contact recreation bacteria criteria in 314 CMR 4.05(4)(b)(4)b also are for use in the context of notification and closure decisions.

The Boston Harbor segment lists five public beaches in the vicinity of airfield outfalls, however there are no major outfalls that discharge to this segment. Winthrop Bay lists four public beaches (Outfall 001), and none are listed for Boston Inner Harbor (BIH) (Outfalls 002, 003, and 004).[13] Therefore, for Outfall 01A (North Outfall), the MASWQS for fecal coliform (shellfishing) and *Enterococcus* (bathing and non-bathing seasons) apply. For Outfalls 002 through 004 which discharge to BIH, the non-bathing beach *Enterococcus* MASQWQS apply. Since there are no conditionally restricted shellfishing areas in the vicinity of the outfalls 002, 003, and 004, there will be no fecal coliform limits established at these outfalls, but monthly monitoring will be maintained due to BIH being impaired for fecal coliform.

Bacteria sampling over the prior permit term clearly illustrates numerous exceedances of the applicable water quality standards. *See* Table 5. MassDEP's Final Boston Harbor Pathogen TMDL was published in October 2018.[14] The TMDL sets wasteload allocations for point source discharges of stormwater equal to the water quality criteria (Boston Harbor TMDL Table 7-1, pp. 78-9). For *Enterococcus* and fecal coliform in SB waters, the MASWQS are:

Fecal Coliform (Shellfishing): A geometric mean of $\leq$ 88 organisms/100mL (geometric mean) and no more than 10% of samples shall exceed 260 organisms/100mL

***Enterococcus* (Primary Contact Recreation)**: A geometric mean of $\leq$ 35 cfu/100mL and no single sample shall exceed 104 cfu/100mL

The Draft Permit has established water quality-based *Enterococcus* limits which are expressed as a monthly average of 35 cfu/100 ml and a daily maximum of 276 cfu/100 ml for Outfalls 01A, 02A, 03A, and 04A. The daily maximum limit represents the 90% confidence level (distribution) of the geometric mean of 104 cfu/100 ml. The MassDEP has determined that the 90% confidence level is appropriate for setting the maximum daily bacteria limit. These bacteria criteria were promulgated by the Commonwealth on December 29, 2006 and the EPA approved these criteria on September 19, 2007. The Draft Permit has established a water quality-based fecal coliform limit expressed as a monthly average of 88 cfu/100 ml and a daily maximum of 260 cfu/100 ml for Outfall 01A because the receiving water (Winthrop Bay) is conditionally approved for shellfishing. These limits are consistent with the wasteload allocation for Class SB (Winthrop Bay) and Class SB/CSO (Boston Inner Harbor) surface water classifications in the Boston

[13] https://www.mass.gov/doc/boston-harbor-2004-2008-water-quality-assessment-report-0/download
[14] Final Pathogen TMDL for the Boston Harbor, Weymouth-Weir, and Mystic Watersheds. https://www.mass.gov/doc/final-pathogen-tmdl-report-for-the-boston-harbor-weymouth-weir-and-mystic-watersheds/download

Harbor Pathogen TMDL. Sampling for *Enterococcus* and fecal coliform shall be conducted monthly and applies year-round for Outfalls 01A through 04A.

In addition to these bacteria limits, the Permittee shall continue to implement its SWPPP and associated BMPs to minimize any potential release of sewage from its lavatory handling and triturator operations. The Permittee shall also continue to investigate the sources of bacteria that are being discharged from Outfalls 001 through 004 and also consider treatment options to meet the new bacteria limits.

5.1.6 Volatile Organic Compounds (VOCs)

Refined petroleum products contain numerous types of hydrocarbons. Individual components partition to environmental media based on physical and chemical properties including solubility and vapor pressure. Rather than establishing effluent limits for every compound found in petroleum products, limits are typically established for the compounds that would be the most difficult to remove from the environment and demonstrate the greatest degree of toxicity. Generally, the higher the solubility of a VOC in water, the more difficult it is to remove. VOCs such as benzene, toluene, ethyl benzene, and the three xylene compounds (i.e., total xylenes), also referred to as BTEX compounds, are found at relatively high concentrations in petroleum products, including jet fuel.

Benzene was used as the indicator parameter in the 2007 Permit, whose presence indicates that other hydrocarbons from petroleum products are likely present. Benzene is also listed as a carcinogen in EPA's drinking water standards. The 2007 Permit established monitoring requirements for benzene for all of the outfalls given the presence of gasoline, diesel fuel, and aviation fuel at the site. This monitoring was intended to ensure that stormwater discharges from the airport do not contain detectable components of gasoline, diesel fuel, or aviation fuel.

Benzene was detected on a regular basis at internal outfalls 01D and 01E with average values of 0.50 and 9.2 µg/l, respectively, with a high reading of 25 µg/l. For all other outfalls, benzene was detected a few times over the period of 2015 through 2020, with 4.7 µg/l being the highest reading.

The TBEL for benzene of 5.0 µg/L has been established in EPA Region 1's Remediation General Permit (RGP), which is required for the discharges from sites which provide treatment of gasoline and other petroleum product contamination. This TBEL is appropriate for discharges from Logan due to the presence of petroleum hydrocarbons and the treatment technology used.

In consideration of water quality based-limits for benzene, the most recently published (November 2002) EPA recommended water quality criteria value for human health for benzene are 2.2 µg/L (consumption of water + organisms) and 51 µg/L (consumption of organism only). Thus, in certain low flow or zero dilution receiving waters where the effluent constitutes the majority of flow, an effluent limitation of 5.0 µg/L could exceed the human health-based water quality standard for consumption of water and organisms. However, the human health criteria values are based on a "lifetime" exposure scenario or continuous consumption of certain amounts of water at the concentration levels of concern and the receiving water is not a drinking water source. Therefore, the TBEL of 5.0 µg/l is appropriate to consider for this Draft Permit

since it is analogous to the limit used in the RGP and it is the more stringent of the two criteria that apply.

For the vast majority of monitoring at Outfalls 001, 002, 003, and 004, benzene was not detected, or detected between 2 and 4.7 µg/l, representing less than 10 samples. Therefore, benzene monitoring at Outfalls 002, 003, and 004 is being eliminated as there is no reasonable potential to exceed the 5 µg/l level, even without consideration of dilution available at these outfalls. In addition, the water quality-based oil and grease limit at these outfalls is an appropriate indicator of the presence of petroleum hydrocarbons and will demonstrate whether the pollution control equipment and BMPs are effectively treating any oil and grease that is present.

Since benzene is often present at the internal outfalls associated with the fuel farm (01D and 01E), monthly benzene monitoring will continue to be required to ensure that the treatment systems are working properly and limiting the breakthrough of benzene. In addition, the monthly benzene monitoring requirement at Outfall 001 is being maintained, as this is where all the treated fuel farm stormwater is sent for additional treatment and eventual discharge.

5.1.7 Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs are a group of organic compounds that form through the incomplete combustion of hydrocarbons and are present in petroleum derivatives and residuals. Discharge of these products can introduce PAHs into surface water where they may volatilize, oxidize, biodegrade, bind to suspended particles or sediments, or accumulate in aquatic organisms. In soils, PAHs may also undergo degradation or transport via groundwater. In estuarine environments, volatilization and adsorption to suspended sediments with subsequent deposition are the primary removal processes for medium and high molecular weight PAHs. Several PAHs are well known animal carcinogens, while others can enhance the response of the carcinogenic PAHs.

There are 16 PAH isomers, or compounds, identified as priority pollutants in the CWA (see Appendix A to 40 C.F.R. Part 423). Group I PAHs are comprised of seven known animal carcinogens: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Group I PAHs are primarily products of incomplete combustion of fossil fuels and, with the exception of chrysene, are not produced commercially for use. Group II PAHs are comprised of nine priority pollutant PAHs which are not considered carcinogens, but which can enhance or inhibit the response of the carcinogenic PAHs. These are acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene. The Group II compounds are more common and are significant components of fuels and coal tar products, as well as being used in manufacturing other products.

The 2007 Permit required quarterly monitoring for the Group I PAHs, as well as for naphthalene, which served as an indicator parameter for the Group II PAHs, for Outfalls 01A, 02A, 03A, and 04A. See Attachment A for PAH monitoring results. For the period of 2015 through 2020, most of the samples were non-detect for PAH isomers, with the exception of five (5) isomers detected for Outfall 02A, fourteen (14) detected for Outfall 03A.

EPA reviewed all appropriate water quality criteria, including the most recent National Recommended Water Quality Criteria for PAHs. Group I PAHs, particularly benzo(a)pyrene, have been used extensively as model carcinogens and as a positive control in a variety of risk assessment tests. Among Group II PAHs, naphthalene poses a high calculable risk relative to other Group II PAHs. For the Group I PAHs, the human health criteria range from 0.00012 to 0.12 µg/L for protection from the consumption of water and organisms and range from 0.00013 to 0.13 µg/L for protection from the consumption of organisms only for each individual compound. Neither the human health nor the water quality criteria have been adopted into the Massachusetts water quality standards. Regarding aquatic life and human health effects of Group II PAHs, while water quality criteria vary considerably based on the current scientific information, the target levels are typically orders of magnitude higher than the Group I PAHs. For the Group II indicator naphthalene, EPA has not published a Maximum Contaminant Level (MCL) for it in drinking water. However, EPA's recommended level for a lifetime exposure to naphthalene via drinking water is 100 µg/L.[15]

In determining the reasonable potential for concentrations of PAHs in the effluent to cause or contribute to an excursion above WQC, EPA often uses projected concentrations based on available effluent data in a steady state mixing equation. However, the 95$_{th}$ and 99$_{th}$ percentile projected effluent concentrations could not be determined given the insufficiency of the effluent data for the previous five years. There were many non-detect levels and the level of detection used for the analysis of PAHs varied considerably and was at times much higher than what is required in current NPDES permits.

Where effluent data contains a high proportion of non-detect values, current scientific literature and technical guidance[16] does not recommend statistical analysis as the uncertainty in the effluent variability and the degree of bias reduces the confidence in calculated upper concentration limits. In the absence of effluent data, EPA's *Technical Support Document for Water Quality Based Toxics Control* (TSD)[17] provides methodology for determining whether a pollutant has reasonable potential to cause or contribute to an excursion above water quality criteria using a variety of factors and information in accordance with 40 C.F.R. §122.44(d)(1)(ii). This may include dilution, the type of industry, existing data on toxic pollutants, history of compliance problems and toxic impact, and/or type of receiving water and designated use (see TSD at 50-51).

Where monitoring requirements have been established in NPDES permits but the ability to determine whether there is a reasonable potential for water quality standard violations is challenging because the applicable WQBELs are lower than the analytical capability of currently approved analytical methods, EPA's Federal Advisory Committee on Detection and Quantitation

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[15] *EPA's 2012 Edition of the Drinking Water Standards and Health Advisories. EPA 822-S-12-001, April, 2012.*

[16] See *ProUCL Version 5.1 Technical Guide*, USEPA Office of Research and Development available at https://www.epa.gov/sites/production/files/2016-05/documents/proucl_5.1_tech-guide.pdf.

[17] See EPA's *Technical Support Document for Water Quality-based Toxics Control:* EPA/505/2-90-001, 1991.

report[18] recommends that permits set compliance limits at the lowest concentration possible using approved analytical methods, require the detection limit (DL) be at or below the minimum level (ML) of detection, and specify reporting requirements for results below the ML, or between the DL and the ML (i.e., "estimated value"). The ML is not the minimum level of detection, but rather the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for an analyte, representative of the lowest concentration at which an analyte can be measured with a known level of confidence. This approach is also consistent with EPA's Technical Support Document (TSD), page 111, which recommends, "the compliance level shall be defined in the permit as the minimum level (ML)."

There are still various hydrocarbons (fuels) used and burned on the site and there are occasional detected levels of individual PAHs which indicates levels above the applicable human health WQC. However, none of the receiving waters are impaired for petroleum compounds and the majority of sampling for PAHs has resulted in non-detect results, although at higher levels of detection than required in this Draft Permit. The majority of sampling conducted resulting in non-detects for PAHs for the 2007 Permit was reported as less than 5 to 10 µg/l. In this Draft Permit, the Permittee is required to use sufficiently sensitive test methods (SSTMs) to achieve lower MLs.

Therefore, the quarterly monitoring requirement for these PAHs will be maintained for Outfalls 01A through 04A in order to determine whether the discharge of PAHs represents a reasonable potential to violate WQS. The Draft Permit requires that the quantitative methodology used for PAH analysis must achieve the ML of ≤0.1 µg/L for each Group I PAH compound and ≤5 µg/L for naphthalene, the Group II PAH compound. These MLs are consistent with those found in Appendix VI of EPA's Remediation General Permit, found at https://www.epa.gov/npdes-permits/remediation-general-permit-rgp-massachusetts-new-hampshire, as well as other NPDES permits in the region, such as those for oil terminal facilities along Chelsea River in Massachusetts. The Permittee may use any approved analytical method in 40 CFR Part 136 for which the DL is at or below these MLs.

5.1.8 Surfactants

The 2007 Permit established monthly monitoring requirements for surfactants for Outfalls 001 through 004 for wet and dry weather. Surfactants are an indicator of common cleaning compounds, which are believed to be used at different locations at the airport, and which may also be found in deicing compound formulations. The discharge of surfactants in stormwater could potentially impair the operation of the OWSs by not allowing oils to properly separate into a lighter oil phase. This could cause elevated levels of O&G at these outfalls and cause potential exceedances of the 15 mg/l limits for O&G. During the permit term, surfactants were typically detected for the majority of sampling events, but mostly at very low concentrations (below 1.0 mg/l).

[18] *Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs*. EPA Office of Science and Technology Final Report: December 2007, 176 p.

Since the levels of surfactants are consistently low, the monitoring requirement for this parameter has been reduced to once per year for Outfalls 01A and 02A, which employ OWSs, to ensure that levels remain low. The monitoring requirement has been eliminated from Outfalls 03A and 04A, which do not employ OWSs.

5.1.9 Deicing Discharges

Section 3.2.2 above discusses the deicing compounds that Massport and its Co-Permittee tenants apply. As noted there, deicing includes anti-icing, which is the prevention of snow and ice build-up, and deicing, which is the removal of the snow or ice once it has built up on the ground surfaces or on an aircraft. The airlines and certain tenants are responsible for deicing aircraft and Massport is responsible for deicing ramps, runways, taxiways, and sidewalks.

The 2007 Permit required monitoring deicing discharges from the major outfalls where deicing activities occur (Outfalls 001, 002, and 003) twice per year during the deicing season, from October to April. Sampling was also required during deicing episodes for seven (7) airfield outfalls, with this composite of outfalls being referred to as Outfall 006. The analytical results are shown in Attachment B. In general, glycol levels were detected over a wide range, with much higher levels at Outfalls 001 and 002, as compared to Outfalls 003 and 006, which reflects the proportionately higher levels of deicing that occurs in the drainage areas discharging to Outfalls 001 and 002. As expected, higher glycol levels typically corresponded to higher BOD and COD levels, as glycols exhibit high levels of oxygen demand. Glycols do not have numeric water quality criteria, but they are oxygen demanding substances that may impact dissolved oxygen concentrations in the receiving water.

Since low DO levels may negatively impact aquatic life and have the potential to violate MASWQS, the effluent BOD, COD, and DO levels were reviewed to evaluate potential impacts. The effluent levels of ammonia and other constituents expected to be present in discharges from deicing compounds were also considered.

5.1.9.1 Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD)

As discussed above, glycols are oxygen demanding substances. The parameters BOD and COD are an indicator of oxygen demand and high concentrations may result in depressed DO levels.

The BOD and COD levels at Outfalls 001 and 002 averaged between 5,860 and 16,400 mg/l with maximum levels being in the 14,000 to 28,000 mg/l range. Based on the monitoring results between April 2015 and December 2020, the high levels of effluent BOD and COD, would indicate that at least short-term dissolved oxygen depression is occurring in the vicinity of the outfalls. However, since there is limited effluent and instream DO data available, it is not known whether, for how long, and to what extent DO levels were below the minimum level of 5.0 mg/l required by MA WQS. As discussed in Section 6.9.2 below, the Draft Permit requires DO monitoring to determine whether high BOD and COD levels are resulting in DO levels below the minimum level of 5.0 mg/l.

The Permittee's Deicing Management Feasibility Study (May 2017) identified deicer management alternatives for reducing deicer discharges at the airport and has evaluated

reduction, collection, diversion, storage, and treatment and disposal of these fluids. One of the Co-Permittee tenants, American Airlines, currently discharges a portion of its deicing fluids during dry weather to the sewer through a separate permit with the MWRA. This may be an option for other airlines.

EPA's MSGP has established benchmark concentrations of 30 mg/l for BOD and 120 mg/l for COD for airport deicing discharges. The MSGP requires benchmark monitoring to determine the overall effectiveness of facility control measures and to assist facilities in determining whether corrective actions or enhanced BMPs may be necessary to reduce effluent levels of these parameters. The MSGP does not consider benchmark concentrations to be effluent limitations. However, if corrective action is required because of a benchmark exceedance, failure to conduct required corrective action is a Permit violation.

Since the deicing parameters have been consistently detected at varying levels at the airfield outfalls, this Draft Permit has established sampling requirements for three (3) specific airfield outfalls. These are Outfall 006 (airfield outfall A21), newly designated Outfall 007 (airfield outfall A33), and newly designated Outfall 008 (airfield outfall A8). These areas were selected to represent three (3) different areas of the airport, which are near intersections of major runways. Seven airfield outfalls have been sampled during the permit term and have been found to contain deicing compounds and usually low to moderate levels of oxygen demand as signified by BOD and COD levels. These results are shown in Attachment D.

In the Draft Permit, the sampling for discharges associated with deicing compounds has been revised. For Outfalls 01B and 02B, which are believed to receive the majority of deicing discharges, sampling will be required once per month during the core deicing months of October to April for propylene glycol, BOD, COD, as well as for DO. Monitoring for tolyltriazoles, nonylphenol, and Total Ammonia Nitrogen (TAN) will be required three times during the deicing season. For the other outfalls to be monitored for deicing discharges, Outfalls 03B, 06B, 07B, and 08B, the same parameters will be required to be monitored, but at the frequency of three times during the deicing season.

Anti-icing and deicing compounds used by the airlines at Logan are all propylene-glycol based, with the exception of one ethylene-based deicer which is used by a small commuter airline, Cape Air. Since the latest monitoring data shows that ethylene glycol is typically not detected or detected at very low levels during deicing episode sampling and only one small operator uses an ethylene-based product, monitoring for ethylene glycol has been eliminated from the Draft Permit.

5.1.9.2 Dissolved Oxygen (DO)

Pursuant to the MASWQS at 314 CMR 4.05(4)(b)(1), the DO shall not be less than 5.0 mg/l for Class SB waters. Seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. Where natural background conditions are lower, DO shall not be less than natural background. Among the three receiving waters, only the Fort Point Channel portion of Boston Inner Harbor is impaired for DO. The 2007 permit did not require monitoring for DO. In addition, past data submittals by the Permittee, including data for information request letters, provided limited data for effluent DO.

Deicing and anti-icing compounds (glycols) are biodegradable and exhibit relatively high oxygen demand, which may be measured as BOD and COD, and which could result in depressed DO levels in receiving waters. The Permittee conducted a Water Quality Impacts (WQI) study as required by the 2007 Permit[19]. The Permittee concluded that the discharge of stormwater containing deicing chemicals did not negatively impact receiving water DO concentrations. Massport based this conclusion on modeling of deicing discharges as well as a review of water column data in Boston Harbor at various stations as reported in *Boston Harbor 2004-2008 Water Quality Assessment Report*, August 2010 (MassDEP).

MWRA has conducted water quality monitoring in Winthrop Bay at one station in the channel between Snake Island and Logan. Sampling depths at this site ranged from approximately 4.2 to 8.7 meters between 2002 and 2008 and DO concentrations ranged between 5.95 and 14.65 mg/L (370 samples including both surface and bottom measurements). The MWRA also conducted water quality monitoring for DO at five stations in Boston Harbor, with sampling depths ranging from 2.0 meters (off Moon Island Outfall, Quincy) to 16.2 meters (north of Long Island Head). DO concentrations ranged between 4.97 and 14.69 mg/L (n= 1,301 samples). However, none of these samples are believed to have been collected during the deicing season.

In any case, these stations are a far distance from and likely beyond the influence of the deicing discharges. Therefore, even sampling conducted during the deicing season would not reflect the full extent of the oxygen-demand on the receiving waters. In response to EPA's 308 letter of December 16, 2014, Massport cited difficulty obtaining samples for DO due to weather conditions (excessive amounts of snow in a short period of time) and the inability to set up sampling stations that could transmit DO data by telemetry, due to concerns with those transmissions affecting communications on the airport. From the WET testing conducted in 2008 and 2009, DO levels ranged from 4.1 – 7.9 mg/l from the outfalls sampled.

Dissolved oxygen receiving water impacts were assessed in Massport's WQI report through application of the Environmental Fluid Dynamics Code (EFDC) model, version 1.01, at Outfall 002. EFDC is a 3-D, finite element model which can account for tidal action, discharge flow rates. For Outfalls 001 and A21, modeling efforts were undertaken with the RMA2 model, which is a 1D/2D, finite element model and a module of the U.S. Army Corps of Engineers Surface Water Modeling System. This model is a depth-averaged model and is not capable of directly modeling depth stratification in the ambient environment.

Mass loading of oxygen demanding substances (i.e., COD and ammonia) were based on observed values collected during the periods of interest (see Table 6).

[19] Water Quality Impacts of Deicing at Boston Logan International Airport, Massport, September 30, 2009

Table 6 - Periods Simulated in Dilution Modeling			
Event	**Outfall 001 (North)**	**Outfall 006 (A21)**	**Outfall 002 (West)**
19 – 21 December 2008			X
10 – 13 January 2009	X	X	X
28 – 30 January 2009	X	X	X
1 – 3 March 2009	X	X	

Field measurements of DO were deemed unreliable and an assumed value of 4.0 mg/L was used in the modeling. Background parameter values were based on data collected at Station 130 in Winthrop Bay (part of MWRA's monitoring program). Ambient BOD (1.0 mg/L) was selected based on consultation with MWRA staff. Given the modeling approach and inputs utilized in modeling DO impacts, EPA believes the results reported in the WQI report at Outfall 001 and 006 (A21) (*i.e.*, ambient concentrations ranging from 7.5 mg/L to 8.5 mg/L) to be appropriate for purposes of estimating DO impacts during the discharge events at this time, although it would have been preferable to have actual DO data for the model. As noted earlier, the DO levels cited by the Permittee were a significant distance from the actual permitted outfalls and the Permittee's measured DO levels in the vicinity of the discharges were inadequate.

The Draft Permit has established DO monitoring for all of the outfalls that receive deicing discharges. These are Outfalls 01B, 02B, 03B, 06B, 07B, and 08B. This monitoring is intended to indicate whether the glycols being discharged during deicing events depress DO levels down to the minimum standard of 5.0 mg/l or below and to establish a background concentration for DO with which to potentially model degradation effects instream. As shown in Attachment A, there are often moderate to high levels of BOD and COD at Outfalls 001 and 002, which receive the majority of runoff containing deicing fluids. Therefore, the worst-case conditions resulting in the lowest effluent DO levels are expected to occur during and shortly after deicing episodes.

Based on the limited data available and the modeling that used assumed values for DO, EPA cannot conclude that there is a reasonable potential for the discharges to cause or contribute to an excursion below the 5.0 mg/L state water quality standard for DO. However, the DO monitoring during the next permit term will better allow EPA to determine whether there is RP for the discharges to result in excursions below the DO standard.

5.1.9.3 Ammonia

Urea has been historically used at airports for runway deicing, which biodegrades to ammonia. During the Permit term, ammonia levels (expressed as ammonia nitrogen) were variable, as shown in Attachment A. For the 4 outfalls which required sampling in the 2007 Permit (001, 002, 003, and 006) for ammonia during deicing episodes, the average ammonia levels have ranged from 0.629 to 1.21 mg/l with the maximum concentrations of 0.87, 0.921, 1.81, and 1.26, respectively, for the four outfalls. These are lower levels than what had been detected prior to 2013, when Massport was using urea as a runway deicer.

Stormwater discharges from the Facility are intermittent. Therefore, EPA has assessed the potential for discharges of stormwater from the Facility to exceed the acute criterion for ammonia. According to the 1989 *Ambient Aquatic Life Water Quality Criteria for Ammonia (Saltwater*[20]*),* assuming a receiving water temperature is 20°C (typical summer temperature), a receiving water pH of 8.5 SU, and a receiving water salinity of 30 ppt, the recommended warm-water acute criterion value is 2.45 mg/L. When the cold-water temperature is 5°C under the same conditions of pH and salinity, the recommended cold-water acute criterion value is 7.1 mg/L. As noted for the review of ammonia effluent data above, all results were below the warm water acute criterion of 2.45 mg/l. Therefore, EPA has determined that there is no reasonable potential to violate the ammonia WQS.

Although the permittee has discontinued the use of urea, there are still detectable levels of ammonia. As mentioned above in Section 5.2, the ELGs for airports prohibit the use of urea for runway deicing, or otherwise establish a limit for ammonia of 14.7 mg/l for every outfall that receives deicing discharges. 40 CFR § 449.10(a). Since Massport has discontinued the use of urea for deicing, it is in compliance with the ELG requirement. Massport must certify annually that it and its Co-Permittees do not use any deicing or anti-icing compounds that contain urea. The use of pavement or runway deicing compounds that contain urea are prohibited in the Permit. If the Permittee determines that the use of urea is required based on safety considerations or regulatory requirement (FAA), the Permittee shall notify the EPA and this permit will be modified to establish a total ammonia nitrogen effluent limit of 14.7 mg/l for those outfalls that receive discharges of deicing activities, consistent with the effluent limitation guidelines at 40 C.F.R. §449.

EPA had determined that the ammonia nitrogen monitoring requirement should be established during normal operations and not specifically during deicing, for which it has been determined that WQS for ammonia did not represent a reasonable potential to violate WQS. Therefore, EPA has established quarterly ammonia monitoring during normal operations for Outfalls 01A through 04A in order to assess whether there is a RP to violate WQS for ammonia during operations associated with all industrial activities.

5.1.9.4 Tolyltriazole and Nonylphenol

Although deicing compounds are predominantly comprised of ethylene glycol and propylene glycol, they often also contain other ingredients, which are often proprietary, and which provide for certain characteristics such as the inhibition of corrosion on aircraft. In order to assess whether any such constituents, some of which have toxicity potential, are present in the discharges from the airport, the 2007 Permit established monitoring for tolyltriazoles and nonylphenol, which are two common classes of glycol additives. Although these additives exhibit toxicity to aquatic life, their exact combination in the discharge is variable, as formulations of glycols change, and additives are not always disclosed. However, this Draft Permit has included more frequent WET testing as described below, some of which will be required during deicing episodes, which will serve to gauge the potential toxicity of flows that contain a combination of glycol additives. Although individually, these additives may not

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20 http://water.epa.gov/scitech/swguidance/standards/upload/2001_10_12_criteria_ambientwqc_ammoniasalt1989.pdf

produce a toxic effect at the levels discharged, WET testing could indicate synergistic effects from the combination of pollutants that are discharged.

Tolyltriazoles are a class of compounds used as additives in glycol formulations which serve as corrosion inhibitors and flame retardants. These compounds are intended to prevent aircraft components that have been covered by deicing fluids from corroding and to reduce the flammability hazard created when fluids are applied to metal aircraft surfaces that can carry an electronic charge. Corrosion inhibitors may comprise as much as 0.5% by volume of deicing fluids. Tolyltriazole (TT) aquatic toxicity data indicate that it is significantly more toxic than glycols.

Monitoring for these 2 parameters is required for Outfalls 01B, 02B, 03B, 06B, 07B, and 08B during deicing events. For the period of 2015 through 2020, the TT values have ranged from 0.057 to 129.6 µg/l. Since this data was limited, we also looked back to the period of 2009 through 2014, as shown in Attachment B. During this period**,** TT concentrations at Outfalls 001, 002, 003, and 006 averaged between 22 and 397 µg/l with maximum concentrations of 1,388 and 1,183 µg/l. At the airfield outfall 006 sampling shown in Attachment B, the average of the combination of outfalls sampled on the same day averaged between 6.15 and 88.2 µg/l, with maximum values of 195 and 203 µg/l. For its tolyltriazole results, the Permittee reported the sum of 4-Methyl-1-H-benzotriazole and 5-Methyl-1-H-benzotriazole, which are believed to be the predominant isomers of the tolyltriazole compounds that are present in discharges from the airport.

To date, there have been no WQC established for tolyltriazole or any of its isomers. Given documented instances of acute toxicity due to discharges of TTs (Cencilla, et al., 1998), Massport proposed a translation of this standard in the form of a numeric benchmark for TT equal to 0.47 mg/L in its 2009 WQI report. This benchmark was based on the *C. dubia* No Observed Adverse Effect Concentration (NOAEC) developed by Pillard, et al. (2001) of 47 mg/L for acute exposure. The target was developed by applying a safety factor of 100. EPA believes that this acute target of 0.47 mg/L is a conservative and appropriate translation of the narrative standard prohibiting toxics being present in toxic amounts. A recent review by Alotaibi, et al. (2015) summarizes the existing fate, transport, and measured toxicity of TT. Of the studies reviewed, all whole effluent toxicity tests were limited to freshwater species. Results from the reviewed studies showed observed toxicity for TT at concentrations as low as 30.7 mg/L (*D. magna*, EC_{10}), and 3.2 mg/L (*D. galatea*, EC_{10}). Given the lack of data for saltwater species, and the limited number of freshwater, multicellular species evaluated, EPA believes the 0.47 mg/L target to be reasonable and conservative.

Nonylphenol (NP) is formed as a degradation product of nonylphenol ethoxylate, which is often used as an additive to glycol formulations to reduce surface tension. This additive may be referred to as a nonionic surfactant. On February 16, 2005, EPA issued the Final Aquatic Life Ambient Water Quality Criteria for Nonylphenol. The document states, “[i]n a study of airport runoff, nonylphenol was measured at 0.98 and 7.76 µg/l in the runoff as a result of aircraft deicer and antiicer fluid use."[EPA-822_R-05-005 (December 2005)]. This document also established WQC for nonylphenol of 1.7 µg/l (chronic) and 7.0 µg/l (acute). For the period of 2014 through 2018, the NP values have ranged from ND to 0.612 µg/l. Since this data was limited, we also looked back to the period of 2009 through 2014, as shown in Attachment B. During this period**,**

NP concentrations at Outfalls 001, 002, 003, and 006 averaged less than 1.0 µg/l during the permit term, while the highest values were in the range of 2-9 µg/l. At the airfield outfall sampling shown in Attachment B, the majority of sampling days show NP levels between non-detect and 2 µg/l. On one sampling date, March 7, 2013, NP levels for the airfield outfalls averaged 3.64 µg/l with a high value of 9.12 µg/l, the highest levels recorded during the period.

5.1.9.4(a) Review of Mixing Zone Study

Massport's 2009 WQI report included an assessment of estimated mixing zone conditions at Outfalls 001 (North), 002 (West), and 006 (A-21). The purpose of this assessment was to evaluate transport characteristics of the parameters of interest during deicer discharges. In addition, it appears to provide a justification for assessing attainment with water quality standards at a point within the receiving water, rather than at end-of-pipe, consistent with the establishment of regulatory mixing zone.

Massachusetts' water quality standards authorize the permit writer to establish regulatory mixing zones [(314 CMR 4.03(2)]. A mixing zone is defined as a "limited area or volume of a waterbody as a mixing zone for the ***initial dilution*** of a discharge. [emphasis added]" With respect to the design specifications for regulatory mixing zones, the standards state that the regulator will "determine the most severe hydrological conditions" applicable to the criteria and that, for coastal and marine waters, critical mixing conditions will be defined on a case-by-case basis.

In marine environments, "initial dilution" is defined as the rapid turbulent mixing which occurs between wastewater and surrounding ambient water resulting from the jet velocity at the point of release, driven by momentum and buoyancy in the plume relative to the ambient water (U.S. EPA, 1985b [21]). Jet momentum and buoyancy are expended when the plume reaches equilibrium with the ambient environment, and the primary mode of mixing transitions to passive random diffusion and turbulence driven by ambient currents. When developing regulatory mixing zones for acute criteria in marine environments, it is typical to model the discharge based on a reasonable, worst-case scenario which utilizes cumulative $10^{th}/90^{th}$ percentile values or other stringent critical conditions for the parameters of interest (*e.g.*, effluent discharge rate, ambient current, stratification conditions, etc.). By using a reasonable, worst case scenario, one is more likely to be protective of rare, short duration acutely toxic effects.

<u>Outfalls 001 & 006 (A21)</u>

Modeling efforts described in the WQI report for Outfalls 001 and A21 were undertaken with the RMA2 model, which is a 1D/2D, finite element flow model. RMA2 is a depth-averaged model and is not capable of directly modeling depth stratification in the ambient environment. Example inputs typically required for this model include outfall discharge rates, boundary conditions defining tidal characteristics over the simulation period, receiving water bathymetry, and bed roughness parameters.

[21] Initial Mixing Characteristics of Municipal Ocean Discharges: Volume 1 Procedures and Applications. EPA-600-3-85-073.

The Permittee used specific discharge events occurring in the winter of 2008/2009 to directly simulate deicing events in the model environment (Table 6 above). Massport noted that "[t]he events were selected based on the availability of collected chemistry and toxicity data."

Massport's 2009 WQI report does not directly provide effluent flow rates utilized in the modeling, but rather provides graphical summaries. A review of these graphs indicates that some level of discharge was nearly continuous at Outfall A21 (maximum of approximately 3.9 MGD), and flows at Outfall 001 were discontinuous (maximum of approximately 16.2 MGD). Figure 4.2-4 of the Report shows a January 28, 2009 event when high discharge rates were sustained during a low tide, resulting in a comparatively large area required to achieve a 2:1 dilution ratio.

In the 2007 Permit, flow rate reporting was not required during deicer event dischargers. From the available information, EPA is unable to precisely identify a zone of initial dilution associated with the discharges from Outfalls 001 and A21. The model results associated with 28 January 2009 are likely to best approximate a reasonable worst-case scenario at Outfall 001 due to relatively high discharge rates occurring at or near stagnant tide conditions. Of the three periods simulated, January 29, 2009 appears to be the most stringent condition at Outfall A21. Figures 5.1.9.4(a) and 5.1.9.4(b) illustrate the levels of dilution achieved as a function of downstream distance (reproduced from Table 4.2 of Massport's WQI Report).

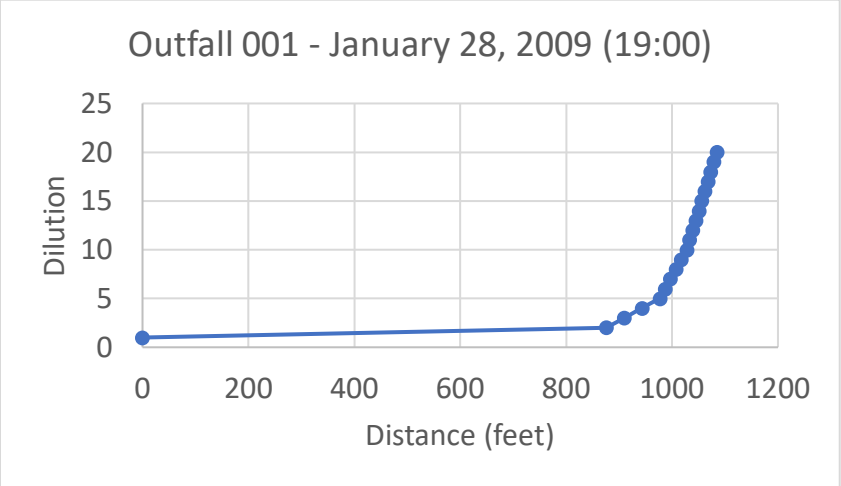

Figure 5.1.9.4(a) Predicted dilution as a function of distance from Outfall 001.

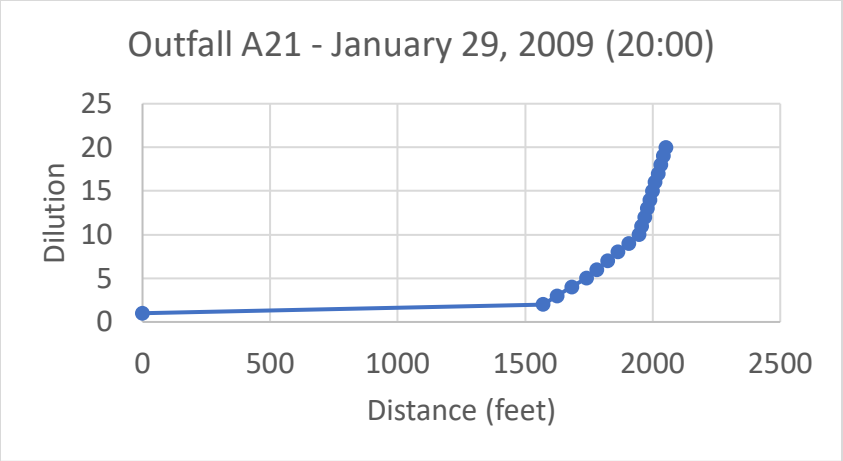

Figure 5.1.9.4(b) Predicted dilution as a function of distance from Outfall A21.

Outfall 002

Modeling efforts for Outfall 002 were undertaken with the EFDC model, version 1.01. The outfall surface discharges into a box culvert and results in a surface plume. The box culvert flows to a channel that is approximately 2,950 ft wide. Discharge flow rates and tidal conditions were based on observed values on the dates of interest, as measured at the discharge location and reported by NOAA, respectively. The model domain was specified based on the observed characteristics of the culvert and surrounding environments. At each time step, the change in tide elevation was used to calculate the corresponding change in the upstream tidal prism volume (area multiplied by delta height). The change in volume was divided by the tide adjusted cross-sectional area of the Boston Harbor Channel adjacent to the Outfall 002 to provide a cross-sectional average velocity. The resulting velocity time-series was applied to the cross-sectional area represented by the model to provide a flow time-series for use at the upstream model boundary.

Massport's WQI report does not directly provide effluent flow rates utilized in the modeling, but rather provides graphical summaries. A review of these graphs indicates that flows at Outfall 002 were discontinuous but reached an instantaneous maximum of approximately 64 MGD. From the available information, EPA is unable to precisely identify a zone of initial dilution associated with the discharge from Outfall 002. The model results associated with January 28, 2009 are likely to best approximate a reasonable worst-case scenario at Outfall 002 due to relatively high discharge rates occurring at or near stagnant tide conditions. Figure 5.1.9.4(c) illustrates the levels of dilution achieved as a function of downstream distance at Outfall 002 (reproduced from Table 4.2 of the Massport's WQI Report).

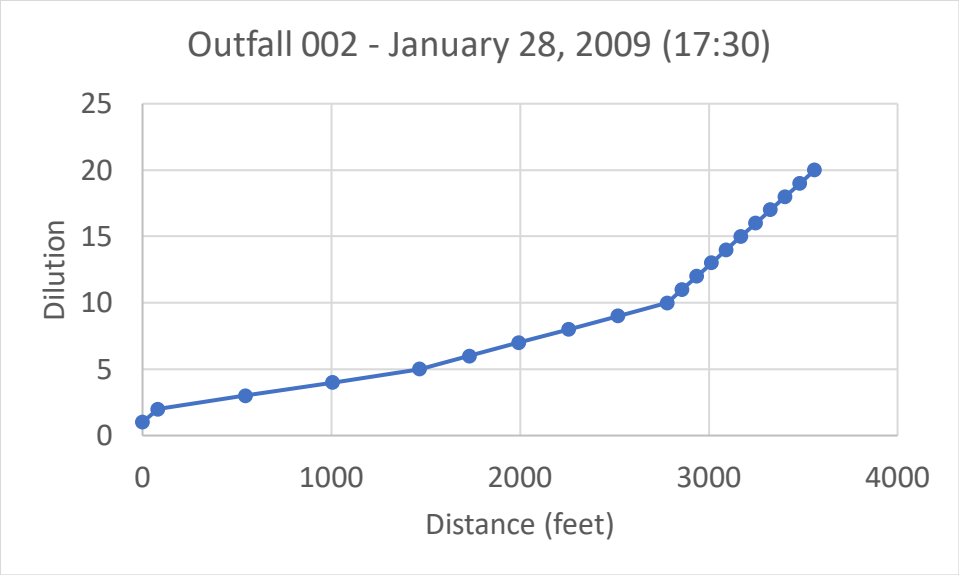

Figure 5.1.9.4(c) Predicted dilution as a function of distance from Outfall 002

Dilution Factors

EPA has assumed that the dilution ratios presented in Massport's WQI report represent a ratio of total receiving water flow (ambient + effluent) to effluent flow.

Outfalls 001 and A21 do not appear to achieve rapid mixing in the nearfield environment, since both appear to discharge to tidal marshlands which eventually drain to deeper waters, roughly 900 and 1600 feet away, respectively. Limited to no dilution occurs following discharge and only when it is well away from the discharge location does the plume begin to disperse. EPA does not believe that dilution for acute parameters is warranted on the basis of the results presented in Massport's WQI report and on the understanding of the nature of the receiving water. Since both discharges follow a narrow channel out to deeper water around low tide, a small dilution credit could be authorized outside of the time period around low tide. Although such a credit could be allowed for Outfall A21, whose discharge is not tied to tidal cycles, no dilution could be allowed for Outfall 001, since most discharges generally occur a few hours on either side of low tide.

Outfall 002 appears to achieve some level of rapid mixing in the nearfield environment. As stated previously, it is not possible to precisely define a zone of initial dilution with the available data. However, based on Figure 4.2-19 of the WQI report, it appears that plume travels rapidly. Based on the available information, EPA believes it is appropriate to authorize a regulatory mixing zone not to exceed a dilution of 10:1 for Outfall 002.

Reasonable Potential Analysis for Nonylphenol and Tolyltriazole

EPA assessed anticipated water quality impacts for NP and TT using reasonable potential analysis procedures detailed in U.S. EPA's *Technical Support Document for Water Quality-based Toxics Control*.

The WQI report showed maximum observed NP and TT concentrations in end-of-pipe deicer effluent of 2.3 µg/L and 68 µg/L, respectively. A review of available DMR monitoring data is summarized in Table 7, along with recommended acute criteria/targets.

Table 7 - DMR data from Deicing Episodes

Monitoring Location	Maximum Effluent Concentration (2009 – 2020)	
	NP (µg/L)	TT (mg/L)
Outfall 01B (North)	1.95	0.226
Outfall 02B (West)	4.74	1.388
Outfall 03B [1]	2.0	0.1296
Outfall 06B (Perimeter Outfalls)	9.12 [2]	0.203
Aquatic Life Criteria/ Targets	7.0/1.7 [3]	0.47

[1] Composite sample; [2] Result was from airfield outfall A9; [3] Acute criterion/chronic criterion

Based on the available data (*i.e.*, maximum effluent concentrations observed each month for intermittent discharges), EPA elected to estimate receiving water concentrations based on maximum observed effluent concentrations (MEC) reported during the period of the existing Permit (2009 – 2020).

Nonylphenol

Based on the MEC and assuming no dilution is authorized, reasonable potential to cause or contribute to an exceedance of the chronic criterion for NP was observed at Outfalls 01B, 02B, 03B and 06B (predicted receiving water concentrations of 1.95, 4.74, 2.0, and 9.12 µg/L versus a chronic criterion of 1.7 µg/L).

For Outfall 001, the MEC of 1.95 µg/l was slightly above the chronic criterion, while the majority of other readings were below 1.7 ug/l. Although dilution will not be allowed for chronic parameters as described above, the majority of the readings from the entire data set were below the chronic criterion. EPA also considered the Deicer Discharge Reduction Plan required in Part I.D of the Permit that will reduce the amounts of glycols and associated additives such as nonylphenol that will be discharged to Outfall 001 during this permit term. In addition, these discharges are seasonal and intermittent. Therefore, there is no reasonable potential to violate WQS for NP at this outfall.

For Outfall 002, if a dilution credit of 3 was authorized, which is supportable given the available information as discussed above, no reasonable potential would be displayed for NP. The instream concentration of NP with the maximum effluent reading of 4.74 µg/L would be 1.58 µg/l with a DF of 3 (4.74/3) and there would not be expected to be a reasonable potential to violate WQS. The dilution of 3:1 is supported by the discussion above.

For Outfall 003, the Permittee reported composite effluent results from three different sampling locations contributing to this outfall. Only one of these averaged, composite samples exceeded the chronic criterion, at 2.0 µg/l. Although there was no dilution study conducted for Outfall

003, there are other drainage areas contributing to this outfall which are not in drainage areas where deicing occurs. In addition, these discharges are seasonal and intermittent. Therefore, EPA has determined that there is no RP to violate WQS for NP at Outfall 003.

Based on the MEC and assuming no dilution is authorized, reasonable potential to cause or contribute to an exceedance of the acute criterion for NP was observed only at Outfall 06B (predicted receiving water concentrations of 9.12 µg/L versus an acute criterion of 7.0 µg/L). This particular value was from a sample taken from airfield outfall A9, which has an unknown dilution, but which is in the same general area of tidal flats to which Outfall 001 discharges. The majority of airfield outfall samples were below the chronic criterion of 1.7 µg/l. Due to the intermittent nature of deicing and associated stormwater flows and their seasonality, the expected glycol reductions during the upcoming permit term and since the majority of samples at the airfield outfalls are well below the acute criterion for NP, EPA does not believe there is a RP to violate this WQS.

Tolyltriazole

Based on the MEC and assuming no dilution is authorized, reasonable potential to cause or contribute to an exceedance of the TT target was observed only at Outfall 002 (predicted receiving water concentration of 1.388 mg/L vs a target of 0.47 mg/L). If a dilution credit of 3 was authorized, which is supportable given the available information as discussed above, no reasonable potential would be displayed for TT at Outfall 002. The instream concentration of TT with the MEC of 1.388 mg/l would be 0.46 mg/l with a DF of 3 (1.388/3) and would not represent a reasonable potential to violate WQS.

The MEC at Outfalls 001, 003, and the airfield outfalls (represented by Outfall A21) were below the TT target level of 0.47 mg/l even without accounting for dilution; therefore, there is no RP for the effluent TT levels at these outfalls to violate WQS. In addition, the glycol reduction efforts that are required by this Permit are expected to reduce the levels of TT during this permit term and there is likely some dilution available at many of the airfield outfalls which is it not being factored into this determination.

Based on the monitoring results with the appropriate dilution factors as well as the expected reductions in glycols used in the upcoming permit term, there appears to be no reasonable potential to exceed the water quality criteria for either NP or TT at the Outfalls noted above. However, the draft permit retains the monitoring requirements for both parameters since they are routinely detected and will provide data for future RP analyses.

5.1.10 Per- and polyfluoroalkyl substances (PFAS)

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may

increase risk of adverse health effects.[22] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

On January 27, 2020, Massachusetts DEP established an Office of Research and Standards Guideline (ORSG) level for drinking water that applies to the sum of the following PFAS:[23,24]

- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctanoic acid (PFOA)
- Perfluorodecanoic acid (PFDA)

Based on the ORSG, MassDEP recommends that:

1. Consumers in sensitive subgroups (pregnant women, nursing mothers and infants) not consume water when the level of the six PFAS substances, individually or in combination, is above 20 ppt.
2. Public water suppliers take steps expeditiously to lower levels of the six PFAS individually or in combination, to below 20 ppt for all consumers.

In December 2019, MassDEP proposed revisions to 310 CMR 22.00: Drinking Water Regulation that would set a new PFAS Maximum Contaminant Level (MCL) of 20 ppt (ng/L) for the sum of the concentrations of six PFAS compounds, including all six compounds addressed by the ORSG (listed above).

Although the Massachusetts water quality standards do not include numeric criteria for PFAS, the Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) states:

> All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

The narrative criterion is further elaborated at 314 CMR 4.05(5)(e)2 which states:

> Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health-based regulation of the toxic pollutant shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00.

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[22] EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan,* EPA 823R18004, February 2019. Available at: https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf

[23] https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas

[24] https://www.mass.gov/doc/massdep-ors-guideline-for-pfas/download

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Draft Permit requires that the facility conduct quarterly effluent sampling for PFAS chemicals, six months after appropriate, multi-lab validated test methods are made available by EPA to the public. This sampling is required for Outfalls 01A, 02A, 03A, and 04A, which all represent drainage areas associated with fire-fighting equipment testing or fire-fighting system flushing. In addition, sampling is required for the deicing discharges that occur at Outfalls 01B and 02B, in order to determine whether PFAS compounds are present in the deicing formulations used at the airport. Outfalls 05A, 06A, 07A, and 08A, which are airfield outfalls which drain much smaller areas and are not expected to contain any fire-fighting testing or flushing discharges, are not required to sample for PFAS.

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. EPA is authorized to require this monitoring and reporting by CWA § 308(a), which states:

> "SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—
>
> > A. the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require…."

Since an EPA method for sampling and analyzing PFAS in wastewater is not currently available, the PFAS sampling requirement in the Draft Permit includes a compliance schedule which delays the effective date of this requirement until six months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website For wastewater see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods. EPA expects this method will be available by the end of 2021. This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters. After one year of monitoring, if all samples are non-detect for all six PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring.

5.1.11 Whole Effluent Toxicity

Sections 402(a)(2) and 308(a) of the CWA provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism, and persistence of the pollutants in the discharge do not cause toxicity, even when the individual pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Draft Permit will assure that the Facility does not discharge combinations of pollutants into the receiving water in amounts that would be excessively toxic to aquatic life or human health.

In addition, under § 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on WQSs. 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."*

In accordance with current EPA and State policies,[25] whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the $LC_{50.}$

There are many potential pollutant sources that could be combined in the discharges from the airport to pose a toxicity concern. These constituents are identified above and include petroleum hydrocarbons, solvents, antifreeze, deicing chemicals, and others. In order to evaluate the potential toxicity of these intermittent discharges, the 2007 Permit required chronic and modified acute toxicity testing during wet weather deicing episodes for Outfalls 001, 002 and 003 for two (2) marine species during the first and third years of the permit. In addition, Massport also conducted additional WET testing, some of which was required by an EPA information request. Since the WET testing information presented in Attachment A is limited, Attachment C has been included, which shows all past WET testing results for the airport. These test results show chronic and acute effects of varying degrees for all four (4) outfalls sampled. All of this sampling was conducted on discharges containing deicing flows.

Based on these past results indicating effluent toxicity and ongoing activities at the airport which result in the discharge of a variety of pollutants, this Draft Permit has established WET testing for Outfalls 01A, 02A and 04A, since these outfalls are believed to have the greatest potential for containing pollutants from various sources. The Draft Permit requires acute WET tests to be conducted on four (4) quarterly samples, two (2) of which must be conducted on discharges during or soon after deicing has occurred for Outfalls 01A and 02A. WET testing will provide an assessment of the toxicity associated with the potential synergistic effects of this combination of pollutants.

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[25] *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters*. February 23, 1990.

Although the tolyltriazole and nonylphenol compounds discussed above are often found in deicing fluid formulations, there may be other compounds in these deicing chemicals which are either not disclosed or deemed proprietary in the information provided by the manufacturers. Although tolyltriazole and nonylphenol are being phased out in some glycol products, they are still being used and routinely detected in the deicing effluent sampling. Due to the uncertainty of the toxicity exhibited by these and other proprietary compounds, the Draft Permit requires that 2 of the 4 annual WET tests are conducted during or shortly after periods of deicing. This testing will provide additional data to evaluate the potential toxicity of discharges that contain a combination of known and unknown glycol additives.

Toxicity testing must be performed in accordance with the EPA Region 1 test procedures and protocols specified in **Attachment A,** *Marine Acute Toxicity Test Procedure and Protocol* (July 2012) of the Draft Permit. Massport will provide the LC_{50} and No Observed Acute Effluent Level (NOAEL) concentrations for each WET test.

5.2 Special Conditions

5.2.1 Best Management Practices

Pursuant to § 304(a) of the Act and 40 CFR § 122.44(k), best management practices (BMPs) may be expressly incorporated into a permit on a case-by-case basis where it is determined they are necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA under § 402(a)(1). BMPs may be necessary to meet effluent limitations because the discharge may contain pollutants listed as toxic under § 307(a)(1) of the CWA or pollutants listed as hazardous under § 311 of the CWA, for the control of stormwater discharges under § 402(p) of the CWA, or where numeric effluent limits are infeasible. Pollutants may be present because they are generated during airport operations, which could result in significant amounts of these pollutants reaching waters of the United States via discharges of stormwater.

In this case, the Draft Permit requires the selection, design, installation, and implementation of control measures for stormwater associated with airport operations to comply with the non-numeric technology-based effluent limits in the Draft Permit. These non-numeric limitations are consistent with the limitations specified in Part 2.1.2 and Part 8, Sector S (Air Transportation) of EPA's Multi-Sector General Permit (MSGP) effective March 1, 2021.[26] Requirements include:

- Minimizing exposure of processing and material storage areas to stormwater discharges;
- Designing good housekeeping measures to maintain areas that are potential sources of pollutants;
- Implementing preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
- Implementing spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur;
- Designing of erosion and sediment controls to stabilize exposed areas and contain runoff

[26] The MSGP is currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp

using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants;
- Utilizing runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
- Developing proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
- Conducting employee training to ensure personnel understand the requirements of this permit;
- Minimizing dust generation and vehicle tracking of industrial materials; and
- Complying with sector specific non-numeric technology-based effluent limitations included in Sector S (Air Transportation) of the MSGP.

These non-numeric effluent limitations support, and are equally enforceable as, the numeric effluent limitations included in the Draft Permit. The purpose of these requirements is to reduce or eliminate the discharge of pollutants to waters of the United States. They have been selected on a case-by-case basis based on those appropriate for this specific facility. *See* §§ 304(e) and 402(a)(1) of the CWA and 40 CFR § 122.44(k). These requirements ensure that discharges from the Facility will meet State WQSs pursuant to CWA section 301(b)(1)(C) and 40 C.F.R. 122.44(d)(1). Unless otherwise stated, the Permittee may select, design, install, implement and maintain BMPs as the Permittee deems appropriate to meet the permit requirements. The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications.

5.2.2 Stormwater Pollution Prevention Plan

On September 9, 1992, EPA issued its general permit for stormwater discharges associated with industrial activity, which, among other things, required all facilities to prepare a Stormwater Pollution Prevention Plan (SWPPP) to implement technology-based pollution prevention measures in lieu of numeric limitations. 57 FR 41264. The general permit established a process whereby the operator of the industrial facility evaluates potential pollutant sources at the site and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in stormwater runoff. 57 FR 41242. This Draft Permit contains requirements for the Permittee to continue to implement and maintain a SWPPP for stormwater discharges associated with industrial activity. These requirements are consistent with EPA's 2021 MSGP.

As discussed, NPDES permits may require BMPs on a case-by-case basis in accordance with CWA § 304(e) and 40 CFR § 125.103(b) when necessary to carry out the provisions of the statute under CWA § 402(a)(1). In the context of the SWPPP, BMPs should generally include processes, procedures, schedules of activities, prohibitions on practices, and other management practices that will prevent or reduce the discharge of pollutants in stormwater runoff. The continued implementation of the SWPPP is an enforceable element of the permit. The Draft Permit directs the Permittee to incorporate BMPs, as described in the Draft Permit, directly into the SWPPP, which serves to document the selection, design and installation of control measures selected to meet the permit effluent limitations. The goal of the SWPPP is to reduce or prevent the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff.

As described in Section 2.0 above, Massport and its Co-Permittee tenants engage in multiple activities which discharge pollutants to the receiving waters either directly or indirectly through stormwater runoff. Operations include one or more of the following activities from which there is or could be runoff leading to several outfalls: aircraft fueling, vehicle maintenance and repair, rubber removal from runways, chemical handling and storage, deicing and anti-icing, and others as noted in Section 2.0 above. To control these and other activities which could contribute pollutants to waters of the U.S. and violate MASWQS and the CWA, the Draft Permit requires that the Permittee continue to implement and maintain a SWPPP containing BMPs appropriate for this facility (see Sections 304(e) and 402(a)(1)(B) of the CWA and 40 C.F.R. § 125.103(b)).

The SWPPP requirements in the Draft Permit are intended to provide a systematic approach by which the Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) it uses to achieve compliance with the conditions of the permit. The SWPPP supports the permit's numerical effluent limitations and is an enforceable element of the permit. *See* Draft Permit, Part I.C. (SWPPP requirements).

Ongoing implementation of the SWPPP involves the following measures:

(1) Maintaining a team of qualified facility personnel who are responsible for carrying out the objectives of the SWPPP and revising it as necessary;
(2) Conducting ongoing assessment of potential stormwater pollution sources;
(3) Maintaining and revising appropriate management practices and controls for these potential pollution sources; and
(4) Periodically re-evaluating the effectiveness of the SWPPP in preventing stormwater contamination and complying with the various terms and conditions of the Permit.

The SWPPP may reflect pertinent requirements from other environmental management or pollution control plans, such as a Spill Prevention Control and Countermeasure (SPCC) plan under Section 311 of the CWA and 40 CFR Part 112 or a Corporate Management Practices plan. The Permittee may incorporate any part of such a plan into the SWPPP by reference, but any provision from another plan that is being incorporated by reference into the SWPPP must be attached to the SWPPP so that it is available for review and inspection by EPA and MassDEP personnel upon request. Although relevant portions of other environmental plans, as appropriate, can be built into the SWPPP, ultimately however, it is important to note that the SWPPP is required to be a comprehensive, stand-alone document. Thus, any provision from another plan that is being incorporated by reference into the SWPPP must be physically attached to the SWPPP.

The Draft Permit also requires the Permittee to incorporate into its SWPPP all specific pollution control activities and other requirements found in the existing MSGP provisions for "Industrial Sector S, Air Transportation." [27]

[27] The most recent MSGP was issued in 2021. *See* https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp

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The Draft Permit requires the Permittee within 90 days of the effective date of the permit to certify that the SWPPP has been revised as necessary, meets the requirements of the permit, and reduces or eliminates the discharge of pollutants from stormwater associated with industrial activity at the Facility. The Permittee must also certify at least annually that the Facility has complied with the BMPs described in the SWPPP, including inspections, maintenance, and training activities. The Permittee is required to amend and update the SWPPP if any change occurs at the Facility affecting the SWPPP, such as changes in the design, construction, operation, or maintenance of the Facility. The SWPPP must be maintained on site at the Facility and provided to EPA and/or the State upon request. All SWPPP records must be maintained on-site for at least three years.

5.2.3 Glycol Reduction

As discussed in Section 3.1.1 above and Part I.C.2 of the Draft Permit, Massport and most of its Co-Permittee tenants that conduct deicing operations are required to reduce the levels of glycols that are applied at Logan. Massport is required to implement a blend-to-temperature program as well as other glycol reduction measures to demonstrate a decrease in glycol usage during the deicing season as measured at Outfalls 001 and 002. Blend-to-temperature is a program which reduces glycol usage by blending Type I aircraft deicing fluid (ADF) based on temperature and other factors, including ensuring compliance with all FAA regulations and operational safety. Massport has estimated this approach may reduce glycol application levels by up to 30% when fully implemented.

5.2.4 Discharges of Chemicals and Additives

Chemicals and additives include, but are not limited to: algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants. The Draft Permit allows the discharge of only those chemicals and additives specifically disclosed by the Permittee to EPA and the State, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State WQSs. The following chemicals and additives were disclosed by Massport to EPA:

Anti-Icing/Deicing Chemicals: Propylene Glycol- Based

Safewing - MPI LFD 88, MP IV Launch, MPI LFD Ready to use 55/45 Blend - Clariant Corp.
Polar – Plus LT, Guard Advance – Cryotech Deicing Technology
UCAR – Flight Guard AD-49, ADF 55/45 Blend – Dow Chemical

Anti-Icing/Deicing Chemicals: Ethylene Glycol- Based

TKS Blend – Aviation Laboratories, Inc.

Deicing Chemicals

Potassium Acetate – Nachurs Alpine Solutions

Fuel/Oils

Aviation Jet Fuel (Jet A-1) – NESTE Oyj
Gasoline (Several Grades) – Phillips 66 & Trafigura Ventures
Diesel Fuel – REG Marketing and Logistics Group, LLC
Turbine Oil – Mobil DTE Oil Heavy Medium – Exxon Mobil

Urethane-Based Coatings

MC-Universal Primer - Wasser Coatings
MC-Luster 100 Topcoat - Wasser Coatings

Fire Fighting Foam

Fire Fighting Foam Concentrate – HD AFFF 3% - HD Fire Protect Pvt. Ltd.

However, EPA recognizes that chemicals and additives in use at a Facility may change during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA and the State in writing of the discharge a new chemical or additive; allows for EPA and State review of the change; and provides the factors to evaluate the appropriateness of such changes. The Draft Permit specifies that for each chemical or additive, the Permittee must submit the following information, at a minimum, in writing to EPA and the State:

- Product name, chemical formula, and manufacturer of the chemical/additive.
- Purpose or use of the chemical/additive.
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive.
- The frequency (e.g., hourly, daily), magnitude (e.g., maximum and average), duration (e.g., hours, days), and method of application for the chemical/additive.
- The maximum discharge concentration.
- If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

The Permittee must also provide an explanation which demonstrates that the discharge of such chemical or additive: 1) will not add any pollutants in concentrations which exceed permit effluent limitations; 2) will not cause a violation of any applicable water quality standard; and 3) will not add any pollutants that would justify the application of permit conditions different from, or in addition to, those currently in this permit.

Assuming these requirements are met, discharges of a new chemical or additive is authorized under the permit upon notification to EPA and the State, unless otherwise notified by EPA or the State.

5.3 Standard Conditions

The standard conditions of the permit are based on 40 CFR § 122, Subparts A and D and 40 CFR § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority to and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and any habitat of such species that has been designated as critical under the ESA (i.e., "critical habitat").

Section 7(a)(2) of the ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Facility's discharges of pollutants. The Draft Permit is intended to replace the 2007 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation with the Services, when required under § 7(a)(2) of the ESA.

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of federally listed species inhabit (seasonally) waters in the broad general area associated with coastal Massachusetts. Coastal areas of Massachusetts provide habitat for a number of federally protected marine species, including: adult and juvenile life stages of the following sea turtles - leatherback sea turtles (*Dermochelys coriacea*), the Northwest Atlantic Ocean Distinct Population Segment loggerhead sea turtles (*Caretta caretta*), Kemp's Ridley sea turtles (*Lepidochelys kempii*), green sea turtles (*Chelonia mydas*); adult and juvenile life stages of the following whales - North Atlantic right whales (*Eubalaena glacialis*) and fin whales (*Balaenoptera physalus*), and North Atlantic Right Whale Critical Habitat. Further analysis was done with regard to the presence or absence of these protected species and critical habitat areas in the near shore inner harbor action area. Based on this review, EPA does not consider the near shore urban areas of Boston Harbor adjacent to the Massport Logan International Airport Facility to be suitable habitat for the marine species listed above. Based on the normal distribution of these species, it is unlikely that any of the coastal NOAA Fisheries listed species identified in coastal Massachusetts waters would be expected to be present in the vicinity of the action area.

In addition, shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus*), two federally protected anadromous fish species under the jurisdiction of NOAA

Fisheries, can possibly be found transiting areas along the Massachusetts coast. However, these sturgeon species are not expected to be associated with the tidal rivers that flow into Boston Harbor or the near shore urban areas associated with the Massport Logan Airport Facility. Based on the normal distribution of these anadromous species, it is unlikely that the protected sturgeon species identified above would be expected to be present in the vicinity of the action area.

For protected species under the jurisdiction of the USFWS, the dwarf wedgemussel (*Alasmidonta heterodon*), a listed endangered species, has been documented in Massachusetts in the Connecticut River watershed. Information obtained from the USFWS indicates that the dwarf wedgemussel is not found in the Boston Inner Harbor within the action area resulting from Massport discharges.

However, one terrestrial listed threatened species, the northern long-eared bat (*Myotis septentrionalis*) was identified as potentially occurring in the action area of the Facility discharge. [28] According to the USFWS, the threatened northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action area in the Boston Inner Harbor and Boston, Massachusetts area overlaps with the general statewide range of the northern long-eared bat, EPA prepared an Effects Determination Letter for the Massport Logan Facility's NPDES Permit Reissuance and submitted it to USFWS. Based on the information submitted by EPA, the USFWS notified EPA by letter, dated March 18th, 2021, that the permit reissuance is consistent with activities analyzed in the USFWS January 5, 2016, Programmatic Biological Opinion (PBO)[29]. The PBO outlines activities that are excepted from "take" prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.). The USFWS consistency letter concluded EPA's consultation responsibilities for the Massport Logan NPDES permitting action under ESA Section 7(a)(2) with respect to the northern long-eared bat. No further ESA section 7 consultation is required with USFWS.

At the beginning of the public comment period, EPA notified USFWS and NOAA Fisheries Protected Resources Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

No ESA consultation is required as a result of this permitting action. However, initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this analysis; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be required.

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[28] See §7 resources for USFWS at https://ecos.fws.gov/ipac/.
[29] USFWS Event Code: 05E1NE00-2021-E-04531, February 18, 2021.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 *et seq*., 1998), EPA is required to consult with the NOAA Fisheries if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat". *See* 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" ("EFH") as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (*e.g*., contamination or physical disruption), indirect (*e.g.*, loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

EFH is only designated for fish species for which federal Fisheries Management Plans exist.[16] *See* U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Massport Logan, which discharges though Outfall 001, 002, 003, 004, 005, 006, 007, and 008 into the Boston Harbor, MA 70-01, in Boston, MA. Boston Harbor is covered by EFH designation for marine systems at Latitude 42º 20 ' 54.0" Longitude 71 º 0' 25" as determined by the NOAA EFH Mapper.[30] Therefore, EPA conducted additional analysis of the Facility's action area to determine potential effects to fish species and habitat.

Proposed Action and Resources: As described in Section 1.0 of this Fact Sheet, Massport has applied for re-issuance of the NPDES Permit for Logan. With limitations, the permit authorizes Massport and the Co-Permittees to discharge stormwater associated with industrial activity to Boston Inner Harbor, Boston Harbor and Winthrop Bay. Massport submitted an updated permit application to EPA on April 25, 2012 for reissuance of their current permit. EPA intends to reissue the facility's NPDES permit for the discharges described above. Thus, Massport, as well as the Co-Permittees, will continue to discharge stormwater associated with industrial activity to Winthrop Bay, Boston Harbor and Boston Inner Harbor through several outfalls. The outfalls, treatment systems, and potential sources of pollution associated with the variety of activities on the airport are described previously in this Fact Sheet.

A review of the relevant EFH information provided by NOAA Fisheries indicates that EFH has been designated for 27 managed species and one habitat of particular concern within the NOAA Fisheries boundaries during one or more of the life stage categories (*i.e.*, eggs, larvae, juveniles, adults, and spawning adults) encompassing Massachusetts Bay. It is possible that a number of these species utilize these receiving waters for spawning, while others are present seasonally. The species are listed in Attachment D.

[30] NOAA EFH Mapper available at http://www.habitat.noaa.gov/protection/efh/efhmapper/

Based on prior discussions with NOAA Fisheries, managed species of particular concern in these receiving waters are Atlantic cod (*Gadus morhua*) and winter flounder (*Pseudopleuronectes americanus*). Winter flounder eggs are negatively buoyant and adhesive. Except for their presence on the major offshore banks, the eggs are generally deposited in very shallow coastal embayments. Winter flounder larvae are initially pelagic but become more bottom oriented as metamorphosis approaches. Overall, winter flounder and Atlantic cod are largely demersal species, or live near the sea bottom.

Analysis of Effects: The discharges of stormwater from the facility may impact EFH directly or indirectly. A potential direct impact is the toxic effect of individual pollutants or a combination of pollutants in the discharged stormwater. A potential indirect effect is the depletion of dissolved oxygen in the receiving water below threshold levels necessary to support aquatic life. As noted in Section 5.1.9 above, deicing and anti-icing compounds (glycols) are biodegradable and exhibit relatively high oxygen demand, which may be measured as BOD and COD, which tend to depress DO levels in receiving waters. Several factors are expected to minimize any adverse impacts on EFH due to the facility's stormwater discharges, which include the nature of stormwater discharges, locations of the outfalls, and mixing in receiving waters. For example, the discharges from the facility flow intermittently and are directly related to storm events. The outfalls discharge to Winthrop Bay and Boston Inner Harbor and become further diluted as they mix within the tidal currents of Boston Harbor. It is therefore unlikely that EFH are subject to immediate undiluted contact with any of the outfalls from the facility. In addition, this permit requires the implementation of a Deicer Discharge Reduction Plan in Part I.C.2 which will reduce the overall loading of glycol compounds to the receiving waters.

Section 5.1.9.2 above includes a review of DO monitoring data that has been conducted since the 2007 Permit was issued. These data are mostly from MWRA station sampling in Boston Harbor and most were found to be above the minimum DO level of 5.0 mg/l for Class SB waters as required by the MA WQS. However, since these stations were not in the immediate vicinity of the Massport discharges and thus beyond the influence of the deicing discharges, the full extent of the oxygen-demand on DO levels may not have been reflected at these locations. In addition, it is believed that the majority of these samples were taken outside of the deicing season, which runs roughly from November through April. Therefore, in order to assess the effluent DO levels from this site, the Draft Permit has established effluent DO monitoring to complement the BOD and COD monitoring to determine whether there is a reasonable potential to violate the MA WQS of 5.0 mg/l for DO.

Regarding the various operations at the airport, the most effective operational measures are pollution prevention measures regarding stormwater discharges. In this regard the Draft Permit continues to require the implementation of a SWPPP, the requirements of which are detailed in Part I.C of the Draft Permit and described in Section 5.2.2 of this Fact Sheet. The SWPPP contains specific BMPs for all specific operations conducted on the airport property by Massport and its co-Permittees, which have the potential to contribute pollutants to stormwater discharges. For example, there are BMPs which require the Permittee to specifically address measures that will reduce the discharge of glycols to the receiving water, which contain oxygen depleting compounds and which could directly impact EFH species and their habitat.

Regarding potential toxic effects due to pollutants in the discharged stormwater, EPA believes that the discharges from the outfalls, as restricted by the Draft Permit conditions, will not directly or indirectly cause adverse effects to EFH species. The Draft Permit contains effluent limits that comply with MASWQS for Class SB waters. The draft permit continues to require effluent limitations for flow, pH, oil and grease, and TSS and has established permit limits for *fecal coliform* and *enterococcus*. The Draft Permit also requires monitoring for surfactants, PAHs, benzene, propylene glycol, BOD_5, COD, total ammonia nitrogen, nonylphenol, and tolyltriazole. EPA is requiring more frequent whole effluent toxicity (WET) testing to ensure that the composite of pollutants in the effluent are not toxic to aquatic organisms.

EPA believes that the effluent limitations, conditions, and monitoring requirements contained in the Draft Permit are protective of state water quality standards, will provide a continual assessment of the quality of the discharges, and will minimize impacts to aquatic organisms, including EFH species. If effluent monitoring detects pollutants at concentrations which reasonably could be expected to cause or contribute to a violation of state water quality standards (such as toxicity or excessive COD causing insufficient dissolved oxygen), then EPA can modify this permit to include numeric limits for those pollutants.

EPA's Opinion of all Potential Impacts and Proposed Mitigation: With the adoption of the mitigating measures contained in the Draft Permit, EPA concludes that the stormwater discharges from the permitted outfalls at Logan will not have significant adverse effects on EFH. This conclusion is based on the following factors:

- The discharges are intermittent and not continuous;
- This Draft Permit action does not constitute a new source of pollutants because it is the reissuance of an existing NPDES permit;
- The Facility withdraws no water from Boston Harbor, so no life stages of EFH species are subject to impingement or entrainment;
- Discharge limits are included for total suspended solids, pH, oil and grease, fecal coliform, and *Enterococcus* in order to meet federal effluent limitations guidelines and state water quality standards. Reporting requirements have been retained for surfactants, benzene, total PAHs, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene and naphthalene, BOD, COD, ammonia nitrogen, propylene glycol, tolytriazole, and nonylphenol. Reporting requirements for six PFAS compounds have also been added to the draft permit;
- The Draft Permit contains requirements for quarterly Whole Effluent Toxicity (WET) testing to monitor and report LC_{50}, NOAEL, pH, total solids, total suspended solids, ammonia, salinity, total organic carbon, total cadmium, total copper, total nickel, total lead and total zinc;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The Draft Permit contains extensive SWPPP requirements and BMPs to minimize pollutant loadings from stormwater discharges associated with industrial activity;

- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and
- The Draft Permit prohibits violations of the state water quality standards and monitoring measures are in place to assess the potential for WQS violations.

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A number of sensitive marine resources, including salt marsh, soft shell clams and eelgrass, exist and thrive along the very edge of the airfield. As described below, the eelgrass habitat over the last 10 years has expanded in an area off the southeast corner of the Logan site and there is an area of conditionally restricted shellfish habitat on the north side of the property.

Eelgrass is a designated critical habitat for several species under EFH in Magnuson-Stevens Act. Therefore, an assessment of the status of existing eelgrass beds in the vicinity of the airport's outfalls was conducted for the reissuance of this Permit. According to MassDEP's eelgrass maps[31], there are currently two (2) separate established eelgrass areas in the vicinity of the airport in Boston Harbor. One of these areas is adjacent to airfield outfalls A28 and A29 off Runway 22 while the other is near airfield outfalls A36 and A37, near Governor Island in Winthrop Harbor. MassDEP has been surveying and mapping these eelgrass areas since 1995 and they have shown to be growing consistently during this time from 20.6 acres in 1995 to 77.6 acres during the 2010-2013 survey period. Based on this enlargement of the eelgrass beds during this period, EPA has determined that they have not been adversely affected by Massport's discharges. EPA believes that the Draft Permit's effluent limits and other conditions are sufficiently stringent to allow for protection and continued propagation of eelgrass beds in the vicinity of these discharges.

Further mitigation for unavoidable impacts associated with reissuance of this permit is not warranted at this time because it is EPA's opinion that impacts will be negligible due to the permit limits and conditions that are required by the Draft Permit. These permit conditions are designated to be protective of all aquatic species, including those with EFH designations.

EPA believes that the conditions and limitations contained within the Draft Permit adequately protect all aquatic life, including those species with EFH designation. The Draft Permit proposes more frequent WET testing, new limits on bacteria, and continued implementation of the site SWPPP, which includes a requirement to reduce the discharges of deicing fluids to the receiving waters. Impacts associated with issuance of this permit to the EFH species, their habitat and forage, have been minimized to the extent that no significant adverse impacts are expected. Further mitigation is not warranted.

Future Environmental Review: The Draft Permit will require the ongoing collection of data to determine if WQS in the receiving waters are maintained. The Draft Permit contains a number of monitoring provisions which will be beneficial in future environmental reviews. This NPDES Permit will be due for renewal five years from its effective date. At that time, EPA will reassess the requirements necessary to meet WQS and protect EFH.

[31] See http://maps.massgis.state.ma.us/images/dep/eelgrass/eelgrass_map.htm.

The NOAA Fisheries Habitat Conservation Division will be notified, and consultation will be reinitiated if adverse impacts to EFH are detected as a result of this permit action or if new information becomes available that changes the basis for these conclusions.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

In addition, information to support EPA's finding has been included in a letter under separate cover that will be sent to the NOAA Fisheries Habitat Conservation Division during the public comment period.

6.3 Environmental Justice

Executive Order 12898 entitled "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations" states in relevant part that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...." The order also provides that federal agencies are required to implement the order consistent with and to the extent permitted by existing law.

In addition, in May 2013, EPA Region 1 issued the *EPA Region 1 Regional Implementation Plan to Promote Meaningful Engagement of Overburdened Communities in Permitting Activities* which describes actions that the Region's permitting programs will take when issuing EPA permits in order to promote greater participation in the permitting process by communities that have historically been underrepresented in the process.[32] It addresses four elements: 1) what types of permits will be prioritized, 2) how these permits will be reviewed for EJ concerns, 3) roles and responsibilities within Region 1 to carry out this plan, and 4) what actions Region 1 will take to ensure enhanced meaningful involvement where there are EJ concerns. Conducting enhanced outreach for permits that impact communities that have been historically underrepresented in the permitting process is a key element of Region 1's efforts to help ensure meaningful involvement.

Consistent with this plan, EPA's enhanced outreach activities for the Draft Permit will include: phone calls and email notification to community stakeholders; a 60-day public comment period; the release of a concise information sheet for the benefit of the community, explaining in simple language the Draft Permit and the public process; designating an EPA point of contact that the community can contact to discuss EJ concerns; and translating key documents into the primary languages spoken by community members. EPA will also host a virtual public meeting during which EPA will present an overview of the Draft Permit and answer questions from meeting participants. EPA will also host a separate virtual public hearing to allow the public an opportunity to provide oral comments for the record. In order to adhere to current COVID-19 guidance from the Centers for Disease Control and state and local restrictions on large gatherings

[32] Available at: https://www.epa.gov/environmentaljustice/epa-region-1-regional-implementation-plan-promote-meaningful-engagement

presently in effect, the meeting and the hearing will be conducted virtually and will be accessible by computer, mobile device or telephone. EPA will provide necessary translation and interpretation services in the primary languages spoken by community members during the meeting and the hearing.

The Draft Permit implements water pollution prevention and control requirements, including applicable technology-based and water quality-based limits, standards, and practices to ensure compliance with applicable CWA requirements, and meet State WQSs. The monitoring program is designed to obtain additional information, which can be used in ongoing surveillance of permitted activities and in future permit decisions. Additional special conditions continue to be included in the Draft Permit to ensure adverse impacts do not occur because of stormwater discharges associated with industrial activity from the airport. Additionally, the Draft Permit includes new numeric limits on bacteria consistent with the Pathogen TMDL discussed in Section 2.2.3 above. EPA has the authority to modify a permit if the threat of adverse environmental impact from the discharges were to occur, that is, a discharge which violates State WQSs. EPA therefore determined that the pollutant discharge levels authorized by the Draft Permit will not cause, have the reasonable potential to cause, or contribute to an excursion above WQSs.

EPA has determined that the Boston Harbor is covered by one or more EJ designations at Latitude 42º 21' 30" Longitude 71º 01' 45" as determined by EPA's "EJ Screen".[33] The water pollution prevention and control requirements in the Draft Permit address current adverse impacts to aquatic life, aesthetics and recreation in Boston Harbor, Boston Inner Harbor, and Winthrop Bay, and the Draft Permit will lead to continued water quality improvements in the these waters. EPA therefore has determined that the Facility's discharges will not result in disproportionately high and adverse human health or environmental effects on minority or low-income populations within the meaning of Executive Order 12898. EPA's EJ Screen evaluation is included in the administrative record associated with the Draft Permit (MA0000787).

7.0 Public Comments, Hearing Requests, and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to:

George Papadopoulos
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579
Email: Papadopoulos.george@epa.gov

EPA intends to hold a public hearing in consideration of the Draft Permit. Any person may submit oral or written comments to EPA and the State Agency at the public hearing, scheduled

[33] EPA's Environmental Justice Screening and Mapping Tool (Version 2020) is currently available at: https://ejscreen.epa.gov/mapper/.

for May 24, 2021. In reaching a final decision on the Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public at EPA's Boston office and on EPA's website.

Following the close of the comment period, and after the public hearing, EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed on EPA's website or at EPA's Boston office by appointment, Monday through Friday, excluding holidays from George Papadopoulos, EPA Region 1, 5 Post Office Square, Suite-100 (06-1), Boston, MA 02109-3912, or via email to papadopoulos.george@epa.gov.

Ken Moraff, Director
4/12/21 Water Division
U.S. Environmental Protection Agency

Attachment D: Essential Fish Habitat Species

EFH Species and Life Stages in the Vicinity of Massport Logan Airport Outfall at Latitude 42° 20’ 56.9” Longitude -71° 00’ 18.1”

Species/Management Unit	Lifestage(s) Found at Location
Atlantic Wolffish	ALL
Haddock	Juvenile
Winter Flounder	Eggs, Juvenile, Larvae/Adult
Little Skate	Juvenile, Adult
Ocean Pout	Adult, Eggs, Juvenile
Atlantic Herring	Juvenile, Adult, Larvae
Atlantic Cod	Larvae, Adult, Juvenile, Eggs
Pollock	Juvenile, Eggs, Larvae
Red Hake	Adult, Eggs/Larvae/Juvenile
Silver Hake	Eggs/Larvae, Adult
Yellowtail Flounder	Adult, Juvenile, Larvae, Eggs
White Hake	Larvae, Adult, Eggs, Juvenile
Windowpane Flounder	Adult, Larvae, Eggs, Juvenile
Winter Skate	Adult, Juvenile
American Plaice	Adult, Juvenile, Larvae, Eggs
Thorny Skate	Juvenile
Bluefin Tuna	Adult
White Shark	Juvenile/Adult
Northern Shortfin Squid	Adult
Longfin Inshore Squid	Juvenile, Adult
Atlantic Mackerel	Eggs, Larvae, Juvenile, Adult
Bluefish	Adult, Juvenile
Atlantic Butterfish	Eggs, Larvae, Adult
Spiny Dogfish	Sub-Adult Female, Adult Male, Adult Female
Atlantic Surfclam	Juvenile, Adult
Scup	Juvenile, Adult
Black Sea Bass	Adult

Habitat Area of Particular Concern
Inshore 20m Juvenile Cod

Attachment A

Massport Discharge Monitoring Report (DMR) Data – April 2015 through December 2020

Outfall 001A - Wet Weather

Parameter	TSS	TSS	pH	pH	Fecal Coliform	Fecal Coliform	Oil & grease
	Monthly Ave	Daily Max	Minimum	Maximum	Daily Max	MOAV GEO	Daily Max
Units	mg/L	mg/L	SU	SU	CFU/100mL	CFU/100mL	mg/L
Effluent Limit	Report	100	6	8.5	Report	Report	15
Minimum	0	0	5.5	5.5	0	0	0
Maximum	150	150	8.44	8.44	67000	67000	11
Average	8.9	8.9	7.14	7.14	6520	6520	0.602
Exceedances	N/A	1	1	0	N/A	N/A	0
4/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
5/31/2015	27	27	6.69	6.69	250	250	4
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
7/31/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
8/31/2015	5	5	6.54	6.54	1100	1100	4
9/30/2015	44	44	6.25	6.25	2000	2000	4
10/31/2015	5.1	5.1	8.22	8.22	3100	3100	4
11/30/2015	5	5	8.14	8.14	2200	2200	4.5
12/31/2015	6	6	8.33	8.33	3500	3500	4
1/31/2016	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
2/29/2016	9	9	6.71	6.71	3200	3200	4
3/31/2016	9.7	9.7	6.04	6.04	160	160	4
4/30/2016	17	17	5.5	5.5	210	210	4

5/31/2016	8.5	8.5	6.94	6.94	40	40	4
6/30/2016	22	22	7.13	7.13	3600	3600	4
7/31/2016	26	26	7.3	7.3	33000	33000	4
8/31/2016	6.2	6.2	7.41	7.41	14000	14000	4
9/30/2016	100	100	7.3	7.3	29000	29000	11
10/31/2016	12	12	6.85	6.85	48000	48000	4
11/30/2016	7.8	7.8	6.9	6.9	67000	67000	4
12/31/2016	8.6	8.6	6.8	6.8	3400	3400	4
1/31/2017	25	25	7.44	7.44	34000	34000	4
2/28/2017	45	45	7.4	7.4	3900	3900	4
3/31/2017	18	18	8.44	8.44	30	30	4
4/30/2017	6.6	6.6	7.08	7.08	70	70	4
5/31/2017	10	10	8.42	8.42	10	10	4
6/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	16	16	7.07	7.07	570	570	4
8/31/2017	12	12	8.03	8.03	4900	4900	4
9/30/2017	5	5	6.79	6.79	2000	2000	4
10/31/2017	5	5	7.31	7.31	1100	1100	4
11/30/2017	30	30	7.23	7.23	60	60	4
12/31/2017	5	5	6.16	6.16	290	290	4
1/31/2018	150	**150**	7.88	7.88	30	30	7.9
2/28/2018	14	14	7.44	7.44	NODI: E	NODI: E	4
3/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	6.6	6.6	6.6	6.6	10	10	4
5/31/2018	NODI: 8	NODI: E	NODI: 8	NODI: E	NODI: E	NODI: 8	NODI: E
6/30/2018	48	48	7.17	7.17	1200	1200	4
7/31/2018	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: S	NODI: V
8/31/2018	6.3	6.3	7.38	7.38	4600	4600	4

9/30/2018	7.1	7.1	6.96	6.96	3200	3200	4
10/31/2018	13	13	7.42	7.42	NODI: 8	NODI: 8	4
11/30/2018	5	5	6.67	6.67	580	580	4
12/31/2018	18	18	7.57	7.57	10	10	4
1/31/2019	26	26	7.76	7.76	40	40	0
2/28/2019	12	12	6.73	6.73	10	10	0
3/31/2019	16	16	NODI: G	NODI: G	60	60	0
4/30/2019	18	18	6.07	6.07	620	620	0
5/31/2019	18	18	6.9	6.9	30	30	0
6/30/2019	22	22	7.43	7.43	1600	1600	0
7/31/2019	0	0	6.19	6.19	20000	20000	0
8/31/2019	0	0	7.09	7.09	3300	3300	0
9/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
10/31/2019	7.1	7.1	7.21	7.21	3400	3400	0
11/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	30	30	7.26	7.26	500	500	6.1
1/31/2020	17	17	7.34	7.34	NODI: V	NODI: V	0
2/29/2020	26	26	7.28	7.28	90	90	0
3/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
09/30/2020	10	10	7.1	7.1	3400	3400	< 4
10/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
11/30/2020	28	28	7.04	7.04	590	590	< 4
12/31/2020	NODI: V	NODI:V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 001A – Wet Weather

Parameter	Benzene	Benzene	Flow rate	Flow rate	Surfactants (MBAS)	Surfactants (MBAS)	Enterococci	Enterococci
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	MOAV GEO	Daily Max
Units	ug/L	ug/L	MGD	MGD	mg/L	mg/L	CFU/100mL	CFU/100mL
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0.063	0.43	0	0	0	0
Maximum	0	0	7.572	8.79	1.54	1.54	33000	33000
Average	0	0	0.597	3.85	0.256	0.256	3890	3890
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	NODI: E	NODI: E	0.43	2.28	NODI: E	NODI: E	NODI: E	NODI: E
5/31/2015	<1	<1	0.25	2.34	0.13	0.13	2600	2600
6/30/2015	NODI: E	NODI: E	0.58	5.86	NODI: E	NODI: E	NODI: E	NODI: E
7/31/2015	NODI: E	NODI: E	0.23	4.38	NODI: E	NODI: E	NODI: E	NODI: E
8/31/2015	<1	<1	0.21	2.13	0.23	0.23	18000	18000
9/30/2015	<1	<1	0.44	8.79	0.09	0.09	33000	33000
10/31/2015	<1	<1	0.23	2.97	0.09	0.09	9000	9000
11/30/2015	<1	<1	0.27	3.01	0.14	0.14	1000	1000
12/31/2015	<1	<1	0.51	2.47	0.1	0.1	3500	3500
1/31/2016	NODI: E	NODI: E	0.74	5.19	NODI: E	NODI: E	NODI: E	NODI: E
2/29/2016	<1	<1	0.9	3.3	0.11	0.11	480	480
3/31/2016	<1	<1	0.4	4.1	0.05	0.05	390	390
4/30/2016	<1	<1	0.5	5.5	0.13	0.13	80	80
5/31/2016	<1	<1	0.26	3.63	0.25	0.25	450	450

6/30/2016	<1	<1	0.14	1.9	1.43	1.43	1400	1400
7/31/2016	<1	<1	0.063	0.43	1.54	1.54	10000	10000
8/31/2016	<1	<1	0.17	2.9	0.13	0.13	7300	7300
9/30/2016	<1	<1	0.098	0.76	1.38	1.38	11000	11000
10/31/2016	<1	<1	0.55	6.36	0.53	0.53	3600	3600
11/30/2016	<1	<1	0.24	3.28	0.28	0.28	2300	2300
12/31/2016	<1	<1	0.546	2.73	0.13	0.13	770	770
1/31/2017	<1	<1	0.617	4.237	0.29	0.29	350	350
2/28/2017	<1	<1	1.158	2.59	0.36	0.36	60	60
3/31/2017	<1	<1	0.864	2.311	0.25	0.25	40	40
4/30/2017	<1	<1	0.773	6.54	0.18	0.18	90	90
5/31/2017			0.343	2.936	0.13	0.13	10	10
6/30/2017	NODI: C	NODI: C	7.572	0.515	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	<1	<1	0.416	4.726	0.84	0.84	110	110
8/31/2017	<1	<1	0.148	3.05	0.76	0.76	420	420
9/30/2017	<1	<1	0.367	5.283	0.14	0.14	2900	2900
10/31/2017	<1	<1	0.44	4.545	0.09	0.09	13000	13000
11/30/2017	<1	<1	0.172	2.817	0.18	0.18	400	400
12/31/2017	<1	<1	0.51	1.759	0.1	0.1	5000	5000
1/31/2018	<2	<2	1.152	6.957	0.39	0.39	300	300
2/28/2018	<1	<1	1.131	1.479	0.1	0.1	NODI: E	NODI: E
3/31/2018	NODI: C	NODI: C	1.047	7.408	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	<1	<1	0.548	5.275	0.18	0.18	60	60
5/31/2018	NODI: 8	NODI: E	0.206	3.305	NODI: 8	NODI: E	NODI: 8	NODI: E
6/30/2018	<1	<1	0.315	4.046	0.16	0.16	3500	3500
7/31/2018	NODI: V	NODI: V	0.408	7.575	NODI: V	NODI: V	NODI: V	NODI: V
8/31/2018	<1	<1	0.444	4.513	0.1	0.1	2500	2500
9/30/2018	<1	<1	0.539	3.807	0.06	0.06	80000	80000

10/31/2018	<1	<1	0.351	3.671	0.08	0.08	NODI: 8	NODI: 8
11/30/2018	<1	<1	1.072	5.262	0.05	0.05	3500	3500
12/31/2018	<1	<1	0.289	2.444	0.14	0.14	160	160
1/31/2019	0	0	0.679	6.095	0.07	0.07	1200	1200
2/28/2019	0	0	0.484	2.328	0	0	350	350
3/31/2019	0	0	0.623	2.987	0.08	0.08	240	240
4/30/2019	0	0	0.713	7.599	0.184	0.184	570	570
5/31/2019	0	0	0.296	2.486	0.07	0.07	40	40
6/30/2019	0	0	0.478	4.328	0.28	0.28	100	100
7/31/2019	0	0	0.629	4.71	0.11	0.11	4300	4300
8/31/2019	0	0	0.392	4.368	0.07	0.07	9000	9000
9/30/2019	NODI: V	NODI: V	0.224	3.85	NODI: V	NODI: V	NODI: V	NODI: V
10/31/2019	0	0	0.432	4.8	0.06	0.06	23000	23000
11/30/2019	NODI: V	NODI: V	0.351	5.168	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	0	0	0.869	4.549	0.15	0.15	2200	2200
1/31/2020	0	0	0.246	1.625	0.07	0.07	NODI: V	NODI: V
2/29/2020	0	0	0.373	2.501	0.11	0.11	460	460
3/31/2020	NODI: Z	NODI: Z	0.401	3.531	NODI: Z	NODI: Z	NODI: Z	NODI: Z
4/30/2020	NODI: Z	NODI: Z	0.564	2.472	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	0.243	2.46	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	0.269	3.802	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	0.154	1.939	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	NODI: V	NODI: V	0.188	3.687	NODI: V	NODI: V	NODI: V	NODI: V
09/30/2020	< 1	< 1	0.091	1.225	< .13	< .13	1800	1800
10/31/2020	NODI: V	NODI: V	0.555	5.17	NODI: V	NODI: V	NODI: V	NODI: V
11/30/2020	< 1	< 1	0.433	6.419	.06	.06	1300	1300
12/31/2020	NODI: V	NODI: V	1.12	7.676	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 001A – Wet Weather

Parameter	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Indeno(1,2,3-cd)pyrene	Naphthalene	PAH. Total per Method 610
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	TOTAL
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0	0
Maximum	0	2	0	0	0	0	0	0	0
Average	0	0.111	0	0	0	0	0	0	0
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
9/30/2015	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
12/31/2015	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
3/31/2016	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
6/30/2016	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
9/30/2016	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
12/31/2016	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
3/31/2017	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
6/30/2017	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
9/30/2017	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
12/31/2017	<2	<2	<2	<2	<2	<2	<2	<2	NODI: B
3/31/2018	<2	<2	<2	<2	<2	<2	<2	<2	<2
6/30/2018	<2	<2	<2	<2	<2	<2	<2	<2	<2
9/30/2018	<2	<2	<2	<2	<2	<2	<2	<2	<2

12/31/2018	<2	<2	<2	<2	<2	<2	<2	<2	<2
3/31/2019	0	0	0	0	0	0	0	0	0
6/30/2019	0	0	0	0	0	0	0	0	0
9/30/2019	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V
12/31/2019	0	0	0	0	0	0	0	0	0
3/31/2020	0	0	0	0	0	0	0	0	0
6/30/2020	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z
9/30/2020	<2	<2	<2	<2	<2	<2	<2	<2	<2
12/31/2020	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V

Outfall 001A - Whole Effluent Toxicity Testing

Parameter	**LC50 Acute Menidia**	**Noel Static 1Hr Fert. Chronic Arbacia**	**Noel Static 7Day Chronic Menidia**
	Monthly Ave Min	**Monthly Ave Min**	**Monthly Ave Min**
Units	**%**	**%**	**%**
Effluent Limit	**Report**	**Report**	**Report**
No. of Exceedances	**N/A**	**N/A**	**N/A**
4/30/2015	NODI: 9	NODI: 9	NODI: 9
11/30/2015	NODI: E	NODI: E	NODI: E
1/31/2017	NODI: C	NODI: C	NODI: C
3/31/2018	NODI: 9	NODI: 9	NODI: 9
10/31/2018	NODI: 9	NODI: 9	NODI: 9
12/31/2019	NODI: V	NODI: V	NODI: V

Outfall 001B – Deicing

Parameter	CBOD5	BOD5	Ammonia nitrogen, total, (as N) 30 day	Ethylene glycol	Nonyl phenoxypoly ethanol	Propylene glycol, total	Tolytriazole
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report
Minimum	4700	76	0.284	0	0	14	53.58
Maximum	28000	14000	0.87	20	0	12400	59.88
Average	16400	5860	0.629	6.7	0	4140	56.7
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	NODI: H	76	0.284	20	0.05	16	NODI: B
11/30/2015	4700	3500	0.87	7	0.02	14	53.58
1/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2018	28000	14000	0.733	800	0.02	12400	59.88
10/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 001C – Dry Weather

Parameter	TSS	TSS	Fecal Coliform	Fecal Coliform	Oil & grease
	Monthly Ave	Daily Max	Daily Max	MOAV GEO	Daily Max
Units	mg/L	mg/L	CFU/100mL	CFU/100mL	mg/L
Effluent Limit	Report	100	Report	Report	15
Minimum	0	0	0	0	0
Maximum	220	220	64000	64000	0
Average	18.3	18.3	4640	4640	0
# Exceedances	N/A	1	N/A	N/A	0
4/30/2015	29	29	20	20	0
5/31/2015	13	13	30	30	0
6/30/2015	6	6	30	30	0
7/31/2015	5.8	5.8	1600	1600	0
8/31/2015	19	19	620	620	0
9/30/2015	10	10	4000	4000	0
10/31/2015	9.8	9.8	110	110	0
11/30/2015	10	10	29000	29000	0
12/31/2015	9	9	4500	4500	0
1/31/2016	15	15	20	20	0
2/29/2016	16	16	2	2	0
3/31/2016	11	11	140	140	0
4/30/2016	19	19	450	450	0
5/31/2016	5	5	2900	2900	0
6/30/2016	16	16	80000	80000	0
7/31/2016	24	24	1600	1600	0

8/31/2016	6.9	6.9	38000	38000	0
9/30/2016	5.3	5.3	64000	64000	0
10/31/2016	7.6	7.6	23000	23000	0
11/30/2016	9.2	9.2	52000	52000	0
12/31/2016	11	11	28000	28000	0
1/31/2017	12	12	620	620	0
2/28/2017	21	21	3600	3600	0
3/31/2017	16	16	10	10	0
4/30/2017	25	25	10	10	0
5/31/2017	11	11	120	120	0
6/30/2017	10	10	110	110	0
7/31/2017	17	17	3500	3500	0
8/31/2017	14	14	630	630	0
9/30/2017	14	14	140	140	0
10/31/2017	23	23	800	800	0
11/30/2017	20	20	10	10	0
12/31/2017	9.5	9.5	60	60	0
1/31/2018	27	27	10	10	0
2/28/2018	220	**220**	10	10	0
3/31/2018	24	24	10	10	0
4/30/2018	26	26	10	10	0
5/31/2018	19	19	10	10	0
6/30/2018	6.3	6.3	20	20	0
7/31/2018	7.7	7.7	70	70	0
8/31/2018	5.9	5.9	10	10	0
9/30/2018	21	21	4500	4500	0
10/31/2018	21	21	370	370	0
11/30/2018	16	16	10	10	0

12/31/2018	14	14	10	10	0
1/31/2019	14	14	0	0	0
2/28/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
3/31/2019	24	24	70	70	0
4/30/2019	19	19	0	0	0
5/31/2019	19	19	40	40	0
6/30/2019	8.1	8.1	40	40	0
7/31/2019	18	18	4000	4000	0
8/31/2019	19	19	130	130	0
9/30/2019	6	6	30	30	0
10/31/2019	14	14	400	400	0
11/30/2019	6.7	6.7	60	60	0
12/31/2019	24	24	40	40	0
1/31/2020	19	19	0	0	0
2/29/2020	16	16	0	0	0
3/31/2020	17	17	0	0	0
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	20	20	150	150	< 3.6
09/30/2020	9.1	9.1	110	110	< 4
10/31/2020	16	16	4800	4800	< 4
11/30/2020	< 5	< 5	40	40	< 4
12/31/2020	15	15	4400	4400	< 4

Outfall 001C – Dry Weather

Parameter	Surfactants (MBAS)	Surfactants (MBAS)	Benzene	Benzene	Enterococci	Enterococci
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	MOAV GEO	Daily Max
Units	mg/L	mg/L	ug/L	ug/L	CFU/100mL	CFU/100mL
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0.69	0.69	0	0	11000	11000
Average	0.137	0.137	0	0	870	870
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	0.1	0.1	1	1	110	110
5/31/2015	0.26	0.26	1	1	2500	2500
6/30/2015	0.11	0.11	1	1	900	900
7/31/2015	0.12	0.12	1	1	510	510
8/31/2015	0.17	0.17	1	1	4200	4200
9/30/2015	0.69	0.69	1	1	8700	8700
10/31/2015	0.15	0.15	1	1	4400	4400
11/30/2015	0.15	0.15	1	1	420	420
12/31/2015	0.15	0.15	1	1	2800	2800
1/31/2016	0.12	0.12	1	1	440	440
2/29/2016	0.08	0.08	1	1	1100	1100
3/31/2016	0.13	0.13	1	1	460	460
4/30/2016	0.09	0.09	1	1	420	420
5/31/2016	0.13	0.13	1	1	230	230

6/30/2016	0.35	0.35	1	1	1300	1300
7/31/2016	0.29	0.29	1	1	1200	1200
8/31/2016	0.21	0.21	1	1	2200	2200
9/30/2016	0.41	0.41	1	1	11000	11000
10/31/2016	0.12	0.12	1	1	1600	1600
11/30/2016	0.21	0.21	1	1	1100	1100
12/31/2016	0.23	0.23	1	1	480	480
1/31/2017	0.17	0.17	1	1	50	50
2/28/2017	0.12	0.12	1	1	50	50
3/31/2017	0.12	0.12	1	1	50	50
4/30/2017	0.1	0.1	1	1	20	20
5/31/2017	0.1	0.1	1	1	10	10
6/30/2017	0.12	0.12	1	1	60	60
7/31/2017	0.15	0.15	1	1	530	530
8/31/2017	0.15	0.15	1	1	80	80
9/30/2017	0.13	0.13	1	1	55	55
10/31/2017	0.15	0.15	1	1	50	50
11/30/2017	0.16	0.16	1	1	20	20
12/31/2017	0.12	0.12	1	1	10	10
1/31/2018	0.09	0.09	1	1	10	10
2/28/2018	0.09	0.09	1	1	10	10
3/31/2018	0.07	0.07	1	1	10	10
4/30/2018	0.05	0.05	10	10	10	10
5/31/2018	0.09	0.09	1	1	10	10
6/30/2018	0.08	0.08	1	1	10	10
7/31/2018	0.07	0.07	1	1	30	30
8/31/2018	0.07	0.07	2	2	30	30
9/30/2018	0.41	0.41	1	1	480	480

10/31/2018	0.1	0.1	1	1	1500	1500
11/30/2018	0.06	0.06	1	1	40	40
12/31/2018	0.05	0.05	1	1	10	10
1/31/2019	0.05	0.05	0	0	10	10
2/28/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
3/31/2019	0.07	0.07	0	0	490	490
4/30/2019	0.11	0.11	0	0	20	20
5/31/2019	0.15	0.15	0	0	60	60
6/30/2019	0.13	0.13	0	0	90	90
7/31/2019	0.05	0.05	0	0	700	700
8/31/2019	0.06	0.06	0	0	40	40
9/30/2019	0.05	0.05	0	0	60	60
10/31/2019	0.14	0.14	0	0	620	620
11/30/2019	0.05	0.05	0	0	30	30
12/31/2019	0.08	0.08	0	0	70	70
1/31/2020	0.06	0.06	0	0	0	0
2/29/2020	0.07	0.07	0	0	10	10
3/31/2020	0	0	0	0	0	0
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	0.08	0.08	< 1	< 1	100	100
09/30/2020	0.07	0.07	< 1	< 1	10	10
10/31/2020	0.26	0.26	< 1	< 1	650	650
11/30/2020	0.05	0.05	< 1	< 1	< 10	< 10
12/31/2020	0.07	0.07	< 1	< 1	670	670

Outfall 001D – Fuel Loading Rack and Fuel Farm

Parameter	TSS	TSS	pH	pH	Oil & grease	Benzene	Flow, total	Benzene	Flow, total
	Monthly Ave	Daily Max	Minimum	Maximum	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Daily Max
Units	mg/L	mg/L	SU	SU	mg/L	ug/L	gal/d	ug/L	gal/d
Effluent Limit	Report	100	Report	Report	15	Report	Report	Report	Report
Minimum	0	0	5.1	5.1	0	0	162	0	5000
Maximum	43	43	9.6	9.6	14	6.9	14034	9.4	407000
Average	3.0	5.3	6.89	7.05	1.6	0.50	2190	0.697	55700
Exceedances	N/A	0	N/A	N/A	0	N/A	N/A	N/A	N/A
4/30/2015	<5	<5	6.4	6.4	<4	<1	1000	<1	30000
5/31/2015	<5	<5	6	6.2	<4	1.9	162	1.9	5000
6/30/2015	6.55	8.1	6.2	6.4	5.1	4.45	6518	7	195550
7/31/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
8/31/2015	8.4	10	6.4	6.6	<4	2.85	936	4.4	16000
9/30/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2015	11	15	6.1	6.3	<4	<1	1200	<1	27000
12/31/2015	<10	<10	6.6	6.6	<4	<1	1226	<1	38000
1/31/2016	<8	11	6	6.7	14	<14.5	1350	<29	21000
2/29/2016	<10	<10	7.8	7.8	<4	<1	14034	<1	407000
3/31/2016	<5	<5	7.4	7.4	<4	<1	1903	<1	59000
4/30/2016	<5	<5	7.1	7.1	<4	<1	2016	<1	56000
5/31/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
6/30/2016	<5	<5	6.4	6.4	<4	<1	200	<1	6000

7/31/2016	5.6	5.6	6.5	6.5	<4	<1	193.5	<1	6000
8/31/2016	<5	<5	5.1	5.1	<4	<1	323	<1	10000
9/30/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2016	5.8	6.3	6.4	6.5	<4	6.9	1242	9.4	22500
11/30/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2017	<8.5	12	7	7.9	<4	<1	3577	<1	63881
2/28/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2017	<5	<5	7.2	7.2	<4	<1	1548	<1	48000
4/30/2017	<5.1	<5.2	7.3	8.3	<4	<1	5767	<1	97000
5/31/2017	1.16	36	7.2	7.2	4.9	<1	774	<1	24000
6/30/2017	<5	<5	7.2	7.2	<4	<1	967	<1	29000
7/31/2017	<5	<5	7.1	7.1	<4	<1	2839	<1	88000
8/31/2017	<5	<5	7	7	<4	<1	935	<1	29000
9/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2018	43	43	6.5	6.5	12	<1	1355	<1	42000
2/28/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2018	<5	<5	7.3	7.3	<4	<1	1335	<1	42000
4/30/2018	5.25	5.5	6.6	7.5	<4	<1	2773	<	43700
5/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
6/30/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: D	NODI: C	NODI: D
7/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
8/31/2018	<1	<12	7.1	7.1	<4	<1	1387	<1	43000
9/30/2018	<5	<5	6.9	6.9	<4	<1	1733	<1	33000
10/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C

11/30/2018	<1.136	14	6.8	7.6	<4	<1	4934	<1	68000
12/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2019	6.7	6.7	6.6	6.6	0	<1	1194	<1	37000
2/28/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2019	0	0	6.9	6.9	0	<1	1484	<1	46000
4/30/2019	0	0	8.3	8.3	0	<1	2350	<1	70500
5/31/2019	7.5	7.5	9.6	9.6	0	<1	1323	<1	41000
6/30/2019	0	0	7.3	7.3	0	1	2650	1	47000
7/31/2019	0	0	7.3	7.3	0	<1	1839	<1	57000
8/31/2019	0	0	6.8	6.8	0	<1	1484	<1	46000
9/30/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
2/29/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
05/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
06/30/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
07/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
08/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
09/30/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C

Outfall 001E – Fuel Hydrant and Pit Area

Parameter	TSS	TSS	pH	pH	Oil & grease	Benzene	Flow, total	Benzene	Flow, total
	Monthly Ave	Daily Max	Minimum	Maximum	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Daily Max
Units	mg/L	mg/L	SU	SU	mg/L	ug/L	gal/d	ug/L	gal/d
Effluent Limit	Report	Report	Report	Report	15	Report	Report	Report	Report
Minimum	8.2	8.2	5	5	0	0	84	0	2600
Maximum	43	43	6.7	6.7	6.5	25	1371	25	16000
Average	19.3	19.3	6	6	0.93	9.2	653	9.2	12100
Exceedances	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A
4/30/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
5/31/2015	19	19	5.9	6.1	<4	11	420	11	13000
6/30/2015	22	22	6.7	6.7	<4	25	817	25	12400
7/31/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: E	NODI: C	NODI: E
8/31/2015	7.7	7.7	6.2	6.2	<4	3.6	936	3.6	16000
9/30/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2015	19	19	6	6	<4	25	1000	25	15000
12/31/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
2/29/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2016	8.2	8.2	5.6	5.6	<4	<1	200	<1	4500
5/31/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
6/30/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C

7/31/2016	43	43	5	5	<4	<1	452	<1	14000
8/31/2016	16	16	5.4	5.4	6.5	<10	84	<10	2600
9/30/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
2/28/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
5/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
6/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
8/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
9/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: B	NODI: C	NODI: B
1/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
2/28/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
5/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
6/30/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
8/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
9/30/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C

11/30/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
2/28/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
5/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
6/30/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
8/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
9/30/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2019	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: B	NODI: C	NODI: B
1/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
2/29/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
05/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
06/30/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
07/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
08/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
09/30/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
11/30/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2020	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C

Outfall 002A – Wet Weather

Parameter	TSS	TSS	pH	pH	Fecal Coliform	Fecal Coliform	Oil & grease
	Monthly Ave	Daily Max	Minimum	Maximum	Daily Max	MOAV GEO	Daily Max
Units	mg/L	mg/L	SU	SU	CFU/100mL	CFU/100mL	mg/L
Effluent Limit	Report	100	6	8.5	Report	Report	15
Minimum	5	5	6.11	6.11	20	20	0
Maximum	590	590	8.5	8.5	53000	53000	19
Average	39.7	39.7	7.29	7.29	6700	6700	1.08
Exceedances	N/A	2	0	0	N/A	N/A	1
4/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
5/31/2015	11	11	6.4	6.4	260	260	<4
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
7/31/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
8/31/2015	17	17	7.76	7.76	3400	3400	<4
9/30/2015	120	120	7.42	7.42	2500	2500	8.4
10/31/2015	20	20	8.48	8.48	450	450	4.4
11/30/2015	7.4	7.4	8.48	8.48	350	350	<4
12/31/2015	30	30	6.25	6.25	3500	3500	<4
1/31/2016	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
2/29/2016	5	5	6.71	6.71	400	400	<4
3/31/2016	15	15	6.52	6.52	100	100	<4
4/30/2016	35	35	6.55	6.55	160	160	<4
5/31/2016	39	39	7.48	7.48	2800	2800	<4
6/30/2016	16	16	7.33	7.33	16000	16000	<4

7/31/2016	16	16	7.36	7.36	48000	48000	<4
8/31/2016	67	67	7.35	7.35	25000	25000	<4
9/30/2016	12	12	7.08	7.08	32000	32000	<4
10/31/2016	11	11	6.96	6.96	53000	53000	<4
11/30/2016	38	38	7.35	7.35	3900	3900	<4
12/31/2016	25	25	7.45	7.45	2700	2700	<4
1/31/2017	18	18	8.03	8.03	2500	2500	<4
2/28/2017	22	22	6.79	6.79	30	30	<4
3/31/2017	27	27	7.62	7.62	280	280	5.1
4/30/2017	14	14	7.28	7.28	350	350	<4
5/31/2017	12	12	8.48	8.48	410	410	<4
6/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	16	16	7.93	7.93	12000	12000	<4
8/31/2017	13	13	7.68	7.68	80000	80000	<4
9/30/2017	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
10/31/2017	29	29	8.5	8.5	41000	41000	<4
11/30/2017	17	17	7.13	7.13	1700	1700	<4
12/31/2017	12	12	7.45	7.45	5800	5800	<4
1/31/2018	100	100	8.05	8.05	1300	1300	<4
2/28/2018	27	27	6.71	6.71	NODI: E	NODI: E	<4
3/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	30	30	7.07	7.07	40	40	<4
5/31/2018	NODI: 8	NODI: E	NODI: 8	NODI: E	NODI: E	NODI: 8	NODI: E
6/30/2018	43	43	6.96	6.96	7100	7100	5.1
7/31/2018	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
8/31/2018	15	15	8.05	8.05	80000	80000	<4
9/30/2018	10	10	7.09	7.09	3100	3100	<4
10/31/2018	81	81	7.3	7.3	NODI: 8	NODI: 8	<4

11/30/2018	14	14	6.69	6.69	180	180	<4
12/31/2018	46	46	8.21	8.21	1400	1400	5.9
1/31/2019	36	36	7.39	7.39	110	110	4
2/28/2019	30	30	6.84	6.84	100	100	0
3/31/2019	**590**	**590**	6.44	6.44	440	440	**19**
4/30/2019	14	14	6.11	6.11	610	610	0
5/31/2019	10	10	6.48	6.48	20	20	0
6/30/2019	20	20	6.75	6.75	560	560	0
7/31/2019	16	16	7.11	7.11	5200	5200	0
8/31/2019	9.7	9.7	7.14	7.14	7400	7400	0
9/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
10/31/2019	7.5	7.5	7.54	7.54	730	730	0
11/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	74	74	7.4	7.4	550	550	4.1
1/31/2020	40	40	7.76	7.76	NODI: V	NODI: V	0
2/29/2020	30	30	6.77	6.77	500	500	0
3/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
09/30/2020	19	19	7.61	7.61	2100	2100	< 4
10/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
11/30/2020	18	18	7.2	7.2	400	400	< 4
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 002A – Wet Weather

Parameter	Flow rate	Flow rate	Surfactants (MBAS)	Surfactants (MBAS)	Benzene	Benzene	Enterococci	Enterococci
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	MOAV GEO	Daily Max
Units	MGD	MGD	mg/L	mg/L	ug/L	ug/L	CFU/100mL	CFU/100mL
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0.19	1.4	0	0	0	0	0	0
Maximum	23.049	31	1.1	1.1	4.7	4.7	25000	25000
Average	1.7	12.8	0.241	0.241	0.094	0.094	3950	3950
Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	1.84	8.58	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
5/31/2015	0.99	5.4	0.13	0.13	<1	<1	10	10
6/30/2015	2.19	20.26	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
7/31/2015	0.84	15.2	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
8/31/2015	0.79	6.46	0.22	0.22	<1	<1	5900	5900
9/30/2015	1.6	31	0.32	0.32	<1	<1	19000	19000
10/31/2015	0.76	12.5	0.09	0.09	<1	<1	5000	5000
11/30/2015	0.9	10.73	0.24	0.24	<1	<1	900	900
12/31/2015	1.75	12.57	0.18	0.18	<1	<1	4300	4300
1/31/2016	1.51	17.34	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
2/29/2016	1.9	12.4	0.15	0.15	<1	<1	20	20
3/31/2016	1.1	15.1	0.2	0.2	<1	<1	200	100
4/30/2016	1.1	10.3	0.17	0.17	<1	<1	80	80
5/31/2016	0.9	12.85	0.24	0.24	<1	<1	1800	1800
6/30/2016	0.46	6.9	0.79	0.79	<1	<1	2100	2100

7/31/2016	0.19	1.4	1.1	1.1	<1	<1	3800	3800
8/31/2016	0.58	10.09	0.14	0.14	<1	<1	6300	6300
9/30/2016	0.338	2.876	1.07	1.07	<1	<1	5600	5600
10/31/2016	1.99	22.05	0.33	0.33	<1	<1	420	420
11/30/2016	0.72	8.17	0.4	0.4	<1	<1	750	750
12/31/2016	1.327	11.192	0.21	0.21	<1	<1	400	400
1/31/2017	1.516	14.433	0.19	0.19	<1	<1	300	300
2/28/2017	1.326	7.314	0.29	0.29	<1	<1	10	10
3/31/2017	1.329	9.947	0.31	0.31	<1	<1	430	430
4/30/2017	2.496	25.503	0.33	0.33	<1	<1	200	200
5/31/2017	1.122	9.481	0.1	0.1	<1	<1	410	410
6/30/2017	23.049	1.728	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	1.446	15.346	0.39	0.39	<1	<1	1900	1900
8/31/2017	0.5	8.441	0.39	0.39	<1	<1	1700	1700
9/30/2017	1.212	16.385	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
10/31/2017	1.611	20.126	0.15	0.15	<1	<1	25000	25000
11/30/2017	0.632	9.936	0.22	0.22	<1	<1	1700	1700
12/31/2017	0.823	5.87	0.1	0.1	<1	<1	7300	7300
1/31/2018	2.035	23.085	0.34	0.34	4.7	4.7	390	390
2/28/2018	1.313	6.246	0.15	0.15	<2.5	<2.5	NODI: E	NODI: E
3/31/2018	1.937	21.908	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	1.653	16.566	0.07	0.07	<1	<1	40	40
5/31/2018	0.661	7.636	NODI: 8	NODI: E	NODI: 8	NODI: E	NODI: 8	NODI: E
6/30/2018	1.057	13.23	0.29	0.29	<1	<1	3500	3500
7/31/2018	1.398	24.939	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
8/31/2018	1.582	16.078	0.13	0.13	<1	<1	4300	4300
9/30/2018	1.919	12.981	0.06	0.06	<1	<1	80000	80000

10/31/2018	1.251	12.231	0.1	0.1	<1	<1	NODI: 8	NODI: 8
11/30/2018	3.797	19.345	0.05	0.05	<1	<1	1000	1000
12/31/2018	0.957	7.729	0.34	0.34	<1	<1	2100	2100
1/31/2019	1.593	13.616	0.09	0.09	0	0	2800	2800
2/28/2019	0.965	7.438	0.09	0.09	0	0	1400	1400
3/31/2019	1.069	10.677	0.68	0.68	0	0	440	440
4/30/2019	2.45	21.949	0	0	0	0	1100	1100
5/31/2019	0.992	6.131	0.07	0.07	0	0	40	40
6/30/2019	1.73	13.808	0.14	0.14	0	0	460	460
7/31/2019	2.204	16.324	0.13	0.13	0	0	20000	20000
8/31/2019	1.427	17.385	0.07	0.07	0	0	21000	21000
9/30/2019	0.776	11.379	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
10/31/2019	1.513	14.612	0.12	0.12	0	0	18000	18000
11/30/2019	1.235	16.125	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	2.334	16.512	0.08	0.08	0	0	1500	1500
1/31/2020	0.563	7.441	0.12	0.12	0	0	NODI: V	NODI: V
2/29/2020	1.296	8.808	0.14	0.14	0	0	230	230
3/31/2020	1.368	13.677	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
4/30/2020	1.538	8.078	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	0.809	8.128	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	0.909	12.955	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	0.552	5.599	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	0.707	14.423	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
09/30/2020	0.302	4.274	0.21	0.21	< 1	< 1	660	660
10/31/2020	1.829	19.819	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
11/30/2020	1.41	21.788	0.05	0.05	< 1	< 1	710	710
12/31/2020	2.485	19.943	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 002A – Wet Weather

Parameter	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Indeno(1,2,3 -cd)pyrene	Naphthalene	PAH, Total Method 610
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	TOTAL
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0	0
Maximum	0	20	37	0	25	0	21	5.5	103
Average	0	1.18	2.18	0	1.47	0	1.24	0.324	13.6
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
9/30/2015	0	0	0	0	0	0	0	0	NODI: B
12/31/2015	0	0	0	0	0	0	0	0	NODI: B
3/31/2016	0	0	0	0	0	0	0	0	NODI: B
6/30/2016	0	0	0	0	0	0	0	0	NODI: B
9/30/2016	0	0	0	0	0	0	0	0	NODI: B
12/31/2016	0	0	0	0	0	0	0	0	NODI: B
3/31/2017	0	0	0	0	0	0	0	0	NODI: B
6/30/2017	0	0	0	0	0	0	0	0	NODI: B
9/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2017	0	0	0	0	0	0	0	0	NODI: B
3/31/2018	0	0	0	0	0	0	0	5.5	5.5
6/30/2018	0	0	0	0	0	0	0	0	0
9/30/2018	0	0	0	0	0	0	0	0	0

12/31/2018	0	0	0	0	0	0	0	0	0
3/31/2019	0	20	37	0	25	0	21	0	103
6/30/2019	0	0	0	0	0	0	0	0	0
9/30/2019	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V
12/31/2019	0	0	0	0	0	0	0	0	0
3/31/2020	0	0	0	0	0	0	0	0	0
6/30/2020	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z	NODI:Z
9/30/2020	<2	<2	<2	<2	<2	<2	<2	<2	<2
12/31/2020	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V	NODI:V

Outfall 002A - Whole Effluent Toxicity Testing

Parameter	LC50 Acute Menidia	Noel Static 1Hr Fert. Chronic Arbacia	Noel Static 7Day Chronic Menidia
	Monthly Ave Min	Monthly Ave Min	Monthly Ave Min
Units	%	%	%
Effluent Limit	Report	Report	Report
4/30/2015	NODI: 9	NODI: 9	NODI: 9
11/30/2015	NODI: E	NODI: E	NODI: E
1/31/2017	NODI: C	NODI: C	NODI: C
3/31/2018	NODI: 9	NODI: 9	NODI: 9
10/31/2018	NODI: 9	NODI: 9	NODI: 9
12/31/2019	NODI: V	NODI: V	NODI: V

Outfall 002B - Deicing

Parameter	CBOD5	BOD5	Ammonia nitrogen, total, (as N) 30 day	Ethylene glycol	Nonyl phenoxypoly ethanol	Propylene glycol, total	Tolytriazole
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report
Minimum	8700	150	0.362	0	0	110	5.01
Maximum	21000	13000	0.921	18	0.2	11400	34.21
Average	14900	6250	0.724	6	0.067	5300	21.1
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	NODI: H	150	0.362	18	0.2	110	5.01
11/30/2015	8700	5600	0.889	0	0	4400	23.97
1/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2018	21000	13000	0.921	0	0	11400	34.21
10/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 002C – Dry Weather

Parameter	TSS	TSS	Fecal Coliform	Fecal Coliform	Oil & grease	Benzene	Benzene	Enterococci	Surfactants (MBAS)	Enterococci
	Monthly Ave	Daily Max	Daily Max	MOAV GEO	Daily Max	Monthly Ave	Daily Max	Daily Max	Daily Max	MOAV GEO
Units	mg/L	mg/L	CFU/100mL	CFU/100mL	mg/L	ug/L	ug/L	CFU/100mL	mg/L	CFU/100mL
Effluent Limit	Report	100	Report	Report	5	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0	0	0
Maximum	25	25	49000	49000	4.9	0	0	80000	0.53	80000
Average	13	13	6200	6200	0.0831	0	0	3170	0.134	3170
Exceedances	N/A	0	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A
4/30/2015	22	22	2800	2800	0	0	0	10	0.08	10
5/31/2015	9.2	9.2	780	780	0	0	0	10	0.09	10
6/30/2015	14	14	1500	1500	0	0	0	10	0.09	10
7/31/2015	23	23	17000	17000	0	0	0	90	0.08	90
8/31/2015	22	22	2300	2300	0	0	0	10	0.13	10
9/30/2015	12	12	13000	13000	0	0	0	80000	0.37	80000
10/31/2015	5.9	5.9	5100	5100	0	0	0	330	0.16	330
11/30/2015	9.4	9.4	22000	22000	0	0	0	520	0.18	520
12/31/2015	7	7	80000	80000	0	0	0	2400	0.2	2400
1/31/2016	18	18	140	140	0	0	0	20	0.23	20
2/29/2016	5.6	5.6	3	3	0	0	0	2	0.05	2
3/31/2016	5.3	5.3	180	180	0	0	0	10	0.13	10
4/30/2016	18	18	130	130	0	0	0	10	0.06	10
5/31/2016	11	11	910	910	0	0	0	10	0.52	10
6/30/2016	7.2	7.2	41000	41000	0	0	0	46000	0.18	46000

7/31/2016	8.1	8.1	16000	16000	0	0	0	180	0.29	180
8/31/2016	13	13	49000	49000	0	0	0	420	0.21	420
9/30/2016	14	14	330000	33000	0	0	0	320	0.53	320
10/31/2016	11	11	400	400	0	0	0	20	0.1	20
11/30/2016	7.4	7.4	250	250	0	0	0	50	0.09	50
12/31/2016	12	12	150	150	0	0	0	80	0.33	80
1/31/2017	13	13	40	40	0	0	0	10	0.13	10
2/28/2017	16	16	300	300	0	0	0	90	0.11	90
3/31/2017	5	5	650	650	0	0	0	55	0.15	55
4/30/2017	17	17	210	210	0	0	0	200	0.1	200
5/31/2017	17	17	770	770	0	0	0	180	0.09	180
6/30/2017	13	13	4600	4600	0	0	0	1400	0.14	1400
7/31/2017	13	13	16000	16000	0	0	0	900	0.12	900
8/31/2017	13	13	80000	80000	0	0	0	1500	0.14	1500
9/30/2017	11	11	3700	3700	0	0	0	70	0.22	70
10/31/2017	8.7	8.7	3400	3400	0	0	0	900	0.11	900
11/30/2017	13	13	20000	20000	0	0	0	310	0.15	310
12/31/2017	11	11	80000	80000	0	0	0	30000	0.16	30000
1/31/2018	22	22	820	820	0	0	0	70	0.32	70
2/28/2018	14	14	430	430	0	0	0	190	0.09	190
3/31/2018	25	25	10	10	0	0	0	50	0.05	50
4/30/2018	11	11	10	10	0	0	0	30	0.05	30
5/31/2018	10	10	740	740	0	0	0	60	0.19	60
6/30/2018	16	16	1600	1600	0	0	0	150	0.08	150
7/31/2018	7.3	7.3	2500	2500	0	0	0	3500	0.1	3500
8/31/2018	13	13	6000	6000	0	0	0	710	0.05	710
9/30/2018	11	11	21000	21000	0	0	0	6700	0.28	6700
10/31/2018	12	12	18000	18000	0	0	0	5600	0.05	5600

11/30/2018	18	18	260	260	0	0	0	100	0.05	100
12/31/2018	15	15	2900	2900	4.9	0	0	1400	0.06	1400
1/31/2019	9	9	90	90	0	0	0	0	0.05	0
2/28/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
3/31/2019	17	17	70	70	0	0	0	100	0.06	100
4/30/2019	13	13	820	820	0	0	0	50	0.07	50
5/31/2019	17	17	40	40	0	0	0	40	0.08	40
6/30/2019	16	16	780	780	0	0	0	490	0.06	490
7/31/2019	16	16	9000	9000	0	0	0	630	0.05	630
8/31/2019	8.4	8.4	40	40	0	0	0	380	0.07	380
9/30/2019	7.5	7.5	32000	32000	0	0	0	480	0.06	480
10/31/2019	11	11	110	110	0	0	0	260	0.09	260
11/30/2019	8.1	8.1	270	270	0	0	0	60	0.07	60
12/31/2019	15	15	0	0	0	0	0	0	0.07	0
1/31/2020	15	15	100	100	0	0	0	10	0.06	10
2/29/2020	15	15	50	50	0	0	0	10	0.1	10
3/31/2020	22	22	45	45	0	0	0	10	0	10
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	14	14	7500	7500	< 4	< 1	< 1	150	0.06	150
09/30/2020	8.2	8.2	50	50	< 4	< 1	< 1	50	0.08	50
10/31/2020	8.4	8.4	260	260	< 4	< 1	< 1	150	< .15	150
11/30/2020	5.6	5.6	180	180	< 4	< 1	< 1	< 10	0.08	< 10
12/31/2020	8.9	8.9	60	60	< 4	< 1	< 1	20	0.05	20

Outfall 003A– Wet Weather

Parameter	TSS	TSS	pH	pH	Fecal Coliform	Fecal Coliform	Oil & grease
	Monthly Ave	Daily Max	Minimum	Maximum	Daily Max	MOAV GEO	Daily Max
Units	mg/L	mg/L	SU	SU	CFU/100mL	CFU/100mL	mg/L
Effluent Limit	Report	Report	6	8.5	Report	Report	Report
Minimum	0	0	5.15	6.35	0	1	0
Maximum	227	400	7.99	8.81	63000	1182	160
Average	33.2	66.5	6.84	7.51	4080	224	5.35
No. of Exceedances	N/A	N/A	3	2	N/A	N/A	N/A
4/30/2015	NODI: F	NODI: F	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
5/31/2015	112	280	7.1	7.57	400	116	7.4
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
7/31/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
8/31/2015	18	30	6.8	7.21	3000	175	0
9/30/2015	41	100	**5.63**	6.82	3900	112	0
10/31/2015	9.2	22	7.99	**8.81**	9000	1120	0
11/30/2015	15	30	6.22	6.59	7900	233	0
12/31/2015	17	22	7.2	**8.58**	63000	164	9
1/31/2016	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
2/29/2016	31	48	6.61	6.9	70	8.9	8
3/31/2016	2.8	8.3	6.11	6.56	50	3.7	0
4/30/2016	12	22	7	7.62	610	26	0
5/31/2016	10	25	7.7	7.94	680	237	4.7
6/30/2016	15	40	6.92	8.01	13000	257	0
7/31/2016	35	74	7.62	8.03	1100	416	0
8/31/2016	0	5	6.7	7.81	15000	106	0

9/30/2016	45.7	110	7.31	8.11	5100	1182	5.2
10/31/2016	18	55	6.92	7.87	500	232	0
11/30/2016	44	110	6.81	7.75	40	3.4	0
12/31/2016	18	31	6.37	6.83	230	29	4.6
1/31/2017	33	72	7.82	8.05	130	5.1	0
2/28/2017	61	130	7.05	7.51	160	5.4	8.7
3/31/2017	159	230	**5.15**	7.44	290	14	8.8
4/30/2017	10	21	6.7	7.46	350	15	0
5/31/2017	58	84	7.81	8.46	160	23	0
6/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	85	240	7.22	8.06	250	79	0
8/31/2017	22	59	7.27	8.28	6300	1030	0
9/30/2017	3.7	11	6.9	7.28	1100	205	0
10/31/2017	4	12	7.76	8.04	6400	801	0
11/30/2017	20	28	6.16	7	160	23	0
12/31/2017	5.8	12	7.66	7.8	120	13	0
1/31/2018	227	300	6.75	7.69	1900	75	19
2/28/2018	44	54	6.12	6.35	NODI: E	NODI: E	0
3/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	15	29	6.25	6.92	90	4.5	0
5/31/2018	NODI: 8	NODI: E	NODI: 8	NODI: E	NODI: E	NODI: 8	NODI: E
6/30/2018	16	31	6.34	7.01	5300	350	0
7/31/2018	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
8/31/2018	3.8	6	7.82	8.36	80000	934	0
9/30/2018	2.4	7.3	6.97	7.21	11000	177	0
10/31/2018	14	22	6.61	7.1	NODI: 8	NODI: 8	0
11/30/2018	5	5	6.63	6.82	10	1	0
12/31/2018	14	36	6.57	7	510	8	0

1/31/2019	174	400	7.83	8.06	50	7.9	160
2/28/2019	21	43	6.72	6.78	1900	38	0
3/31/2019	18	36	6.3	6.62	270	30	0
4/30/2019	12	19	6.24	6.46	330	32	0
5/31/2019	16	25	6.9	7.22	1200	155	4
6/30/2019	16	35	6.78	8.04	5800	143	0
7/31/2019	27	68	6.35	6.99	3000	422	4
8/31/2019	5.6	6.8	6.59	7.18	7900	584	4
9/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
10/31/2019	9.3	18	7.02	7.95	1100	210	0
11/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	47.4	120	6.98	8.04	> 80000	482	6.5
1/31/2020	14.7	34	7.14	7.81	NODI: V	NODI: V	4
2/29/2020	25.7	61	**5.95**	7.89	180	26	4.4
3/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
09/30/2020	5	5.1	666	7.7	21000	3300	6.5
10/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
11/30/2020	24.1	45	7.17	7.33	620	145	28
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 003A – Wet Weather

Parameter	Flow rate	Flow rate	Benzene	Benzene	Surfactants (MBAS)	Surfactants (MBAS)	Enterococci	Enterococci
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	MOAV GEO	Daily Max
Units	**MGD**	**MGD**	**ug/L**	**ug/L**	**mg/L**	**mg/L**	**CFU/100mL**	**CFU/100mL**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0.049**	**0.152**	**0**	**1**	**0**	**0**	**6.6**	**150**
Maximum	**1.838**	**6.331**	**1**	**4**	**1.62**	**2.69**	**4286**	**170000**
Average	**0.324**	**2.58**	**0.0204**	**0.286**	**0.176**	**0.263**	**837**	**7550**
Exceedances	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
4/30/2015	0.27	1.63	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
5/31/2015	0.1	0.77	0	0	1.62	2.69	671	2500
6/30/2015	0.38	4.06	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
7/31/2015	0.15	2.72	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
8/31/2015	0.15	1.19	0	0	0.17	0.22	1771	14000
9/30/2015	0.31	6.24	0	0	0.057	0.07	1017	13000
10/31/2015	0.15	2.86	0	0	0.067	0.09	1795	10000
11/30/2015	0.18	2.19	0	0	0.103	0.14	766	5100
12/31/2015	0.28	2.74	0	0	0.087	0.11	82	6100
1/31/2016	0.3	3.57	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
2/29/2016	0.3	2.6	NODI: E	0	0.407	0.7	36	160
3/31/2016	0.2	2.1	0	0	0.147	0.16	6.6	290
4/30/2016	0.2	1.4	0	0	0.12	0.19	34	800
5/31/2016	0.2	2.6	0	0	0.15	0.23	1275	3800
6/30/2016	0.094	1.9	0	0	0.57	0.88	950	2100
7/31/2016	0.049	0.38	0	0	0.523	0.75	1376	2600

8/31/2016	0.14	2.22	0	0	0.097	0.11	708	3700
9/30/2016	0.073	0.657	0	0	0.44	0.75	4078	5300
10/31/2016	0.42	4.26	0	0	0.187	0.27	389	3500
11/30/2016	0.16	1.39	0	0	0.26	0.31	213	460
12/31/2016	0.261	2.847	0	0	0.133	0.21	280	530
1/31/2017	0.314	2.223	0	0	0.203	0.26	62	2400
2/28/2017	1.693	1.693	0	0	0.13	0.17	39	150
3/31/2017	0.178	1.909	0	0	0.24	0.33	519	2800
4/30/2017	0.505	4.66	0	0	0.133	0.18	92	640
5/31/2017	0.217	2.101	0	0	0.147	0.19	100	260
6/30/2017	0.356	4.801	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	0.315	3.081	0	0	0.463	0.66	2070	2900
8/31/2017	0.106	0.926	0	0	0.197	0.27	363	2400
9/30/2017	0.206	2.216	0	0	0.12	0.14	726	170000
10/31/2017	0.352	4.339	0	0	0.087	0.11	3389	18000
11/30/2017	1.838	0.152	0	0	0.06	0.12	555	1900
12/31/2017	0.149	1.301	0	0	0.11	0.16	320	780
1/31/2018	0.354	4.318	0	0	0.153	0.29	172	2300
2/28/2018	0.094	0.432	0	0	0.11	0.21	NODI: E	NODI: E
3/31/2018	0.325	3.708	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	0.33	3.327	0	0	0.063	0.09	110	210
5/31/2018	0.135	1.707	NODI: E	NODI: 8	NODI: 8	NODI: E	NODI: 8	NODI: E
6/30/2018	0.216	2.167	0	0	0.063	0.13	1110	4300
7/31/2018	0.364	6.331	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
8/31/2018	0.335	3.214	0	0	0.077	0.09	1384	5300
9/30/2018	0.416	2.751	0	0	0.037	0.11	1301	8000
10/31/2018	0.275	2.548	0	0	0.08	0.13	NODI: 8	NODI: 8
11/30/2018	0.812	3.944	0	0	0.05	0.05	450	1900

12/31/2018	0.196	1.398	0	0	0.083	0.14	393	1300
1/31/2019	0.295	2.501	0	0	0.067	0.1	116	370
2/28/2019	0.188	1.477	0	0	0.033	0.05	136	2100
3/31/2019	0.18	2.404	0	0	0.097	0.12	182	1100
4/30/2019	.476	3.173	0	1	0.05	0.05	256	2900
5/31/2019	0.22	1.686	0	1	0.17	0.2	555	1100
6/30/2019	0.394	3.161	0	0	0.113	0.19	351	1000
7/31/2019	0.479	3.617	1	1	0.113	0.17	4286	6700
8/31/2019	0.288	2.463	0	1	0.067	0.08	2209	22000
9/30/2019	0.17	2.204	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
10/31/2019	0.322	3.171	0	1	0.063	0.08	826	6400
11/30/2019	0.256	3.423	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	0.456	3.528	0	1	0.073	0.11	962	3800
1/31/2020	0.108	1.665	0	4	0.07	0.07	NODI: V	NODI: V
2/29/2020	0.28	1.815	0	4	0.093	0.13	28	230
3/31/2020	0.275	4.094	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
4/30/2020	0.327	1.296	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	0.18	1.554	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	0.187	2.483	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	0.139	1.057	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	0.155	3.123	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
09/30/2020	0.072	0.317	< 1	1	0.063	0.08	2499	12000
10/31/2020	0.373	4.438	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
11/30/2020	0.307	3.228	< 1	1	0.08	0.14	152	2200
12/31/2020	0.458	3.38	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 003A – Wet Weather

Parameter	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Indeno(1,2,3-cd)pyrene	Naphthalene	PAH, Total, Method 610
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	TOTAL
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0	0
Maximum	3.5	2.7	3.9	3	3.1	2	0	2	14.29
Average	0.194	0.15	0.217	0.278	0.294	0.111	0	0.111	2.3
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/30/2015	NODI:E	NODI:E	NODI:E	NODI:E	NODI:E	NODI:E	NODI:E	NODI:E	NODI:E
9/30/2015	0	0	0	0	0	0	0	0	NODI:B
12/31/2015	0	0	0	0	0	0	0	0	1.3
3/31/2016	0	0	0	0	0	0	0	0	NODI: B
6/30/2016	0	0	0	0	0	0	0	0	NODI: B
9/30/2016	0	0	0	0	0	0	0	0	NODI: B
12/31/2016	0	0	0	0	0	0	0	0	NODI: B
3/31/2017	0	0	0	0	0	0	0	0	NODI: B
6/30/2017	0	0	0	0	0	0	0	0	NODI: B
9/30/2017	0	0	0	0	0	0	0	0	NODI: F
12/31/2017	0	0	0	0	0	0	0	0	NODI: B
3/31/2018	0	0	0	3	2.2	0	0	0	5.2
6/30/2018	0	0	0	0	0	0	0	0	0
9/30/2018	0	0	0	0	0	0	0	0	0

12/31/2018	0	0	0	0	0	0	0	0	0
3/31/2019	0	0	0	0	0	0	0	0	0
6/30/2019	3.5	2.7	3.9	2	3.1	2	0	2	5.7
9/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	0	0	0	0	0	0	0	0	0
3/31/2020	0	0	0	0	0	0	0	0	0
6/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
9/30/2020	2.43	3.12	3.83	<2	2.85	<2	2.06	<2	14.29
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 003A

Parameter	**LC50 Acute Menidia**	**Noel Static 1Hr Fert. Chronic Arbacia**	**Noel Static 7Day Chronic Menidia**
	Monthly Ave Min	**Monthly Ave Min**	**Monthly Ave Min**
Units	**%**	**% fertil**	**%**
Effluent Limit	**Report**	**Report**	**Report**
4/30/2016	NODI: C	NODI: C	NODI: C
11/30/2016	NODI: C	NODI: C	NODI: C
1/31/2018	NODI: 9	NODI: 9	NODI: 9
3/31/19	NODI: 9	NODI: 9	NODI: 9
10/31/19	NODI: 9	NODI: 9	NODI: 9

Outfall 003B - Deicing

Parameter	CBOD5	BOD5	Ammonia nitrogen, total, (as N) 30 day	Ethylene glycol	Nonyl phenoxypoly ethanol	Propylene glycol, total	Tolytriazole
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report
Minimum	770	150	1.21	0	0	6.2	0.057
Maximum	2700	580	1.81	0	1.38	430	129.63
Average	1590	317	1.5	0	0.664	190	48.7
Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2016	2700	580	1.47	35	0.612	430	0.057
11/30/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2018	1300	220	1.21	9.66	0.02	134	16.44
3/31/2019	770	150	1.81	0	1.38	6.2	129.63
10/31/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 003C – Dry Weather

Parameter	TSS	TSS	Fecal Coliform	Fecal Coliform	Oil & grease	Benzene	Benzene	Surfactants (MBAS)	Surfactants (MBAS)	Enterococci	Enterococci
	Monthly Ave	Daily Max	Daily Max	MOAV GEO	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	MOAV GEO	Daily Max
Units	mg/L	mg/L	CFU/100mL	CFU/100mL	mg/L	ug/L	ug/L	mg/L	mg/L	CFU/100mL	CFU/100mL
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	3.2	8.3	0	0	0	0	0	0.06	0.07	1	0
Maximum	808	2400	35000	632	29	1	0	0.45	0.85	592	22000
Average	45.9	111	1580	35.6	2.15	0.203	0	0.151	0.224	84.2	886
Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	46	91	10	1	6.7	0	0	0.127	0.18	2.2	10
5/31/2015	11.8	17	10	1	0	0	0	0.36	0.85	14.7	80
6/30/2015	60	150	5400	38	0	0	0	0.157	0.24	13.8	260
7/31/2015	59	73	21000	59	0	0	0	0.127	0.18	17	4500
8/31/2015	16	33	10	1	0	0	0	0.193	0.42	7.9	50
9/30/2015	11	20	40	7.4	0	0	0	0.417	0.2	3.1	30
10/31/2015	41	92	55	35.3	0	0	0	0.21	0.24	157	520
11/30/2015	33	72	80	8.9	0	0	0	0.157	0.17	47	170
12/31/2015	67	190	10	43.1	18	0	0	0.343	0.76	289	22000
1/31/2016	15	39	1000	31	0	0	0	0.193	0.27	19	240
2/29/2016	79	170	2	1.6	0	0	0	0.117	0.16	2.3	12
3/31/2016	27	41	10	0	0	0	0	0.18	0.25	3.7	50
4/30/2016	9	15	10	1	5.6	0	0	0.167	0.24	13	120

5/31/2016	37	92	10	2.2	0	0	0	0.13	0.19	54	130
6/30/2016	25.3	49	110	32	0	0	0	0.2	0.33	26	90
7/31/2016	11	18	220	28.9	0	0	0	0.167	0.24	24	45
8/31/2016	122	290	2400	36	0	0	0	0.16	0.17	79	1500
9/30/2016	28	57	3000	203	0	0	0	0.157	0.21	541	5100
10/31/2016	38	92	130	5.1	0	0	0	0.1	0.14	9.3	80
11/30/2016	7.6	16	10	2.2	29	0	0	0.147	0.16	12	170
12/31/2016	206	490	10	1	11	0	0	0.243	0.29	3.7	50
1/31/2017	92	170	10	2.2	15	0	0	0.157	0.22	45	460
2/28/2017	20	47	10	1	0	0	0	0.18	0.25	3.4	40
3/31/2017	18	48	10	1	0	0	0	0.45	0.81	1	10
4/30/2017	16	32	60	3.9	0	0	0	0.15	0.21	5.8	20
5/31/2017	25	42	10	1	0	0	0	0.123	0.14	1	10
6/30/2017	16	16	35000	632	0	0	0	0.183	0.28	14	50
7/31/2017	6.2	13	210	63	0	0	0	0.133	0.2	12	90
8/31/2017	19	47	910	10	0	0	0	0.11	0.14	64	110
9/30/2017	15	26	260	130	0	0	0	0.13	0.21	140	490
10/31/2017	5.3	16	30	8.4	0	0	0	0.123	0.18	192	2200
11/30/2017	8.4	8.8	20	2.7	0	0	0	0.19	0.25	14	60
12/31/2017	54	130	40	7.4	4.3	0	0	0.13	0.2	179	480
1/31/2018	95	220	10	10	0	0	0	0.14	0.2	18	310
2/28/2018	31	81	10	1	0	0	0	0.163	0.22	1	10
3/31/2018	32	52	160	5.4	0	0	0	0.133	0.16	27	100
4/30/2018	808	2400	10	1	0	0	0	0.06	0.08	7.9	50
5/31/2018	12	24	30	3.1	0	0	0	0.183	0.33	132	1100
6/30/2018	12	22	50	3.7	0	0	0	0.063	0.08	10	90
7/31/2018	11	24	3400	32	0	0	0	0.067	0.11	34	190
8/31/2018	163	460	12000	116	6	0	0	0.067	0.1	170	590

9/30/2018	12	25	600	51	0	0	0	0.19	0.33	581	1400
10/31/2018	6.3	19	280	28	0	0	0	0.073	0.12	312	730
11/30/2018	5.6	10	10	4.6	0	0	0	0.077	0.13	26	160
12/31/2018	3.2	9.7	10	1	0	0	0	0.073	0.13	78	1700
1/31/2019	18	20	0	1	0	0	0	0.063	0.11	4.6	10
2/28/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
3/31/2019	33	85	0	10	0	0	0	0.13	0.22	10	10
4/30/2019	15	26	0	10	4	<1	0	0.117	0.13	22	50
5/31/2019	6	8.3	0	10	0	<1	0	0.13	0.18	14	30
6/30/2019	67	130	40	20	9.4	<1	0	0.127	0.2	77	450
7/31/2019	6.3	8.5	730	42	4	<1	0	0.063	0.08	55	1700
8/31/2019	18.4	31	3500	70	0	<1	0	0.09	0.12	69	550
9/30/2019	10.7	20	180	81	4	<1	0	0.06	0.08	592	2100
10/31/2019	9.3	18	150	36	0	<1	0	0.093	0.15	548	1000
11/30/2019	29	45	330	79	0	<1	0	0.077	0.09	75	150
12/31/2019	19	28	1600	54	5.9	<1	0	0.097	0.11	32	330
1/31/2020	13	28	100	22	0	<1	0	0.117	0.18	37	250
2/29/2020	13	16	0	10	4	<1	0	0.263	0.52	10	0
3/31/2020	17	31	10	10	0	<1	0	0.06	0.07	13	20
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	13	10	4600	214	< 4	< 3	< 5	0.095	0.13	40	160
09/30/2020	14	11.8	90	90	< 4	<1	< 1	0.075	0.1	20	40
10/31/2020	60	24.2	16000	2884	< 4	<1	< 1	0.203	0.24	431	900
11/30/2020	27	12.3	100	22	< 4	<1	< 1	0.077	0.09	37	510
12/31/2020	10	6.7	70	19	< 4	<1	< 1	0.087	0.12	35	430

Outfall 004A – Wet Weather

Parameter	TSS	TSS	pH	pH	Fecal Coliform	Fecal Coliform	Oil & grease
	Monthly Ave	Daily Max	Minimum	Maximum	Daily Max	MOAV GEO	Daily Max
Units	mg/L	mg/L	SU	SU	CFU/100mL	CFU/100mL	mg/L
Effluent Limit	Report	100	6	8.5	Report	Report	15
Minimum	0	0	5.59	5.59	20	20	0
Maximum	260	260	8.5	8.5	80000	80000	7.3
Average	28.7	28.7	7.06	7.06	6310	6310	0.339
Exceedances	N/A	3	1	0	N/A	N/A	0
4/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
5/31/2015	36	36	6.8	6.8	80	80	0
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
7/31/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
8/31/2015	13	13	6.79	6.79	80000	80000	0
9/30/2015	85	85	7.1	7.1	26000	26000	0
10/31/2015	53	53	7.54	7.54	26000	26000	0
11/30/2015	5.8	5.8	8.32	8.32	11000	11000	0
12/31/2015	5	5	7.77	7.77	1200	1200	0
1/31/2016	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
2/29/2016	5.7	5.7	6.21	6.21	55	55	0
3/31/2016	5.2	5.2	5.59	5.59	790	790	0
4/30/2016	35	35	7.42	7.42	66000	66000	4
5/31/2016	9.3	9.3	7.08	7.08	1000	1000	0

6/30/2016	8.9	8.9	7.85	7.85	5500	5500	0
7/31/2016	6.4	6.4	7.42	7.42	4600	4600	0
8/31/2016	19	19	7.15	7.15	42000	42000	0
9/30/2016	12	12	7.13	7.13	80000	80000	0
10/31/2016	5	5	7.35	7.35	4500	4500	0
11/30/2016	260	**260**	7.38	7.38	3500	3500	0
12/31/2016	5	5	6.44	6.44	240	240	0
1/31/2017	5	5	7.04	7.04	2100	2100	0
2/28/2017	74	74	6.81	6.81	3100	3100	7.3
3/31/2017	54	54	7.17	7.17	650	650	0
4/30/2017	10	10	6.83	6.83	6600	6600	0
5/31/2017	6.3	6.3	7.61	7.61	2400	2400	0
6/30/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	18	18	7.16	7.16	570	570	0
8/31/2017	11	11	6.67	6.67	4900	4900	0
9/30/2017	5	5	6.99	6.99	6300	6300	0
10/31/2017	11	11	7.73	7.73	7500	7500	0
11/30/2017	25	25	7.36	7.36	1400	1400	0
12/31/2017	8.5	8.5	6.79	6.79	700	700	0
1/31/2018	10	10	7.57	7.57	1900	1900	0
2/28/2018	51	51	6.4	6.4	NODI: E	NODI: E	0
3/31/2018	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	11	11	6.97	6.97	20	20	0
5/31/2018	NODI: 8	NODI: E	NODI: 8	NODI: E	NODI: E	NODI: 8	NODI: E
6/30/2018	220	**220**	7.09	7.09	1500	1500	0
7/31/2018	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
8/31/2018	10	10	7.55	7.55	24000	24000	0
9/30/2018	5	5	7.16	7.16	3000	3000	0

10/31/2018	110	**110**	6.51	6.51	NODI: 8	NODI: 8	0
11/30/2018	6.7	6.7	6.72	6.72	220	220	0
12/31/2018	64	64	6.34	6.34	60	60	0
1/31/2019	48	48	7.41	7.41	40	40	5.3
2/28/2019	7.4	7.4	6.38	6.38	230	230	0
3/31/2019	29	29	8.5	8.5	530	530	0
4/30/2019	10	10	6.34	6.34	1100	1100	0
5/31/2019	0	0	6.44	6.44	1300	1300	0
6/30/2019	10	10	6.75	6.75	560	560	0
7/31/2019	6.8	6.8	6.76	6.76	> 80000	> 80000	0
8/31/2019	0	0	6.89	6.89	> 80000	> 80000	0
9/30/2019	NODI: S	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
10/31/2019	6.7	6.7	6.95	6.95	1700	1700	0
11/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	16	16	7.39	7.39	270	270	0
1/31/2020	6	6	7.53	7.53	NODI: V	NODI: V	0
2/29/2020	13	13	6.89	6.89	70	70	0
3/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
09/30/2020	25	25	7.07	7.07	5700	5700	< 4
10/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
11/30/2020	16	16	7.14	7.14	600	600	< 4
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 004A – Wet Weather

Parameter	Benzene	Benzene	Flow rate	Flow rate	Surfactants (MBAS)	Surfactants (MBAS)	Enterococci	Enterococci
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	MOAV GEO	Daily Max
Units	ug/L	ug/L	MGD	MGD	mg/L	mg/L	CFU/100mL	CFU/100mL
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0.002	0.12	0	0	0	0
Maximum	0	0	0.239	2.517	0.6	0.6	27000	27000
Average	0	0	0.0733	0.991	0.164	0.164	2680	2680
Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	NODI: E	NODI: E	0.13	0.58	NODI: E	NODI: E	NODI: E	NODI: E
5/31/2015	0	0	0.05	0.58	0.07	0.07	10	10
6/30/2015	NODI: E	NODI: E	0.15	1.55	NODI: E	NODI: E	NODI: E	NODI: E
7/31/2015	NODI: E	NODI: E	0.04	1.06	NODI: E	NODI: E	NODI: E	NODI: E
8/31/2015	0	0	0.03	0.51	0.41	0.41	27000	27000
9/30/2015	0	0	0.1	2.18	0.1	0.1	15000	15000
10/31/2015	0	0	0.06	0.67	0.06	0.06	4400	4400
11/30/2015	0	0	0.04	0.71	0.19	0.19	1700	1700
12/31/2015	0	0	0.08	1.3	0.1	0.1	1500	1500
1/31/2016	NODI: E	NODI: E	0.08	1.19	NODI: E	NODI: E	NODI: E	NODI: E
2/29/2016	0	0	0.1	0.8	0.12	0.12	60	60
3/31/2016	0	0	0.1	1	0.18	0.18	220	220
4/30/2016	0	0	0.05	0.8	0.23	0.23	600	600
5/31/2016	0	0	0.04	0.88	0.14	0.14	500	500
6/30/2016	0	0	0.013	0.64	0.46	0.46	90	90

7/31/2016	0	0	0.0092	0.12	0.4	0.4	1200	1200
8/31/2016	0	0	0.02	0.83	0.11	0.11	1700	1700
9/30/2016	0	0	0.002	0.211	0.6	0.6	1700	1700
10/31/2016	0	0	0.12	1.58	0.21	0.21	290	290
11/30/2016	0	0	0.05	0.8	0.3	0.3	3000	3000
12/31/2016	0	0	0.058	0.794	0.36	0.36	130	130
1/31/2017	0	0	0.079	0.966	0.09	0.09	1000	1000
2/28/2017	0	0	0.045	0.215	0.24	0.24	2300	2300
3/31/2017	0	0	0.102	0.912	0.34	0.34	150	150
4/30/2017	0	0	0.147	1.552	0.28	0.28	1600	1600
5/31/2017	0	0	0.09	0.736	0.12	0.12	370	370
6/30/2017	NODI: C	NODI: C	0.124	1.887	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2017	0	0	0.077	1.21	0.22	0.22	3400	3400
8/31/2017	0	0	0.011	0.705	0.08	0.08	250	250
9/30/2017	0	0	0.071	1.279	0.14	0.14	4500	4500
10/31/2017	0	0	0.091	1.067	0.11	0.11	20000	20000
11/30/2017	0	0	0.024	0.789	0.18	0.18	1600	1600
12/31/2017	0	0	0.008	0.453	0.09	0.09	830	830
1/31/2018	0	0	0.096	1.179	0.12	0.12	730	730
2/28/2018	0	0	0.012	0.181	0.12	0.12	NODI: E	NODI: E
3/31/2018	NODI: C	NODI: C	0.085	1.938	NODI: C	NODI: C	NODI: C	NODI: C
4/30/2018	0	0	0.094	1.308	0.07	0.07	80	80
5/31/2018	NODI: 8	NODI: 8	0.024	0.771	NODI: 8	NODI: E	NODI: 8	NODI: E
6/30/2018	0	0	0.058	1.027	0.31	0.31	3700	3700
7/31/2018	NODI: V	NODI: V	0.098	2.517	NODI: V	NODI: V	NODI: V	NODI: V
8/31/2018	0	0	0.094	1.095	0.22	0.22	3600	3600
9/30/2018	0	0	0.111	0.96	0.06	0.06	9000	9000
10/31/2018	0	0	0.069	0.965	0.1	0.1	NODI: 8	NODI: 8

11/30/2018	0	0	0.239	1.266	0.05	0.05	690	690
12/31/2018	0	0	0.042	0.568	0.09	0.09	350	350
1/31/2019	0	0	0.071	1.089	0.11	0.11	710	710
2/28/2019	0	0	0.035	0.504	0	0	260	260
3/31/2019	0	0	0.036	0.634	0.11	0.11	290	290
4/30/2019	0	0	0.152	2.066	0.254	0.254	410	410
5/31/2019	0	0	0.044	0.6	0.08	0.08	1300	1300
6/30/2019	0	0	0.106	1.318	0	0	670	670
7/31/2019	0	0	0.132	1.282	0.11	0.11	1600	1600
8/31/2019	0	0	0.108	1.471	0.08	0.08	3500	3500
9/30/2019	NODI: V	NODI: V	0.039	0.992	NODI: V	NODI: V	NODI: V	NODI: V
10/31/2019	0	0	0.089	1.067	0.06	0.06	690	690
11/30/2019	NODI: V	NODI: V	0.064	1.164	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	0	0	0.133	1.136	0.07	0.07	420	420
1/31/2020	0	0	0.015	0.565	0.06	0.06	NODI: V	NODI: V
2/29/2020	0	0	0.065	0.651	0.07	0.07	160	160
3/31/2020	NODI: Z	NODI: Z	0.082	0.997	NODI: Z	NODI: Z	NODI: Z	NODI: Z
4/30/2020	NODI: Z	NODI: Z	0.087	0.599	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	0.036	0.597	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	0.045	0.936	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	0.016	0.492	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	NODI: V	NODI: V	0.032	1.321	NODI: V	NODI: V	NODI: V	NODI: V
09/30/2020	< 1	< 1	0.003	0.0186	0.1	0.1	1700	1700
10/31/2020	NODI: V	NODI: V	0.1	1.187	NODI: V	NODI: V	NODI: V	NODI: V
11/30/2020	< 1	< 1	0.09	1.587	< .05	< .05	910	910
12/31/2020	NODI: V	NODI: V	0.123	1.482	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 004A – Wet Weather

Parameter	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Indeno(1,2,3-cd)pyrene	Naphthalene	PAH, Total Method 610
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	TOTAL
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0	0
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
9/30/2015	0	0	0	0	0	0	0	0	NODI: B
12/31/2015	0	0	0	0	0	0	0	0	NODI: B
3/31/2016	0	0	0	0	0	0	0	0	NODI: B
6/30/2016	0	0	0	0	0	0	0	0	NODI: B
9/30/2016	0	0	0	0	0	0	0	0	NODI: B
12/31/2016	0	0	0	0	0	0	0	0	NODI: B
3/31/2017	0	0	0	0	0	0	0	0	NODI: B
6/30/2017	0	0	0	0	0	0	0	0	NODI: B
9/30/2017	0	0	0	0	0	0	0	0	NODI: B
12/31/2017	0	0	0	0	0	0	0	0	NODI: B
3/31/2018	0	0	0	0	0	0	0	0	0

6/30/2018	0	0	0	0	0	0	0	0	0
9/30/2018	0	0	0	0	0	0	0	0	0
12/31/2018	0	0	0	0	0	0	0	0	0
3/31/2019	0	0	0	0	0	0	0	0	0
6/30/2019	0	0	0	0	0	0	0	0	0
9/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	0	0	0	0	0	0	0	0	0
3/31/2020	0	0	0	0	0	0	0	0	0
6/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
9/30/2020	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 004C – Dry Weather

Parameter	TSS	TSS	Fecal Coliform	Fecal Coliform	Oil & grease	Benzene	Benzene	Surfactants (MBAS)	Surfactants (MBAS)	Enterococci	Enterococci
	Monthly Ave	Daily Max	Daily Max	MOAV GEO	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	MOAV GEO	Daily Max
Units	mg/L	mg/L	CFU/100mL	CFU/100mL	mg/L	ug/L	ug/L	mg/L	mg/L	CFU/100mL	CFU/100mL
Effluent Limit	Report	100	Report	Report	15	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0	0	0	0
Maximum	54	54	56000	56000	0	0	0	0.41	0.41	7600	7600
Average	11	11	2760	2760	0	0	0	0.0798	0.0798	378	378
Exceedances	N/A	0	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	13	13	80	80	0	0	0	0.05	0.05	20	20
5/31/2015	7	7	30	30	0	0	0	0.05	0.05	10	10
6/30/2015	5	5	3100	3100	0	0	0	0.05	0.05	10	10
7/31/2015	14	14	80	80	0	0	0	0.07	0.07	20	20
8/31/2015	35	35	24000	24000	0	0	0	0.11	0.11	2300	2300
9/30/2015	8.6	8.6	56000	56000	0	0	0	0.14	0.14	7600	7600
10/31/2015	16	16	120	120	0	0	0	0.11	0.11	10	10
11/30/2015	14	14	770	770	0	0	0	0.13	0.13	60	60
12/31/2015	30	30	160	160	0	0	0	0.25	0.25	40	40
1/31/2016	9.9	9.9	260	260	0	0	0	0.23	0.23	50	50
2/29/2016	5	5	140	140	0	0	0	0.05	0.05	150	150
3/31/2016	5	5	4500	4500	0	0	0	0.05	0.05	260	260
4/30/2016	6.4	6.4	3400	3400	0	0	0	0.05	0.05	360	360
5/31/2016	16	16	3800	3800	0	0	0	0.05	0.05	480	480
6/30/2016	5.8	5.8	6800	6800	0	0	0	0.05	0.05	1700	1700

7/31/2016	9.2	9.2	5100	5100	0	0	0	0.37	0.37	450	450
8/31/2016	7.6	7.6	260	260	0	0	0	0.41	0.41	40	40
9/30/2016	8.5	8.5	13000	13000	0	0	0	0.41	0.41	1000	1000
10/31/2016	10	10	2700	2700	0	0	0	0.07	0.07	200	200
11/30/2016	13	13	1200	1200	0	0	0	0.14	0.14	40	40
12/31/2016	12	12	150	150	0	0	0	0.36	0.36	10	10
1/31/2017	16	16	50	50	0	0	0	0.11	0.11	10	10
2/28/2017	5	5	5000	5000	0	0	0	0.17	0.17	3100	3100
3/31/2017	8.4	8.4	3000	3000	0	0	0	0.13	0.13	450	450
4/30/2017	5	5	180	180	0	0	0	0.07	0.07	30	30
5/31/2017	14	14	50	50	0	0	0	0.08	0.08	10	10
6/30/2017	9.2	9.2	400	400	0	0	0	0.12	0.12	200	200
7/31/2017	10	10	20	20	0	0	0	0.09	0.09	60	60
8/31/2017	10	10	170	170	0	0	0	0.09	0.09	10	10
9/30/2017	11	11	380	380	0	0	0	0.09	0.09	100	100
10/31/2017	7.7	7.7	2200	2200	0	0	0	0.07	0.07	140	140
11/30/2017	10	10	1900	1900	0	0	0	0.09	0.09	160	160
12/31/2017	54	54	630	630	0	0	0	0.06	0.06	100	100
1/31/2018	13	13	20	20	0	0	0	0.06	0.06	10	10
2/28/2018	5	5	110	110	0	0	0	0.07	0.07	50	50
3/31/2018	5	5	10	10	0	0	0	0.05	0.05	10	10
4/30/2018	8.8	8.8	20	20	0	0	0	0.05	0.05	20	20
5/31/2018	10	10	130	130	0	0	0	0.05	0.05	10	10
6/30/2018	9.6	9.6	620	620	0	0	0	0.05	0.05	310	310
7/31/2018	5	5	140	140	0	0	0	0.05	0.05	70	70
8/31/2018	9.9	9.9	140	140	0	0	0	0.05	0.05	60	60
9/30/2018	11	11	800	800	0	0	0	0.08	0.08	100	100
10/31/2018	12	12	5100	5100	0	0	0	0.05	0.05	370	370

11/30/2018	8.1	8.1	50	50	0	0	0	0.05	0.05	40	40
12/31/2018	8.4	8.4	710	710	0	0	0	0.05	0.05	410	410
1/31/2019	13	13	20	20	0	0	0	0	0	10	10
2/28/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
3/31/2019	7	7	40	40	0	0	0	0	0	0	0
4/30/2019	6.1	6.1	2600	2600	0	0	0	0	0	190	190
5/31/2019	0	0	6500	6500	0	0	0	0	0	630	630
6/30/2019	13	13	20	20	0	0	0	0.06	0.06	90	90
7/31/2019	9.5	9.5	60	60	0	0	0	0.06	0.06	100	100
8/31/2019	11	11	40	40	0	0	0	0	0	10	10
9/30/2019	6.8	6.8	300	300	0	0	0	0	0	200	200
10/31/2019	8.2	8.2	5500	5500	0	0	0	0.05	0.05	460	460
11/30/2019	7.8	7.8	0	0	0	0	0	0.05	0.05	10	10
12/31/2019	30	30	0	0	0	0	0	0	0	0	0
1/31/2020	23	23	40	40	0	0	0	0	0	0	0
2/29/2020	7.4	7.4	10	10	0	0	0	0.11	0.11	0	0
3/31/2020	28	28	0	0	0	0	0	0	0	0	0
4/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
05/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
06/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
07/31/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
08/31/2020	42	42	6900	6900	< 4	< 1	< 1	0.07	0.07	660	660
09/30/2020	18	18	820	820	< 4	< 1	< 1	0.08	0.08	90	90
10/31/2020	7.9	7.9	1500	1500	< 4	< 1	< 1	0.06	0.06	340	340
11/30/2020	8	8	300	300	< 4	< 1	< 1	0.07	0.07	60	60
12/31/2020	11	11	30	30	< 3.6	< 1	< 1	0.1	0.1	10	10

Outfall 005A – Wet Weather

Parameter	Flow	Flow	TSS	TSS	pH	pH	Oil & grease	Oil & grease	Benzene	Benzene
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Minimum	Maximum	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	**MGD**	**MGD**	**mg/L**	**mg/L**	**SU**	**SU**	**mg/L**	**mg/L**	**ug/L**	**ug/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0.014**	**0.111**	**7.6**	**7.6**	**5.21**	**5.21**	**0**	**0**	**0**	**0**
Maximum	**0.141**	**1.034**	**220**	**220**	**7.97**	**7.97**	**4.6**	**4.6**	**0**	**2**
Average	**0.0503**	**0.487**	**35**	**35**	**6.8**	**6.8**	**0.607**	**0.873**	**0**	**0.133**
Exceedances	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
9/30/2015	0.02	0.29	7.8	7.8	6.75	6.75	0	0	0	0
12/31/2015	0.06	0.3	11	11	7.47	7.47	0	0	0	0
3/31/2016	0.04	0.5	11	11	5.68	5.68	0	0	0	0
6/30/2016	0.02	0.35	7.6	7.6	6.95	6.95	0	0	0	0
9/30/2016	0.014	0.111	220	220	7.29	7.29	4.6	4.6	0	0
12/31/2016	0.036	0.416	9	9	6.15	6.15	0	0	0	0
3/31/2017	0.045	0.286	18	18	6.74	6.74	0	0	0	0
6/30/2017	0.069	1.034	26	26	6.92	6.92	0	0	0	0
9/30/2017	0.049	0.701	58	58	7.02	7.02	0	0	0	0
12/31/2017	0.022	0.216	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2018	0.066	0.698	15	15	7.97	7.97	0	4	0	2
6/30/2018	0.041	0.537	26	26	5.21	5.21	0	0	0	0
9/30/2018	0.073	0.521	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2018	0.141	0.697	36	36	6.57	6.57	0	0	0	0

3/31/2019	0.033	0.361	36	36	7.29	7.29	0	0	0	0
6/30/2019	0.071	0.779	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
9/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	0.057	0.637	13	13	6.92	6.92	0	0	0	0
3/31/2020	0.048	0.324	31	31	7	7	4.5	4.5	0	0
6/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
9/30/2020	0.012	0.163	45	45	6.98	6.98	< 4	< 4	< 1	< 1
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 006A – Wet Weather

Parameter	**Flow**	**Flow**	**TSS**	**TSS**	**pH**	**pH**	**Oil & grease**	**Oil & grease**	**Benzene**	**Benzene**
	Monthly Ave	**Daily Max**	**Monthly Ave**	**Daily Max**	**Minimum**	**Maximum**	**Monthly Ave**	**Daily Max**	**Monthly Ave**	**Daily Max**
Units	**MGD**	**MGD**	**mg/L**	**mg/L**	**SU**	**SU**	**mg/L**	**mg/L**	**ug/L**	**ug/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0.005**	**0.018**	**0**	**0**	**0.02**	**1.06**	**0**	**0**	**0**	**0**
Maximum	**1.3**	**4.315**	**110**	**750**	**7.57**	**8.83**	**4**	**9.1**	**1**	**1**
Average	**0.134**	**1.78**	**19.6**	**93.5**	**6.21**	**7.28**	**0.818**	**0.771**	**0.176**	**0.0588**
Exceedances	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
6/30/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
9/30/2015	0.02	0.2	22	65	0.02	1.06	0	0	0	0
12/31/2015	0.06	0.31	0	5	6.58	7.82	0	0	0	0
3/31/2016	0.04	2.73	4	8.6	6.14	6.99	0	0	0	0
6/30/2016	0.02	1.3	2.4	8.6	6.99	7.73	0	0	0	0

9/30/2016	0.005	0.018	14	23	6.64	7.83	1.9	9.1	0	0
12/31/2016	0.035	1.433	4	12	6.67	7.39	0	0	0	0
3/31/2017	0.079	1.059	88	400	7.57	8.83	0	0	0	0
6/30/2017	0.132	4.315	13	42	6.83	7.19	0	0	0	0
9/30/2017	0.037	2.961	110	750	6.06	6.9	0	0	0	0
12/31/2017	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2018	0.095	0.94	16	31	5.95	8.78	0	0	0	0
6/30/2018	0.042	0.483	5	9.6	7.49	8.24	0	0	0	0
9/30/2018	0.079	0.506	5.1	7.6	7.02	7.32	0	0	0	0
12/31/2018	0.156	3.525	28	190	5.9	6.78	0	0	0	0
3/31/2019	0.051	2.172	7.7	17	NODI: G	NODI: G	0	0	0	0
6/30/2019	1.3	3.924	7.1	10	6.01	8.05	4	4	1	1
9/30/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2019	0.078	2.856	5.2	6	6.38	7.76	4	4	1	0
3/31/2020	0.051	1.606	5.9	9	7.1	7.79	4	4	1	0
6/30/2020	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z	NODI: Z
9/30/2020	0.011	0.106	< 6.4	10	7.07	7.68	< 4	4	< 1	1
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 006B - Deicing

Parameter	CBOD5	CBOD5	BOD5	BOD5	Ammonia nitrogen, total, (as N) 30 day	Ammonia nitrogen, total, (as N) 30 day
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	55	99	8.7	12	0.736	1.69
Maximum	180	460	60	100	1.26	3.54
Average	102	280	32.9	70.3	0.995	2.78
Exceedances	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2016	70	280	60	100	0.736	1.69
11/30/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2018	180	460	30	99	0.868	3.11
3/31/2019	55	99	8.7	12	1.26	3.54
10/31/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Outfall 006B - Deicing

Parameter	Nonyl phenoxypoly ethanol	Nonyl phenoxypoly ethanol	Propylene glycol, total	Propylene glycol, total	Ethylene glycol	Ethylene glycol	Tolytriazole	Tolytriazole
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	2.76	4.85
Maximum	0	0	336	2300	0	0	7.1	18.72
Average	0	0	112	767	0	0	5.24	12.9
No. of Exceedances	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2016	0	0	336	2300	0	0	7.1	18.72
11/30/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
1/31/2018	0	0	0	0	0	0	5.86	15.1
3/31/2019	0	0	0	0	0	0	2.76	4.85
10/31/2019	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V
12/31/2020	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V	NODI: V

Attachment B – Deicing Discharge Monitoring Data

		Wet Weather								
	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
Discharge Limitations	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
001B - North Outfall	2/7/2008	19	9.8	38	130	1.86	1.22	NA	NA	1.73 J
001B - North Outfall	2/22/2008	<5.0	<5.0	9.2	930	<0.400	0.57	NA	NA	3.84
001B - North Outfall	3/15/2008	NA	NA	>2,200	4,600	1.8	NA	NA	NA	NA
001B - North Outfall	3/19/2008	20	13	25	790	2.2	NA	NA	NA	NA
001B - North Outfall**	12/19/08 13:00	<120	260	NA	890	4.14	NA	NA	NA	NA
001B - North Outfall**	12/19/08 14:00	NA	NA	NA	880	3.47	NA	NA	NA	NA
001B - North Outfall**	12/19/08 15:00	<100	260	NA	800	3.31	NA	NA	NA	NA
001B - North Outfall**	12/19/08 16:00	NA	NA	NA	830	3.27	NA	NA	NA	NA
001B - North Outfall**	12/19/08 17:00	<100	190	NA	800	3.17	NA	NA	NA	NA
001B - North Outfall**	12/19/08 18:00	NA	NA	NA	770	3.08	NA	NA	NA	NA
001B - North Outfall**	12/19/08 19:00	<100	220	NA	760	3.05	NA	NA	NA	NA
001B - North Outfall**	12/19/08 20:00	NA	NA	NA	880	2.49	NA	NA	NA	NA
001B - North Outfall**	12/19/08 21:00	<500	1400	NA	2300	2.60	NA	NA	NA	NA
001B - North Outfall**	12/19/08 22:00	NA	NA	NA	3500	1.64	NA	NA	NA	NA
001B - North Outfall**	12/19/08 23:00	<500	1800	NA	5500	1.09	NA	NA	NA	NA
001B - North Outfall**	12/20/08 0:00	NA	NA	NA	6500	0.761	NA	NA	NA	NA
001B - North Outfall**	12/20/08 1:00	830	1800	NA	5500	0.623	NA	NA	NA	NA
001B - North Outfall**	12/20/08 2:00	NA	NA	NA	5600	0.564	NA	NA	NA	NA
001B - North Outfall**	12/20/08 3:00	570	1500	NA	5300	0.567	NA	NA	NA	NA
001B - North Outfall**	12/20/08 4:00	NA	NA	NA	4800	0.582	NA	NA	NA	NA
001B - North Outfall**	12/20/08 5:00	610	1400	NA	5100	0.609	NA	NA	NA	NA
001B - North Outfall**	12/20/08 6:00	NA	NA	NA	4700	0.626	NA	NA	NA	NA
001B - North Outfall**	12/20/08 7:00	820	1600	NA	4600	0.639	NA	NA	NA	NA
001B - North Outfall**	12/20/08 8:00	NA	NA	NA	5800	0.663	NA	NA	NA	NA
001B - North Outfall**	12/20/08 9:00	2700	1600	NA	8900	0.420	NA	NA	NA	NA
001B - North Outfall**	12/20/08 10:00	NA	NA	NA	13000	0.499	NA	NA	NA	NA
001B - North Outfall**	12/20/08 11:00	3400	3500	NA	16000	0.609	NA	NA	NA	NA
001B - North Outfall**	12/20/08 12:00	NA	NA	NA	16000	0.706	NA	NA	NA	NA
001B - North Outfall	1/11/2009	2500	4200	7500	15000	0.899	0.9	94.1 J	132.1	226.2
001B - North Outfall**	1/11/09 4:00	< 5.0	<5.0	NA	1200	16.6	NA	NA	NA	NA
001B - North Outfall**	1/11/09 6:00	NA	NA	NA	2200	8.42	NA	NA	NA	NA
001B - North Outfall**	1/11/09 8:00	260	400	NA	2100	4.96	NA	NA	NA	NA
001B - North Outfall**	1/11/09 10:00	NA	NA	NA	1800	4.47	NA	NA	NA	NA
001B - North Outfall**	1/11/09 12:00	200	360	NA	1500	3.43	NA	NA	NA	NA
001B - North Outfall**	1/11/09 16:00	2500	6300	NA	18000	1.05	NA	NA	NA	NA
001B - North Outfall**	1/11/09 18:00	NA	NA	NA	16000	1.50	NA	NA	NA	NA
001B - North Outfall**	1/11/09 20:00	1900	7800	NA	20000	1.58	NA	NA	NA	NA
001B - North Outfall**	1/11/09 22:00	NA	NA	NA	9900	0.719	NA	NA	NA	NA
001B - North Outfall**	1/12/09 0:00	340	1800	NA	6000	0.475	NA	NA	NA	NA
001B - North Outfall**	1/12/09 2:00	NA	NA	NA	5300	0.588	NA	NA	NA	NA
001B - North Outfall**	1/12/09 4:00	1100	6700	NA	16000	1.84	NA	NA	NA	NA
001B - North Outfall**	1/12/09 6:00	NA	NA	NA	16000	2.10	NA	NA	NA	NA
001B - North Outfall**	1/12/09 8:00	1400	6900	NA	16000	2.02	NA	NA	NA	NA
001B - North Outfall**	1/12/09 10:00	NA	NA	NA	12000	2.10	NA	NA	NA	NA

Analytical Results for Deicing Episodes External Outfall Sampling

Wet Weather										
	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
Discharge Limitations	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
001B - North Outfall**	1/12/09 12:00	< 500	2100	NA	6200	1.43	NA	NA	NA	NA
001B - North Outfall**	1/12/09 14:00	NA	NA	NA	5400	1.33	NA	NA	NA	NA
001B - North Outfall**	1/12/09 16:00	< 500	3500	NA	11000	4.35	NA	NA	NA	NA
001B - North Outfall**	1/12/09 20:00	NA	NA	NA	11000	4.58	NA	NA	NA	NA
001B - North Outfall**	1/13/09 0:00	< 500	3100	NA	11000	4.70	NA	NA	NA	NA
001B - North Outfall**	1/13/09 2:00	< 500	2800	NA	11000	3.99	NA	NA	NA	NA
001B - North Outfall**	1/14/09 2:00	NA	NA	NA	11000	3.96	NA	NA	NA	NA
001B - North Outfall**	1/28/09 6:00	<2500	<2500	NA	520	1.89	NA	NA	NA	NA
001B - North Outfall**	1/28/09 8:00	NA	NA	NA	510	2.21	NA	NA	NA	NA
001B - North Outfall**	1/28/09 10:00	<2500	<2500	NA	400	2.07	NA	NA	NA	NA
001B - North Outfall**	1/28/09 12:00	NA	NA	NA	370	1.64	NA	NA	NA	NA
001B - North Outfall**	1/28/09 14:00	<2500	<2500	NA	390	2.37	NA	NA	NA	NA
001B - North Outfall**	1/28/09 16:00	NA	NA	NA	6700	1.14	NA	NA	NA	NA
001B - North Outfall**	1/28/09 18:00	<2500	<2500	NA	2200	1.26	NA	NA	NA	NA
001B - North Outfall**	1/28/09 20:00	NA	NA	NA	260	0.754	NA	NA	NA	NA
001B - North Outfall**	1/28/09 22:00	<2500	<2500	NA	1300	1.92	NA	NA	NA	NA
001B - North Outfall**	1/29/09 0:00	NA	NA	NA	1300	1.85	NA	NA	NA	NA
001B - North Outfall**	1/29/09 2:00	<2500	<2500	NA	1300	1.97	NA	NA	NA	NA
001B - North Outfall**	1/29/09 4:00	<2500	<2500	NA	2300	6.27	<100	54.0	64.9	118.9
001B - North Outfall**	1/29/09 6:00	<2500	<2500	NA	1000	8.11	NA	NA	NA	NA
001B - North Outfall**	1/29/09 8:00	NA	NA	NA	1000	10.2	NA	NA	NA	NA
001B - North Outfall**	1/29/09 10:00	<2500	<2500	NA	1100	11.8	NA	NA	NA	NA
001B - North Outfall**	1/29/09 12:00	NA	NA	NA	890	8.41	NA	NA	NA	NA
001B - North Outfall**	1/29/09 14:00	<2500	<2500	NA	850	8.26	NA	NA	NA	NA
001B - North Outfall**	1/29/09 16:00	NA	NA	NA	1600	11.2	NA	NA	NA	NA
001B - North Outfall**	1/29/09 18:00	<2500	<2500	NA	1700	12.5	NA	NA	NA	NA
001B - North Outfall**	1/29/09 20:00	NA	NA	NA	1400	12.6	NA	NA	NA	NA
001B - North Outfall**	1/29/09 22:00	<2500	<2500	NA	1400	12.6	NA	NA	NA	NA
001B - North Outfall**	1/30/09 0:00	NA	NA	NA	1400	12.5	NA	NA	NA	NA
001B - North Outfall**	1/30/09 2:00	<2500	<2500	NA	1200	10.2	NA	NA	NA	NA
001B - North Outfall**	1/30/09 4:00	NA	NA	NA	1200	9.22	NA	NA	NA	NA
001B - North Outfall	3/2/2009	230	550	710	1900	2.16	<0.20	43.711	46.795	90.506
001B - North Outfall**	3/2/09 18:58	<2500	<2500	NA	1200	1.01	<0.20	31.8	36.2	68
001B - North Outfall**	3/3/09 7:58	<2500	<2500	NA	620	0.576	<0.22	12.1	14.8	26.9
001B - North Outfall	1/18/2010	59	<25	100	240	1.95	0.04	16.390	24.018	40.408
001B - North Outfall	2/10/2010	<50	<50	<50	700	1.25	0.30	7.403	6.611	14.014
001B - North Outfall	1/18/2011	560	890	980	2,400	2.06	<0.30	82.650	91.804	174.454
001B - North Outfall	2/1/2011	22	280	320	930	2.65	<0.03	25.930	26.251	52.181
001B - North Outfall	3/1/2012	260	120	320	530	0.606	<0.03	14.653	21.479	36.132
001B - North Outfall	1/16/2013	<10	<10	220	370	3.400	1.950	63.337	45.218	108.555
001B - North Outfall	3/7/2013	670	2200	2800	5,100	0.212	<0.043	55.717	70.228	125.945
001B - North Outfall	2/13/2014	170	1900	2500	4,400	0.468	<0.02	81.990	103.22	185.210

Analytical Results for Deicing Episodes External Outfall Sampling

		Wet Weather								
Discharge Limitations	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
002B - West Outfall	2/7/2008	<5.0	<5.0	13	53	0.974	1.11	NA	NA	<0.48
002B - West Outfall	2/22/2008	<5.0	14	74	580	1.47	3.28	NA	NA	7.03
002B - West Outfall	3/15/2008	NA	NA	550	1,000	1.7	NA	NA	NA	NA
002B - West Outfall	3/19/2008	43	59	100	480	5.8	NA	NA	NA	NA
001B - West Outfall**	12/19/08 13:00	100	480	NA	970	1.84	NA	NA	NA	NA
001B - West Outfall**	12/19/08 14:00	NA	NA	NA	630	1.65	NA	NA	NA	NA
001B - West Outfall**	12/19/08 15:00	120	430	NA	580	1.41	NA	NA	NA	NA
001B - West Outfall**	12/19/08 16:00	NA	NA	NA	590	1.11	NA	NA	NA	NA
001B - West Outfall**	12/19/08 17:00	<100	250	NA	500	0.897	NA	NA	NA	NA
001B - West Outfall**	12/19/08 18:00	NA	NA	NA	450	0.769	NA	NA	NA	NA
001B - West Outfall**	12/19/08 19:00	<10	38	NA	530	0.734	NA	NA	NA	NA
001B - West Outfall**	12/19/08 20:00	<10	46	NA	650	0.851	2299.59 J	25.4 J	16.2	41.6
001B - West Outfall**	12/19/08 21:00	<10	37	NA	590	0.908	NA	NA	NA	NA
001B - West Outfall**	12/19/08 22:00	NA	NA	NA	2000	1.38	NA	NA	NA	NA
001B - West Outfall**	12/19/08 23:00	<1000	3200	NA	8100	1.58	NA	NA	NA	NA
001B - West Outfall**	12/20/08 0:00	NA	NA	NA	8800	1.68	NA	NA	NA	NA
001B - West Outfall**	12/20/08 1:00	<1000	2500	NA	8700	1.65	NA	NA	NA	NA
001B - West Outfall**	12/20/08 2:00	NA	NA	NA	8000	1.50	NA	NA	NA	NA
001B - West Outfall**	12/20/08 3:00	<1000	2600	NA	7200	1.40	NA	NA	NA	NA
001B - West Outfall**	12/20/08 4:00	NA	NA	NA	6900	1.30	NA	NA	NA	NA
001B - West Outfall**	12/20/08 5:00	<1000	2200	NA	6000	1.11	NA	NA	NA	NA
001B - West Outfall**	12/20/08 6:00	NA	NA	NA	4600	0.859	NA	NA	NA	NA
001B - West Outfall**	12/20/08 7:00	<500	1100	NA	4300	0.768	NA	NA	NA	NA
001B - West Outfall**	12/20/08 8:00	NA	NA	NA	3900	0.782	NA	NA	NA	NA
001B - West Outfall**	12/20/08 9:00	<500	1400	NA	4000	0.761	NA	NA	NA	NA
001B - West Outfall**	12/20/08 10:00	NA	NA	NA	9200	0.939	NA	NA	NA	NA
001B - West Outfall**	12/20/08 11:00	<1000	2900	NA	12000	0.982	NA	NA	NA	NA
001B - West Outfall**	12/20/08 12:00	NA	NA	NA	9600	<3.75	NA	NA	NA	NA
002B - West Outfall	1/11/2009	2400	6800	9500	19000	2.01	0.6	150.1 J	218.1	368.2
001B - West Outfall**	1/11/09 4:00	<250	<250	NA	1500	6.68	NA	NA	NA	NA
001B - West Outfall**	1/11/09 6:00	NA	NA	NA	1400	5.54	NA	NA	NA	NA
001B - West Outfall**	1/11/09 8:00	<50	<50	NA	1300	4.56	NA	NA	NA	NA
001B - West Outfall**	1/11/09 10:00	NA	NA	NA	950	2.75	NA	NA	NA	NA
001B - West Outfall**	1/11/09 12:00	<50	<50	NA	720	1.56	NA	NA	NA	NA
001B - West Outfall**	1/11/09 14:00	NA	NA	NA	980	1.21	NA	NA	NA	NA
001B - West Outfall**	1/11/09 16:00	1800	6600	NA	23000	1.68	NA	NA	NA	NA
001B - West Outfall**	1/11/09 18:00	NA	NA	NA	20000	1.85	NA	NA	NA	NA
001B - West Outfall**	1/11/09 20:00	2300	7800	NA	18000	1.87	NA	NA	NA	NA
001B - West Outfall**	1/11/09 22:00	NA	NA	NA	14000	1.40	NA	NA	NA	NA
001B - West Outfall**	1/12/09 0:00	1100	3200	NA	7700	0.771	NA	NA	NA	NA
001B - West Outfall**	1/12/09 2:00	NA	NA	NA	5500	0.562	NA	NA	NA	NA
001B - West Outfall**	1/12/09 4:00	1200	2900	NA	5000	0.483	NA	NA	NA	NA

Wet Weather										
Discharge Limitations	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
001B - West Outfall**	1/12/09 6:00	NA	NA	NA	20000	3.68	NA	NA	NA	NA
001B - West Outfall**	1/12/09 8:00	2100	6900	NA	20000	3.42	NA	NA	NA	NA
001B - West Outfall**	1/12/09 10:00	NA	NA	NA	14000	2.34	NA	NA	NA	NA
001B - West Outfall**	1/12/09 12:00	960	2800	NA	8300	1.46	NA	NA	NA	NA
001B - West Outfall**	1/12/09 14:00	NA	NA	NA	5900	1.01	NA	NA	NA	NA
001B - West Outfall**	1/12/09 16:00	<500	1400	NA	5000	0.859	NA	NA	NA	NA
001B - West Outfall**	1/12/09 20:00	2100	7700	NA	25000	3.96	NA	NA	NA	NA
001B - West Outfall**	1/12/09 22:00	NA	NA	NA	30000	4.67	NA	NA	NA	NA
001B - West Outfall**	1/13/09 0:00	2800	7700	NA	22000	1.68	NA	NA	NA	NA
001B - West Outfall**	1/13/09 2:00	NA	NA	NA	11000	0.864	NA	NA	NA	NA
001B - West Outfall**	1/28/09 6:00	<2500	<2500	NA	960	0.685	NA	NA	NA	NA
001B - West Outfall**	1/28/09 8:00	NA	NA	NA	980	1.20	NA	NA	NA	NA
001B - West Outfall**	1/28/09 10:00	<2500	<2500	NA	890	0.802	NA	NA	NA	NA
001B - West Outfall**	1/28/09 12:00	NA	NA	NA	1100	0.449	NA	NA	NA	NA
001B - West Outfall**	1/28/09 14:00	<2500	<2500	NA	910	0.534	NA	NA	NA	NA
001B - West Outfall**	1/28/09 16:00	NA	NA	NA	1000	0.898	NA	NA	NA	NA
001B - West Outfall**	1/28/09 18:00	<2500	<2500	NA	4800	1.10	NA	NA	NA	NA
001B - West Outfall**	1/28/09 20:00	NA	NA	NA	1900	0.954	NA	NA	NA	NA
001B - West Outfall**	1/28/09 22:00	<2500	<2500	NA	1400	1.30	NA	NA	NA	NA
001B - West Outfall**	1/29/09 0:00	NA	NA	NA	1300	1.11	NA	NA	NA	NA
001B - West Outfall**	1/29/09 2:00	<2500	<2500	NA	1100	0.994	NA	NA	NA	NA
001B - West Outfall**	1/29/09 4:00	NA	NA	NA	860	2.50	NA	NA	NA	NA
001B - West Outfall**	1/29/09 6:00	<2500	<2500	NA	540	2.42	NA	NA	NA	NA
001B - West Outfall**	1/29/09 8:00	NA	NA	NA	1400	3.75	NA	NA	NA	NA
001B - West Outfall**	1/29/09 10:00	<2500	<2500	NA	1200	3.71	NA	NA	NA	NA
001B - West Outfall**	1/29/09 12:00	NA	NA	NA	1100	3.17	NA	NA	NA	NA
001B - West Outfall**	1/29/09 14:00	<2500	<2500	NA	980	2.52	NA	NA	NA	NA
001B - West Outfall**	1/29/09 16:00	NA	NA	NA	970	2.31	NA	NA	NA	NA
001B - West Outfall**	1/29/09 18:00	<2500	<2500	NA	1000	4.99	NA	NA	NA	NA
001B - West Outfall**	1/29/09 20:00	NA	NA	NA	1400	7.59	NA	NA	NA	NA
001B - West Outfall**	1/29/09 22:00	<2500	<2500	NA	1600	7.28	NA	NA	NA	NA
001B - West Outfall**	1/30/09 0:00	NA	NA	NA	1300	6.75	NA	NA	NA	NA
001B - West Outfall**	1/30/09 2:00	<2500	<2500	NA	1000	4.71	NA	NA	NA	NA
001B - West Outfall**	1/30/09 4:00	NA	NA	NA	860	3.19	NA	NA	NA	NA
002B - West Outfall	3/2/2009	<2500	3000	3200	8600	2.12	0.457	135,472	209,301	344,773
002B - West Outfall	1/18/2010	<250	420	860	1,700	1.06	4.74	30,681	43,604	74,285
002B - West Outfall	2/10/2010	<50	<50	570	900	3.76	1.94	43,520	31,834	75,354
002B - West Outfall	1/18/2011	690	8,400	7,200	17,000	1.60	<3.2	584,815	803,677	1,388,492
002B - West Outfall	2/1/2011	90	110	340	1,400	1.19	<0.03	21,910	19,666	41,576
002B - West Outfall	3/1/2012	18	310	420	570	0.715	<0.03	28,023	31,998	55,021
002B - West Outfall	1/16/2013	1800	8,500	10,000	23,000	2.450	2.48	491.3	520,040	1011.34
002B - West Outfall	3/7/2013	1000	11,000	10,000	17,000	0.979	<0.049	508,665	675,193	1183.858
002B - West Outfall	2/13/2014	600	14,000	15,000	24,000	1.320	<0.02	237.4	330,605	568

Analytical Results for Deicing Episodes External Outfall Sampling

Wet Weather										
Discharge Limitations	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
003B - Porter Street Outfall 1 (PSO-CB174)	1/11/2009	350	<50	200	1400	14.1	0.3	55.4 J	96.5	151.9
003B - Porter Street Outfall 2 (PSO-DMH102)	1/11/2009	17	29	75	250	3.55	<0.4	14.5 J	30.4	44.9
003B - Porter Street Outfall 3 (PSO-MH78)	1/11/2009	<5.0	<5.0	<2.0	46	1.56	<0.4	<0.2	<0.2	<0.2
003B - Porter Street Outfall Average		122.3	10	91.7	565.3	6.403	0.1	23.3	42.3	65.6
003B - Porter Street Outfall 1 (PSO-CB174)	3/2/2009	<2500	<2500	540	5700	34.1	0.41 J	112.898	180.077	292.975
003B - Porter Street Outfall 2 (PSO-DMH102)	3/2/2009	<50	<50	15	60	0.795	0.04 J	<0.100	5.228	5.228
003B - Porter Street Outfall 3 (PSO-MH78)	3/2/2009	<50	<50	<2.0	150	0.769	<0.20	<0.100	0.068 J	0.068
003B - Porter Street Outfall Average		0.0	0.0	185	1970	11.888	0.15	56.449	136.327	99.424
003B - Porter Street Outfall 1 (PSO-CB174)	1/18/2010	78	30	76	690	2.03	0.26	14.068	17.016	31.084
003B - Porter Street Outfall 2 (PSO-DMH102)	1/18/2010	5.0	7.2	18	84	0.265	<0.03	3.517 J	4.421 J	7.938
003B - Porter Street Outfall (PSO-MH78)	1/18/2010	<5.0	<5.0	<2.0	73	<0.075	0.04	0.760 J	0.121 J	0.881
003B - Porter Street Outfall Average		27.7	12.4	31.3	282	0.765	0.10	6.115	7.186	13.301
003B - Porter Street Outfall 1 (PSO-CB174)	2/10/2010	<50	<50	18	110	0.598	2.17	0.156 J	0.807 J	0.963
003B - Porter Street Outfall 2 (PSO-DMH102)	2/10/2010	<50	<50	330	1100	108	1.43	16.564	23.822	40.386
003B - Porter Street Outfall (PSO-MH78)	2/10/2010	<50	<50	<2.0	140	3.55	0.03	0.081 J	0.083 J	0.164
003B - Porter Street Outfall Average		0.0	0.0	116.0	450	37.4	1.21	5.60	8.24	13.84
003B - Porter Street Outfall 1 (PSO-CB174)	1/18/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
003B - Porter Street Outfall 2 (PSO-DMH102)	1/18/2011	34	23	93	190	0.195	<0.3	15.674 J	21.708 J	37.382
003B - Porter Street Outfall 3 (PSO-MH78)	1/18/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
003B - Porter Street Outfall Average		34.0	23.0	93.0	190.0	0.2	0.0	15.7	21.7	37.4
003B - Porter Street Outfall 1 (PSO-CB174)	2/1/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
003B - Porter Street Outfall 2 (PSO-DMH102)	2/1/2011	16	75	97	220	0.563	<0.03	6.395	8.158	14.553
003B - Porter Street Outfall 3 (PSO-MH78)	2/1/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
003B - Porter Street Outfall Average		16.0	75.0	97.0	220.0	0.6	0.0	6.4	8.2	14.6
003B - Porter Street Outfall 1 (PSO-CB174)	3/1/2012	<10	<10	3.6	37	0.283	<0.03	<0.100	2.300 J	2.300 J
003B - Porter Street Outfall 2 (PSO-DMH102)	3/1/2012	<10	<10	<2.0	<20	0.106	<0.03	<0.100	2.300 J	2.300 J
003B - Porter Street Outfall 3 (PSO-MH78)	3/1/2012	<10	<10	2.2	<20	0.202	<0.03	<0.100	2.300 J	2.300 J
003B - Porter Street Outfall Average		0.0	0.0	1.9	12.3	0.2	0.0	0.0	2.300 J	2.300 J
003B - Porter Street Outfall 1 (PSO-CB174)	1/16/2013	<10	<10	53.0	1700.0	1.6	2.3	1.998 J	2.224 J	4.222 J
003B - Porter Street Outfall 2 (PSO-DMH102)	1/16/2013	<10	<10	64.0	170.0	0.1	2.4	5.5	6.0	11.482
003B - Porter Street Outfall 3 (DMH-11)	1/16/2013	<10	<10	3.7	170.0	0.163	1.28	1.494 J	1.441 J	2.935 J
003B - Porter Street Outfall Average		0.0	0.0	40.2	680.0	0.6	2.0	2.995 J	3.218 J	6.213 J
003B - Porter Street Outfall 1 (PSO-CB174)	3/7/2013	<7	<7	15.0	330.0	1.0	<0.041	1.002 J	1.191 J	2.193 J
003B - Porter Street Outfall 2 (PSO-DMH102)	3/7/2013	<7	11.0	4.7	32.0	0.1	2.1	1.031 J	0.847 J	1.878 J
003B - Porter Street Outfall 3 (DMH-11)	3/7/2013	<7	7.4	4.6	110.0	0.379	2.11	<0.100	<0.100	ND
003B - Porter Street Outfall Average		0.0	6.1	8.1	157.3	0.5	1.4	0.678 J	0.679 J	1.357 J
003B - Porter Street Outfall 1 (PSO-CB174)	2/13/2014	22.0	93.0	70.0	1300.0	0.8	<0.02	6.4	5.0	11.37
003B - Porter Street Outfall 2 (PSO-DMH102)	2/13/2014	7.1	28.0	240.0	420.0	0.1	1.9	42.2	87.5	129.67
003B - Porter Street Outfall 3 (DMH-11)	2/13/2014	<7.0	<7.0	200.0	1400.0	0.508	<0.02	2.45 J	3.01	5.46 J
003B - Porter Street Outfall Average		9.7	40.3	170.0	1040.0	0.5	0.6	17.00 J	31.8	48.83 J

Analytical Results for Deicing Episodes External Outfall Sampling

Wet Weather										
Discharge Limitations	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
006B - A21**	12/19/08 13:00	<5.0	<5.0	NA	42	2.94	NA	NA	NA	NA
006B - A21**	12/19/08 14:00	NA	NA	NA	48	2.98	NA	NA	NA	NA
006B - A21**	12/19/08 15:00	<5.0	<5.0	NA	35	2.92	NA	NA	NA	NA
006B - A21**	12/19/08 16:00	NA	NA	NA	42	3.47	NA	NA	NA	NA
006B - A21**	12/19/08 17:00	<5.0	<5.0	NA	490	1.17	NA	NA	NA	NA
006B - A21**	12/19/08 18:00	NA	NA	NA	260	0.844	NA	NA	NA	NA
006B - A21**	12/19/08 19:00	<5.0	<5.0	NA	580	1.10	NA	NA	NA	NA
006B - A21**	12/19/08 20:00	NA	NA	NA	42	4.63	NA	NA	NA	NA
006B - A21**	12/19/08 21:00	<5.0	<5.0	NA	37	3.38	NA	NA	NA	NA
006B - A21**	12/19/08 22:00	NA	NA	NA	32	3.37	NA	NA	NA	NA
006B - A21**	12/19/08 23:00	<5.0	<5.0	NA	32	3.46	NA	NA	NA	NA
006B - A21**	12/20/08 0:00	NA	NA	NA	32	3.57	NA	NA	NA	NA
006B - A21**	12/20/08 1:00	<5.0	<5.0	NA	32	3.49	NA	NA	NA	NA
006B - A21**	12/20/08 2:00	NA	NA	NA	37	3.56	NA	NA	NA	NA
006B - A21**	12/20/08 3:00	<5.0	<5.0	NA	35	3.62	NA	NA	NA	NA
006B - A21**	12/20/08 4:00	NA	NA	NA	120	3.42	NA	NA	NA	NA
006B - A21**	12/20/08 5:00	<5.0	<5.0	NA	540	1.13	NA	NA	NA	NA
006B - A21**	12/20/08 6:00	NA	NA	NA	590	0.762	NA	NA	NA	NA
006B - A21**	12/20/08 7:00	<5.0	<5.0	NA	680	0.357	NA	NA	NA	NA
006B - A21**	12/20/08 8:00	NA	NA	NA	550	1.68	NA	NA	NA	NA
006B - A21**	12/20/08 9:00	<5.0	<5.0	NA	69	3.28	NA	NA	NA	NA
006B - A21**	12/20/08 10:00	NA	NA	NA	100	3.59	NA	NA	NA	NA
006B - A21**	12/20/08 11:00	<5.0	<5.0	NA	65	3.51	NA	NA	NA	NA
006B - A21**	12/20/08 12:00	NA	NA	NA	48	3.42	NA	NA	NA	NA
006B - A8	1/11/2009	<5.0	<5.0	5.5	67	2.16	<0.3	3.0 J	<0.2	3.0
006B - A19	1/11/2009	24	<5.0	210	360	46.0	1.1	37.5 J	28.1	65.6
006B - A22	1/11/2009	37	<5.0	160	250	21.5	<0.3	20.8 J	14.1	34.9
006B - A29	1/11/2009	17	<5.0	14	39	1.88	<0.4	2.7 J	<0.2	2.7
006B - A31	1/11/2009	7.5	<5.0	39	69	6.22	0.4	17.9 J	13.4	31.3
006B - A34	1/11/2009	<5.0	<5.0	60	110	10.8	<0.3	19.3 J	15.0	34.3
006B - A38	1/11/2009	<5.0	<5.0	<2.0	67	0.510	<0.4	<0.2	<0.2	<0.2
006B- Runway/Perimeter Outfall Average		12.2	0.0	69.8	137	12.724	0.2	14.5	10.1	24.5

Analytical Results for Deicing Episodes External Outfall Sampling

Wet Weather										
Discharge Limitations	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
006B - A21**	12/19/08 13:00	<5.0	<5.0	NA	42	2.94	NA	NA	NA	NA
006B - A21**	12/19/08 14:00	NA	NA	NA	48	2.98	NA	NA	NA	NA
006B - A21**	12/19/08 15:00	<5.0	<5.0	NA	35	2.92	NA	NA	NA	NA
006B - A21**	12/19/08 16:00	NA	NA	NA	42	3.47	NA	NA	NA	NA
006B - A21**	12/19/08 17:00	<5.0	<5.0	NA	490	1.17	NA	NA	NA	NA
006B - A21**	12/19/08 18:00	NA	NA	NA	260	0.844	NA	NA	NA	NA
006B - A21**	12/19/08 19:00	<5.0	<5.0	NA	580	1.10	NA	NA	NA	NA
006B - A21**	12/19/08 20:00	NA	NA	NA	42	4.63	NA	NA	NA	NA
006B - A21**	12/19/08 21:00	<5.0	<5.0	NA	37	3.38	NA	NA	NA	NA
006B - A21**	12/19/08 22:00	NA	NA	NA	32	3.37	NA	NA	NA	NA
006B - A21**	12/19/08 23:00	<5.0	<5.0	NA	32	3.46	NA	NA	NA	NA
006B - A21**	12/20/08 0:00	NA	NA	NA	32	3.57	NA	NA	NA	NA
006B - A21**	12/20/08 1:00	<5.0	<5.0	NA	32	3.49	NA	NA	NA	NA
006B - A21**	12/20/08 2:00	NA	NA	NA	37	3.56	NA	NA	NA	NA
006B - A21**	12/20/08 3:00	<5.0	<5.0	NA	35	3.62	NA	NA	NA	NA
006B - A21**	12/20/08 4:00	NA	NA	NA	120	3.42	NA	NA	NA	NA
006B - A21**	12/20/08 5:00	<5.0	<5.0	NA	540	1.13	NA	NA	NA	NA
006B - A21**	12/20/08 6:00	NA	NA	NA	590	0.762	NA	NA	NA	NA
006B - A21**	12/20/08 7:00	<5.0	<5.0	NA	680	0.357	NA	NA	NA	NA
006B - A21**	12/20/08 8:00	NA	NA	NA	550	1.68	NA	NA	NA	NA
006B - A21**	12/20/08 9:00	<5.0	<5.0	NA	69	3.28	NA	NA	NA	NA
006B - A21**	12/20/08 10:00	NA	NA	NA	100	3.59	NA	NA	NA	NA
006B - A21**	12/20/08 11:00	<5.0	<5.0	NA	65	3.51	NA	NA	NA	NA
006B - A21**	12/20/08 12:00	NA	NA	NA	48	3.42	NA	NA	NA	NA
006B - A8	1/11/2009	<5.0	<5.0	5.5	67	2.16	<0.3	3.0 J	<0.2	3.0
006B - A19	1/11/2009	24	<5.0	210	360	46.0	1.1	37.5 J	28.1	65.6
006B - A22	1/11/2009	37	<5.0	160	250	21.5	<0.3	20.8 J	14.1	34.9
006B - A29	1/11/2009	17	<5.0	14	39	1.88	<0.4	2.7 J	<0.2	2.7
006B - A31	1/11/2009	7.5	<5.0	39	69	6.22	0.4	17.9 J	13.4	31.3
006B - A34	1/11/2009	<5.0	<5.0	60	110	10.8	<0.3	19.3 J	15.0	34.3
006B - A38	1/11/2009	<5.0	<5.0	<2.0	67	0.510	<0.4	<0.2	<0.2	<0.2
006B- Runway/Perimeter Outfall Average		12.2	0.0	69.8	137	12.724	0.2	14.5	10.1	24.5
006B - A21**	1/11/09 4:00	<100	<100	NA	140	21.6	NA	NA	NA	NA
006B - A21**	1/11/09 6:00	NA	NA	NA	130	18.1	NA	NA	NA	NA
006B - A21**	1/11/09 8:00	<100	<100	NA	<20	16.9	NA	NA	NA	NA
006B - A21**	1/11/09 10:00	NA	NA	NA	<80	2.25	NA	NA	NA	NA
006B - A21**	1/11/09 12:00	<100	<100	NA	<80	0.252	NA	NA	NA	NA
006B - A21**	1/11/09 14:00	NA	NA	NA	140	6.01	NA	NA	NA	NA
006B - A21**	1/11/09 16:00	<100	<100	NA	99	14.5	NA	NA	NA	NA
006B - A21**	1/11/09 18:00	NA	NA	NA	100	16.0	NA	NA	NA	NA
006B - A21**	1/11/09 20:00	<100	<100	NA	97	15.2	NA	NA	NA	NA
006B - A21**	1/11/09 22:00	NA	NA	NA	110	17.4	NA	NA	NA	NA
006B - A21**	1/12/09 0:00	<100	<100	NA	84	1.67	NA	NA	NA	NA
006B - A21**	1/12/09 2:00	NA	NA	NA	110	3.54	NA	NA	NA	NA
006B - A21**	1/12/09 4:00	<100	<100	NA	81	13.9	NA	NA	NA	NA

Analytical Results for Deicing Episodes External Outfall Sampling

	Wet Weather									
	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
Discharge Limitations	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
006B - A21**	1/11/09 4:00	<100	<100	NA	140	21.6	NA	NA	NA	NA
006B - A21**	1/11/09 6:00	NA	NA	NA	130	18.1	NA	NA	NA	NA
006B - A21**	1/11/09 8:00	<100	<100	NA	<20	16.9	NA	NA	NA	NA
006B - A21**	1/11/09 10:00	NA	NA	NA	<80	2.25	NA	NA	NA	NA
006B - A21**	1/11/09 12:00	<100	<100	NA	<80	0.252	NA	NA	NA	NA
006B - A21**	1/11/09 14:00	NA	NA	NA	140	6.01	NA	NA	NA	NA
006B - A21**	1/11/09 16:00	<100	<100	NA	99	14.5	NA	NA	NA	NA
006B - A21**	1/11/09 18:00	NA	NA	NA	100	16.0	NA	NA	NA	NA
006B - A21**	1/11/09 20:00	<100	<100	NA	97	15.2	NA	NA	NA	NA
006B - A21**	1/11/09 22:00	NA	NA	NA	110	17.4	NA	NA	NA	NA
006B - A21**	1/12/09 0:00	<100	<100	NA	84	1.67	NA	NA	NA	NA
006B - A21**	1/12/09 2:00	NA	NA	NA	110	3.54	NA	NA	NA	NA
006B - A21**	1/12/09 4:00	<100	<100	NA	81	13.9	NA	NA	NA	NA
006B - A21**	1/12/09 6:00	NA	NA	NA	90	14.5	NA	NA	NA	NA
006B - A21**	1/12/09 8:00	<100	<100	NA	90	14.9	NA	NA	NA	NA
006B - A21**	1/12/09 10:00	NA	NA	NA	92	9.98	NA	NA	NA	NA
006B - A21**	1/12/09 12:00	<100	<100	NA	100	1.12	NA	NA	NA	NA
006B - A21**	1/12/09 14:00	NA	NA	NA	100	1.46	NA	NA	NA	NA
006B - A21**	1/12/09 16:00	<100	<100	NA	160	11.0	NA	NA	NA	NA
006B - A21**	1/12/09 18:00	NA	NA	NA	160	12.8	NA	NA	NA	NA
006B - A21**	1/12/09 20:00	<100	<100	NA	76	13.2	NA	NA	NA	NA
006B - A21**	1/12/09 22:00	NA	NA	NA	81	13.1	NA	NA	NA	NA
006B - A21**	1/13/09 0:00	<100	<100	NA	740	2.17	NA	NA	NA	NA
006B - A21**	1/13/09 2:00	NA	NA	NA	850	1.09	NA	NA	NA	NA
006B - A21**	1/28/09 6:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 8:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 10:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 12:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 14:00	<1000	<1000	NA	410	0.511	NA	NA	NA	NA
006B - A21**	1/28/09 16:00	NA	NA	NA	400	5.99	NA	NA	NA	NA
006B - A21**	1/28/09 18:00	<1000	<1000	NA	320	9.21	NA	NA	NA	NA
006B - A21**	1/28/09 20:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 22:00	<1000	<1000	NA	290	6.14	NA	NA	NA	NA
006B - A21**	1/29/09 0:00	NA	NA	NA	200	4.02	NA	NA	NA	NA
006B - A21**	1/29/09 2:00	<1000	<1000	NA	230	4.83	NA	NA	NA	NA
006B - A21**	1/29/09 4:00	NA	NA	NA	250	4.67	NA	NA	NA	NA
006B - A21**	1/29/09 6:00	<1000	<1000	NA	320	6.18	NA	NA	NA	NA
006B - A21**	1/29/09 8:00	NA	NA	NA	240	4.96	NA	NA	NA	NA
006B - A21**	1/29/09 10:00	<1000	<1000	NA	300	6.25	NA	NA	NA	NA
006B - A21**	1/29/09 12:00	NA	NA	NA	300	6.74	NA	NA	NA	NA
006B - A21**	1/29/09 14:00	<1000	<1000	NA	310	7.30	NA	NA	NA	NA

Analytical Results for Deicing Episodes External Outfall Sampling

Wet Weather											
Discharge Limitations	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
006B - A9	1/18/2010	410	<100	200	530	2.81	0.05	31.387	30.114	61.501
006B - A17	1/18/2010	270	<100	140	440	2.94	0.40	23.169	25.623	48.792
006B - A18	1/18/2010	530	<250	360	840	5.75	0.12	62.807	71.878	134.685
006B - A21	1/18/2010	110	<25	58	170	2.23	<0.03	11.058	10.375	21.433
006B - A23	1/18/2010	150	30	180	360	4.59	0.23	90.771	104.068	194.839
006B - A33	1/18/2010	190	27	260	470	4.29	0.43	74.610	79.279	153.889
006B - A38	1/18/2010	<5.0	<5.0	5.3	32	0.090	<0.02	0.912 J	1.110 J	2.022
006B- Runway/Perimeter Outfall Average		237	8.1	172	406	3.24	0.18	41.972	46.064	88.166
006B - A9	2/10/2010	<50	<50	<2.0	75	0.34	0.12	6.199	1.599 J	7.798
006B - A18	2/10/2010	<50	<50	19	140	19	1.09	24.382	5.265 J	29.647
006B - A19	2/10/2010	<50	<50	8.5	84	19.2	0.74	18.030	6.186	24.216
006B - A21	2/10/2010	<50	<50	5.1	400	3.02	0.21	4.384 J	1.005 J	5.389
006B - A23	2/10/2010	<50	<50	13	82	6.13	0.06	16.796	3.507 J	20.303
006B - A33	2/10/2010	<50	<50	18	53	8.14	0.61	13.476	2.020 J	15.496
006B - A38	2/10/2010	<50	<50	<2.0	130	0.763	0.23	0.106 J	<0.200	0.306
006B- Runway/Perimeter Outfall Average		0.0	0.0	9.1	137.7	8.08	0.44	13.88	2.80	14.74
006B - A9	1/18/2011	<10	<10	<5.0	400.0	0.66	<0.03	<0.500	<0.500	ND
006B - A13	1/18/2011	<10	<10	7.9	650.0	0.30	0.06	<0.500	<0.500	ND
006B - A20	1/18/2011	<10	<10	<10	830.0	0.51	0.09	<0.500	<0.500	ND
006B - A21	1/18/2011	<10	<10	14.0	710.0	1.10	<0.03	<0.500	<0.500	ND
006B - A23	1/18/2011	<10	<10	<5.0	530.0	1.05	<0.03	<0.500	<0.500	ND
006B - A33	1/18/2011	<10	<10	110.0	170.0	4.94	<0.03	71.81	8.015 J	79.82
006B - A38	1/18/2011	<10	<10	5.0	390.0	0.33	2.01	<0.500	<0.500	ND
006B- Runway/Perimeter Outfall Average		0.0	0.0	19.6	525.7	1.27	0.31	10.26	1.15	11.40
006B - A9	2/1/2011	<10	22.0	2.9	80.0	1.09	<0.03	5.14	0.420 J	5.56
006B - A13	2/1/2011	<10	<10	4.0	670.0	0.46	<0.03	1.225 J	0.316 J	1.54
006B - A19	2/1/2011	<10	<10	5.6	650.0	1.16	<0.03	5.26	<0.100	5.26
006B - A21	2/1/2011	<10	<10	5.3	460.0	1.16	<0.03	2.865 J	0.642 J	3.51
006B - A23	2/1/2011	<10	<10	14.0	470.0	2.83	<0.03	8.38	1.942 J	10.32
006B - A33	2/1/2011	<10	<10	39.0	230.0	3.71	<0.0	12.63	4.228 J	16.85
006B - A38	2/1/2011	<10	<10	<2.0	570.0	0.34	<0.03	<0.100	<0.100	ND
006B- Runway/Perimeter Outfall Average		0.0	3.1	8.9	447.1	1.54	0.00	5.07	1.08	6.15
006B - A9	3/1/2012	<10	<10	6.2	32	0.218	<0.02	<0.100	2.300 J	2.300 J
006B - A18	3/1/2012	<10	<10	2.6	20	0.494	<0.03	<0.100	2.300 J	2.300 J
006B - A20	3/1/2012	<10	<10	2.6	<20	0.104	<0.03	1.171 J	2.845 J	4.016 J
006B - A21	3/1/2012	<10	<10	12	37	0.132	<0.03	1.576 J	2.955 J	4.531 J
006B - A23	3/1/2012	<10	27	52	81	0.121	<0.03	5.771	7.791	13.562
006B - A33	3/1/2012	<10	70	100	140	0.147	<0.03	11.482	14.063	25.545
006B - A38	3/1/2012	<10	<10	9.0	83	0.119	<0.02	<0.100	2.300 J	2.300 J
006B- Runway/Perimeter Outfall Average		0.0	13.9	26.3	56.1	0.19	0.00	2.86	4.94	7.79

Analytical Results for Deicing Episodes External Outfall Sampling

Wet Weather										
Discharge Limitations	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
006B - A21**	1/12/09 6:00	NA	NA	NA	90	14.5	NA	NA	NA	NA
006B - A21**	1/12/09 8:00	<100	<100	NA	90	14.9	NA	NA	NA	NA
006B - A21**	1/12/09 10:00	NA	NA	NA	92	9.98	NA	NA	NA	NA
006B - A21**	1/12/09 12:00	<100	<100	NA	100	1.12	NA	NA	NA	NA
006B - A21**	1/12/09 14:00	NA	NA	NA	100	1.46	NA	NA	NA	NA
006B - A21**	1/12/09 16:00	<100	<100	NA	160	11.0	NA	NA	NA	NA
006B - A21**	1/12/09 18:00	NA	NA	NA	160	12.8	NA	NA	NA	NA
006B - A21**	1/12/09 20:00	<100	<100	NA	76	13.2	NA	NA	NA	NA
006B - A21**	1/12/09 22:00	NA	NA	NA	81	13.1	NA	NA	NA	NA
006B - A21**	1/13/09 0:00	<100	<100	NA	740	2.17	NA	NA	NA	NA
006B - A21**	1/13/09 2:00	NA	NA	NA	850	1.09	NA	NA	NA	NA
006B - A21**	1/28/09 6:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 8:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 10:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 12:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 14:00	<1000	<1000	NA	410	0.511	NA	NA	NA	NA
006B - A21**	1/28/09 16:00	NA	NA	NA	400	5.99	NA	NA	NA	NA
006B - A21**	1/28/09 18:00	<1000	<1000	NA	320	9.21	NA	NA	NA	NA
006B - A21**	1/28/09 20:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
006B - A21**	1/28/09 22:00	<1000	<1000	NA	290	6.14	NA	NA	NA	NA
006B - A21**	1/29/09 0:00	NA	NA	NA	200	4.02	NA	NA	NA	NA
006B - A21**	1/29/09 2:00	<1000	<1000	NA	230	4.83	NA	NA	NA	NA
006B - A21**	1/29/09 4:00	NA	NA	NA	250	4.67	NA	NA	NA	NA
006B - A21**	1/29/09 6:00	<1000	<1000	NA	320	6.18	NA	NA	NA	NA
006B - A21**	1/29/09 8:00	NA	NA	NA	240	4.96	NA	NA	NA	NA
006B - A21**	1/29/09 10:00	<1000	<1000	NA	300	6.25	NA	NA	NA	NA
006B - A21**	1/29/09 12:00	NA	NA	NA	300	6.74	NA	NA	NA	NA
006B - A21**	1/29/09 14:00	<1000	<1000	NA	310	7.30	NA	NA	NA	NA
006B - A21**	1/29/09 16:00	NA	NA	NA	290	6.65	NA	NA	NA	NA
006B - A21**	1/29/09 18:00	<1000	<1000	NA	340	8.17	NA	NA	NA	NA
006B - A21**	1/29/09 20:00	NA	NA	NA	280	6.93	NA	NA	NA	NA
006B - A21**	1/29/09 22:00	<1000	<1000	NA	300	8.74	NA	NA	NA	NA
006B - A21**	1/30/09 0:00	NA	NA	NA	300	8.66	NA	NA	NA	NA
006B - A21**	1/30/09 2:00	<1000	<1000	NA	<80	4.49	NA	NA	NA	NA
006B - A21**	1/30/09 4:00	NA	NA	NA	290	8.85	NA	NA	NA	NA
006B - A21**	3/3/09 8:58	<2500	<2500	NA	60	7.41	0.21	9.4 J	2.8 J	12.2
006B - A9	3/2/2009	<50	<50	<2.0	32	3.3	<0.20	8.042	2.491 J	10.533
006B - A19	3/2/2009	61	<50	110	220	17.3	0.10 J	16.022	4.676 J	20.698
006B - A21	3/2/2009	<50	<50	16	160	8.64	<0.20	10.777	3.677 J	14.454
006B - A22	3/2/2009	<50	<50	50	26	12.7	<0.20	20.215	6.002	26.217
006B - A34	3/2/2009	<50	<50	10	83	8.35	0.13 J	19.433	7.323	26.756
006B - A37	3/2/2009	<50	<50	73	190	13.4	0.17 J	42.931	13.798	56.729
006B - A38	3/2/2009	<50	<50	<2.0	120	0.61	<0.20	<0.100	<0.100	<0.100
006B- Runway/Perimeter Outfall Average		8.71	0.0	37.0	119	9.186	0.06	16.774	5.424	22.198

Analytical Results for Deicing Episodes External Outfall Sampling

Wet Weather										
Discharge Limitations	Date	Ethylene Glycol, Total (mg/L)	Propylene Glycol, Total (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Ammonia Nitrogen (mg/L of N)	Nonylphenol (ug/L)	4-Methyl-1-H-benzotriazole (ug/L)	5-Methyl-1-H-benzotriazole (ug/L)	Tolytriazole (ug/L)
	Average Monthly	----	----	----	----	----	----	----	----	----
	Maximum Daily	Report	Report	Report	Report	Report	Report	Report	Report	Report
006B - A9	1/16/2013	<10	<10	<2.0	43	0.832	3.25	5.845000	1.599 J	7.444 J
006B - A17	1/16/2013	<10	<10	5.2	22	5.09	1.4	19.422000	4.256	23.676
006B - A19	1/16/2013	<10	<10	6.4	31	9.230	2	21.813	5.331	27.141
006B - A21	1/16/2013	<10	<10	<10	660	1.160	1.53	5.747	1.957 J	7.704 J
006B - A23	1/16/2013	<10	<10	<2.0	40	3.14	2.35	17.951	3.473 J	21.423 J
006B - A34	1/16/2013	<10	<10	4.3	66	3.37	1.05	18.780	4.041 J	22.821 J
006B - A38	1/16/2013	<10	<10	<5.0	290	0.363	1.4	2.220 J	<0.100	2.220 J
006B- Runway/Perimeter Outfall Average		0.0	0.0	2.3	164.6	3.31	1.85	13.111 J	2.95	16.061 J
006B - A9	3/7/2013	<7	<7	25	98	1.47	9.12	7.149000	3.992	11.141
006B - A17	3/7/2013	<7	<7	46	82	4.86	4.64	16.155000	7.452	23.607
006B - A18	3/7/2013	<7	<7	270	340	1.440	2.37	4.798	2.524	7.322
006B - A21	3/7/2013	<7	<7	110	310	0.848	2.21	9.321	5.3	14.621
006B - A23	3/7/2013	<7	<7	6.9	51	0.25	2.06	5.915	6.484	12.399
006B - A33	3/7/2013	<7	520	780	1200	0.265	3	98.625	104.194	202.819
006B - A38	3/7/2013	<7	<7	<5.0	91	0.229	2.1	1.106 J	1.586 J	2.692 J
006B- Runway/Perimeter Outfall Average		0.0	74.3	176.8	310.3	1.34	3.64	20.438 J	18.790 J	39.229 J
006B - A9	2/13/2014	<7.0	<7.0	5.3	100	0.445	<0.02	7.330000	2.66	9.990
006B - A15	2/13/2014	<7.0	<7.0	3.5	<40	2.47	<0.02	9.070000	3.4	12.470
006B - A18	2/13/2014	<7.0	<7.0	30	74	5.750	<0.02	16.3	5.61	21.910
006B - A21	2/13/2014	<7.0	<7.0	170	1400	0.992	0.23 J	10.6	8.91	19.510
006B - A23	2/13/2014	<7.0	<7.0	3.8	160	2.89	<0.02	18.08	4.4	22.480
006B - A33	2/13/2014	NS	NS	NS	NS	NS	NS	NS	NS	NS
006B - A38	2/13/2014	NS	NS	NS	NS	NS	NS	NS	NS	NS
006B- Runway/Perimeter Outfall Average		0.0	0.0	42.5	346.8	2.51	0.046 J	12.28	5.00	17.27
006B - A7	1/30/2015	<7	<7	11	160	4.71	<0.02	14.21	6.04	20.25
006B - A9	1/30/2015	<7	<7	<2.0	120	0.734	<0.02	7.21	2.76 J	9.97 J
006B - A21	1/30/2015	<7	<7	23	620	2.14	<0.02	11.33	4.44	15.77
006B - A22	1/30/2015	<7	<7	20	220	2.95	<0.02	18.09	5.31	23.40
006B - A23	1/30/2015	<7	<7	9.4	77	2.56	<0.02	18.99	5.40	24.39
006B - A35	1/30/2015	<7	<7	41	170	4.29	<0.02	27.720	7.53	35.25
006B - A38	1/30/2015	<7	<7	<5.0	180	0.451	<0.02	<5.0	2.76 J	2.76 J
006B- Runway/Perimeter Outfall Average		0.0	0.0	15	221	2.55	0.00	13.94	4.89	18.83
006B - A9	4/9/2015	<7.0	<7.0	30	61	0.638	<0.02	<0.10	<0.10	ND
006B - A18	4/9/2015	<7.0	<7.0	66	100	1.64	<0.02	<0.10	<0.10	ND
006B - A20	4/9/2015	<7.0	<7.0	140	220	4.110	<0.02	3.05	<0.10	3.050
006B - A21	4/9/2015	<7.0	<7.0	9.3	38	0.406	<0.02	<0.10	<0.10	ND
006B - A23	4/9/2015	<7.0	<7.0	14	70	0.404	<0.02	<0.10	<0.10	ND
006B - A33	4/9/2015	<7.0	<7.0	32	110	0.535	<0.02	<0.10	<0.10	ND
006B - A38	4/9/2015	<7.0	<7.0	<2.0	33	0.133	<0.02	<0.10	<0.10	ND
006B- Runway/Perimeter Outfall Average		0.0	0.0	42	90	1.12	0.00	0.44	0.00	0.44

Notes:

-For averaging calculations, a value of zero was employed for those results measured below the laboratory detection limit.

-Tolytriazole concentrations calculated as sum of 4-Methyl-1-H-benzotriazole and 5-Methyl-1-H-benzotriazole.

BOD5 - 5 Day Biochemical Oxygen Demand

COD - Chemical Oxygen Demand

J - Result detected below lowest calibration point

J- Value is an estimate calculated by the lab from the response factors of the other two triazole compounds.

NA- Not Analyzed

**Samples collected over a 24-hr period by C2HM Hill, Inc.

Attachment C - Whole Effluent Toxicity (WET) testing results

	Date	Whole Effluent Toxicity - LC_{50}	48-hr Whole Effluent Toxicity - C-NOEC Growth	Whole Effluent Toxicity - C-NOEC Fertilization
Discharge Limitations	Average Monthly Maximum Daily	---- Report	---- Report	---- Report
001B - North Outfall	3/15/2008 [1]	50.0% effluent	25% effluent	<6.25% effluent
001B - North Outfall	3/19/2008	> 100% effluent	100% effluent	100% effluent
002B - West Outfall	3/15/2008 [1]	> 100% effluent	100% effluent	6.25% effluent
002B - West Outfall	3/19/2008	> 100% effluent	100% effluent	12.5% effluent

Daily Survival Results								
			Mysidopsis bahia			*Menidia beryllina*		
		Test Concentration	24 hr	48 hr	Significant?	24 hr	48 hr	Significant?
001B - North Outfall**	3/2/09 18:58	Lab Control	100	100	--	100	100	--
001B - North Outfall**	3/2/09 18:58	6.25% effluent	100	100	No	100	98	No
001B - North Outfall**	3/2/09 18:58	12.5% effluent	100	100	No	90	85	Yes
001B - North Outfall**	3/2/09 18:58	25% effluent	100	100	No	0	0	Yes
001B - North Outfall**	3/2/09 18:58	50% effluent	40	18	Yes	0	0	Yes
001B - North Outfall**	3/2/09 18:58	100% effluent	0	0	Yes	0	0	Yes
001B - North Outfall**	3/3/09 7:58	Lab Control	100	100	--	100	100	--
001B - North Outfall**	3/3/09 7:58	6.25% effluent	100	100	No	100	100	No
001B - North Outfall**	3/3/09 7:58	12.5% effluent	100	100	No	98	98	No
001B - North Outfall**	3/3/09 7:58	25% effluent	100	98	No	100	98	No
001B - North Outfall**	3/3/09 7:58	50% effluent	100	95	No	8	8	Yes
001B - North Outfall**	3/3/09 7:58	100% effluent	78	32	Yes	0	0	Yes
001B - North Outfall	4/1/2012 7:45-8:00	Boston Harbor (Diluent)	NA	NA	NA	98	98	--
001B - North Outfall	4/1/2012 7:45-8:00	Lab Control	NA	NA	NA	100	100	No
001B - North Outfall	4/1/2012 7:45-8:00	6.25% effluent	NA	NA	NA	90	88	No
001B - North Outfall	4/1/2012 7:45-8:00	12.5% effluent	NA	NA	NA	100	100	No
001B - North Outfall	4/1/2012 7:45-8:00	25% effluent	NA	NA	NA	98	98	No
001B - North Outfall	4/1/2012 7:45-8:00	50% effluent	NA	NA	NA	75	75	Yes
001B - North Outfall	4/1/2012 7:45-8:00	100% effluent	NA	NA	NA	58	58	Yes
001B - North Outfall	3/7/2013; 11:20	Boston Harbor (Diluent)	NA	NA	NA	98	88	--
001B - North Outfall	3/7/2013; 11:20	Lab Control	NA	NA	NA	85	85	No
001B - North Outfall	3/7/2013; 11:20	6.25% effluent	NA	NA	NA	95	95	Yes
001B - North Outfall	3/7/2013; 11:20	12.5% effluent	NA	NA	NA	98	98	Yes
001B - North Outfall	3/7/2013; 11:20	25% effluent	NA	NA	NA	90	88	No
001B - North Outfall	3/7/2013; 11:20	50% effluent	NA	NA	NA	80	80	No
001B - North Outfall	3/7/2013; 11:20	100% effluent	NA	NA	NA	0	0	Yes
001B - West Outfall**	12/19/08 20:00	Lab Control	100	100	--	100	100	--
001B - West Outfall**	12/19/08 20:00	6.25% effluent	100	100	No	100	100	No
001B - West Outfall**	12/19/08 20:00	12.5% effluent	98	98	No	100	95	No
001B - West Outfall**	12/19/08 20:00	25% effluent	95	95	No	100	95	No
001B - West Outfall**	12/19/08 20:00	50% effluent	95	92	No	100	100	No
001B - West Outfall**	12/19/08 20:00	100% effluent	50	50	Yes	65	65	Yes
001B - West Outfall	4/1/2012 6:45-7:00	Boston Harbor (Diluent)	NA	NA	NA	100	100	--
001B - West Outfall	4/1/2012 6:45-7:00	Lab Control	NA	NA	NA	100	100	No
001B - West Outfall	4/1/2012 6:45-7:00	6.25% effluent	NA	NA	NA	100	100	No
001B - West Outfall	4/1/2012 6:45-7:00	12.5% effluent	NA	NA	NA	98	98	No
001B - West Outfall	4/1/2012 6:45-7:00	25% effluent	NA	NA	NA	98	95	No
001B - West Outfall	4/1/2012 6:45-7:00	50% effluent	NA	NA	NA	75	75	Yes
001B - West Outfall	4/1/2012 6:45-7:00	100% effluent	NA	NA	NA	35	35	Yes
002B - West Outfall	3/7/2013; 11:40	Boston Harbor (Diluent)	NA	NA	NA	100	98	--
002B - West Outfall	3/7/2013; 11:40	Lab Control	NA	NA	NA	100	100	No
002B - West Outfall	3/7/2013; 11:40	6.25% effluent	NA	NA	NA	93	93	No
002B - West Outfall	3/7/2013; 11:40	12.5% effluent	NA	NA	NA	100	98	Yes
002B - West Outfall	3/7/2013; 11:40	25% effluent	NA	NA	NA	98	93	No
002B - West Outfall	3/7/2013; 11:40	50% effluent	NA	NA	NA	30	7.5	Yes
002B - West Outfall	3/7/2013; 11:40	100% effluent	NA	NA	NA	0	0	Yes

Analytical Results for Deicing Episodes External Outfall Sampling

Daily Survival Results								
			Mysidopsis bahia			*Menidia beryllina*		
		Test Concentration	24 hr	48 hr	Significant?	24 hr	48 hr	Significant?
006B - A21**	3/3/09 8:58	Lab Control	100	98	--	100	100	--
006B - A21**	3/3/09 8:58	6.25% effluent	100	100	No	100	100	No
006B - A21**	3/3/09 8:58	12.5% effluent	100	100	No	100	100	No
006B - A21**	3/3/09 8:58	25% effluent	100	100	No	100	98	No
006B - A21**	3/3/09 8:58	50% effluent	100	100	No	100	82	Yes
006B - A21**	3/3/09 8:58	100% effluent	100	100	No	100	48	Yes
006B - A21**	3/7/2013; 10:30	Boston Harbor (Diluent)	NA	NA	NA	98	98	--
006B - A21**	3/7/2013; 10:30	Lab Control	NA	NA	NA	93	93	No
006B - A21**	3/7/2013; 10:30	6.25% effluent	NA	NA	NA	100	98	No
006B - A21**	3/7/2013; 10:30	12.5% effluent	NA	NA	NA	95	95	No
006B - A21**	3/7/2013; 10:30	25% effluent	NA	NA	NA	93	80	No
006B - A21**	3/7/2013; 10:30	50% effluent	NA	NA	NA	100	90	Yes
006B - A21**	3/7/2013; 10:30	100% effluent	NA	NA	NA	100	93	Yes
003B - Porter Street Outfall	4/1/2012 7:20-7:40	Boston Harbor (Diluent)	NA	NA	NA	98	98	--
003B - Porter Street Outfall	4/1/2012 7:20-7:41	Lab Control	NA	NA	NA	98	98	No
003B - Porter Street Outfall	4/1/2012 7:20-7:42	6.25% effluent	NA	NA	NA	98	98	No
003B - Porter Street Outfall	4/1/2012 7:20-7:43	12.5% effluent	NA	NA	NA	100	100	No
003B - Porter Street Outfall	4/1/2012 7:20-7:44	25% effluent	NA	NA	NA	93	93	No
003B - Porter Street Outfall	4/1/2012 7:20-7:45	50% effluent	NA	NA	NA	90	90	No
003B - Porter Street Outfall	4/1/2012 7:20-7:45	100% effluent	NA	NA	NA	93	90	No
003B - Porter Street Outfall	3/7/2013; 8:50	Boston Harbor (Diluent)	NA	NA	NA	98	90	--
003B - Porter Street Outfall	3/7/2013; 8:50	Lab Control	NA	NA	NA	100	100	No
003B - Porter Street Outfall	3/7/2013; 8:50	6.25% effluent	NA	NA	NA	100	98	No
003B - Porter Street Outfall	3/7/2013; 8:50	12.5% effluent	NA	NA	NA	100	98	No
003B - Porter Street Outfall	3/7/2013; 8:50	25% effluent	NA	NA	NA	98	95	No
003B - Porter Street Outfall	3/7/2013; 8:50	50% effluent	NA	NA	NA	95	93	No
003B - Porter Street Outfall	3/7/2013; 8:50	100% effluent	NA	NA	NA	93	93	No

Note: All mortality occurred in the first 24 hours
NA: Not Analyzed

Analytical Results for Deicing Episodes External Outfall Sampling

Summary of Acute Toxicty Endpints				
		Test Endpoint	*Mysidopsis bahia*	*Menidia beryllina*
Discharge Limitations	Average Monthly Maximum Daily		--- *Report*	--- *Report*
001B - North Outfall**	3/2/09 18:58	48-h LC50	39.9% effluent	16.0% effluent
001B - North Outfall**	3/2/09 18:58	A-NOEC	25% effluent	6.25% effluent
001B - North Outfall**	3/2/09 18:58	TUa	2.5	6.2
001B - North Outfall**	3/3/09 7:58	48-h LC50	82.4% effluent	36.0% effluent
001B - North Outfall**	3/3/09 7:58	A-NOEC	50% effluent	25% effluent
001B - North Outfall**	3/3/09 7:58	TUa	1.2	2.8
001B - West Outfall**	12/19/08 20:00	48-h LC50	= 100% effluent	> 100% effluent
001B - West Outfall**	12/19/08 20:00	48-h NOEC	50% effluent	50% effluent
001B - West Outfall**	12/19/08 20:00	TUa	1	0.7
006B - A21**	3/3/09 8:58	48-h LC50	> 100% effluent	95.2% effluent
006B - A21**	3/3/09 8:58	A-NOEC	100% effluent	25% effluent
006B - A21**	3/3/09 8:58	TUa	0.0	1.1

Summary of Chronic Toxicty Endpoints			
		Test Endpoint	*Arbacia punctulata*
Discharge Limitations	Average Monthly Maximum Daily		--- Report
001B - North Outfall**	3/2/09 18:58	C-NOEC Fertilzation	6.25% effluent
001B - North Outfall**	3/2/09 18:58	TUc	16.0
001B - North Outfall**	3/2/09 18:58	Fertilization IC_{25}	10.0% effluent
001B - North Outfall**	3/3/09 7:58	C-NOEC Fertilzation	50% effluent
001B - North Outfall**	3/3/09 7:58	TUc	2.0
001B - North Outfall**	3/3/09 7:58	Fertilization IC_{25}	47.6% effluent
001B - North Outfall	4/1/2012 7:45-8:00	C-NOEC Fertilzation	50% *
001B - North Outfall	4/1/2012 7:45-8:00	TUc	2.0
001B - North Outfall	4/1/2012 7:45-8:00	Fertilization IC_{25}	69.80%
001B - North Outfall	3/7/2013; 11:20	C-NOEC Fertilzation	25%
001B - North Outfall	3/7/2013; 11:20	TUc	4.0
001B - North Outfall	3/7/2013; 11:20	Fertilization IC_{25}	40.8%
006B - A21**	3/3/09 8:58	C-NOEC Fertilzation	50% effluent
006B - A21**	3/3/09 8:58	TUc	2.0
006B - A21**	3/3/09 8:58	Fertilization IC_{25}	51.3% effluent
006B - A21**	3/7/2013; 10:30	C-NOEC Fertilzation	12.50%
006B - A21**	3/7/2013; 10:30	TUc	8.0
006B - A21**	3/7/2013; 10:30	Fertilization IC_{25}	18.60%
002B - West Outfall	4/1/2012 6:45-7:00	C-NOEC Fertilzation	100%
002B - West Outfall	4/1/2012 6:45-7:00	TUc	1.0
002B - West Outfall	4/1/2012 6:45-7:00	Fertilization IC_{25}	>100%
002B - West Outfall	3/7/2013; 11:40	C-NOEC Fertilzation	13%
002B - West Outfall	3/7/2013; 11:40	TUc	8.0
002B - West Outfall	3/7/2013; 11:40	Fertilization IC_{25}	14.7%
003B - Porter Street Outfall	4/1/2012 7:20-7:40	C-NOEC Fertilzation	100%*
003B - Porter Street Outfall	4/1/2012 7:20-7:40	TUc	1.0
003B - Porter Street Outfall	4/1/2012 7:20-7:40	Fertilization IC_{25}	99.21%
003B - Porter Street Outfall	3/7/2013; 8:50	C-NOEC Fertilzation	50%
003B - Porter Street Outfall	3/7/2013; 8:50	TUc	2.0
003B - Porter Street Outfall	3/7/2013; 8:50	Fertilization IC_{25}	52.0%

Notes:
A-NOEC - Acute No Observed Effects Concentration
C-NOEC - Chronic No Observed Effects Concentration
IC_{25}- Inhibition Concentration Percentage
LC_{50} - Acute concentration of effluent that is lethal to 50 percent of the exposed organisms
TU_a- Acute Toxic Units, [illegible] of the effluent dilution (x100) that causes the acute affect (LC_{50}) by the end of the exposure period.
(1) Laboratory received [illegible] samples after 36-hr hold time, however they were set up within 48 hours of collection.
(2) During the event on [illegible] DO was less than 4 mg/L in the 25% (fish), 50% (fish and invert.) and 100% (fish and invert.) effluent samples so samples were aerated. DO levels were above 4 mg/L at test completion.
*Using EPA Region I guidance, effluent concentrations exhibiting greater than 70% fertilization, flagged as statistically significantly different from the controls, will not be considered statistically different from the controls for C-NOEC reporting purposes (Reference: EPA Region I Marine Chronic Toxicity Test Procedure and Protocol, September 1996).

FIGURE 1 - OUTFALL MAP

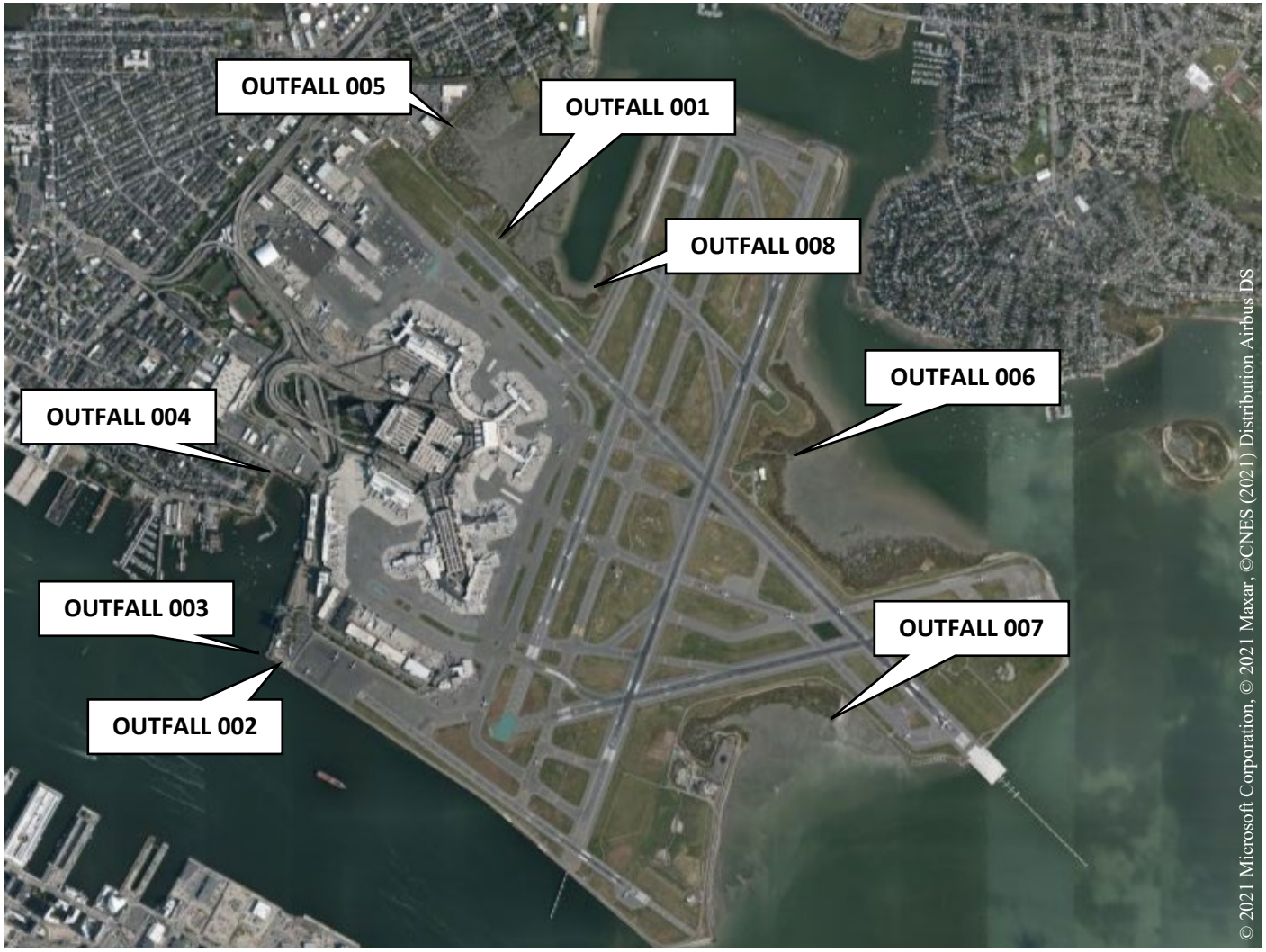


Figure 2 – Receiving Water and Major Outfall Map

Logan International Airport

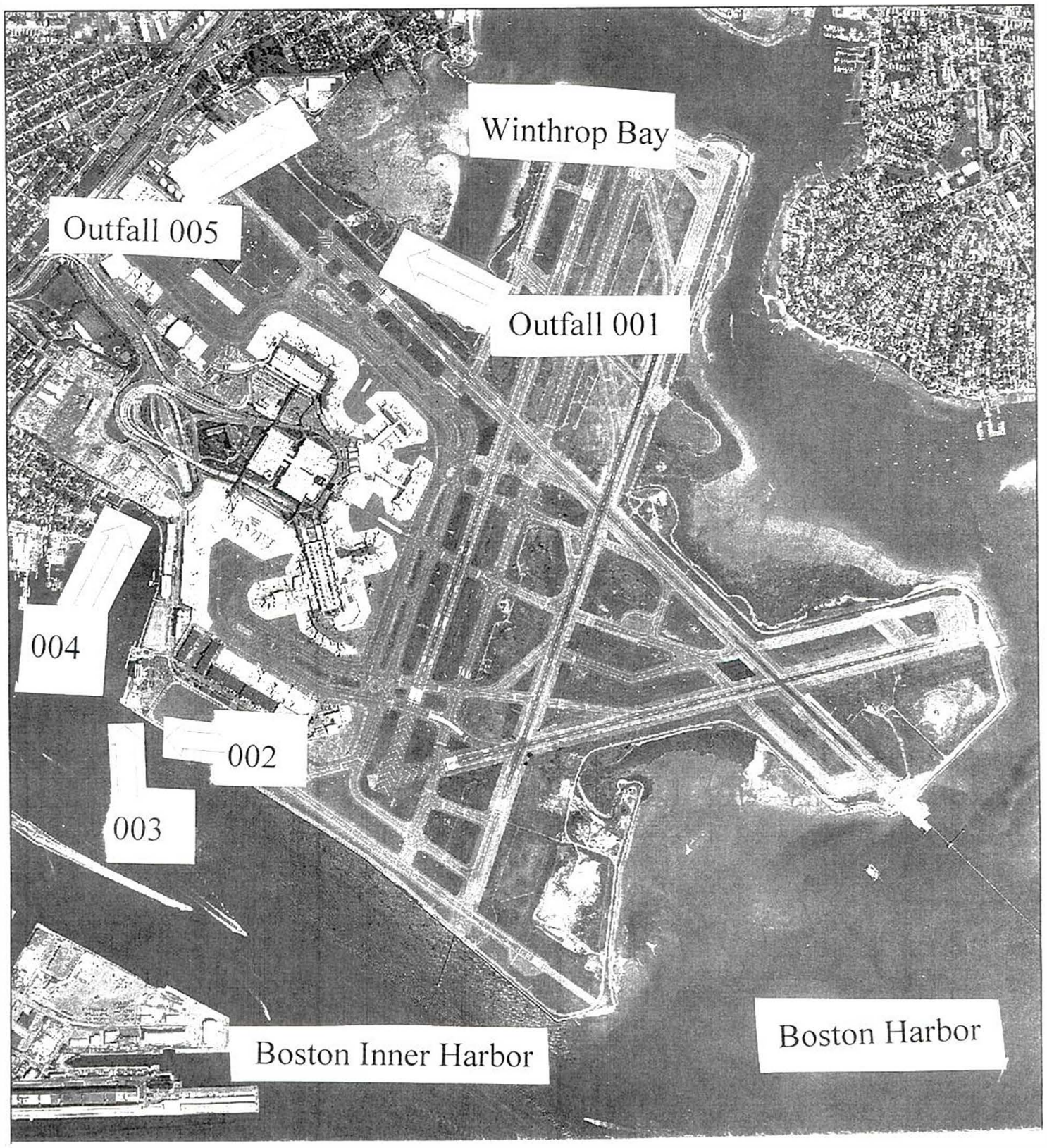
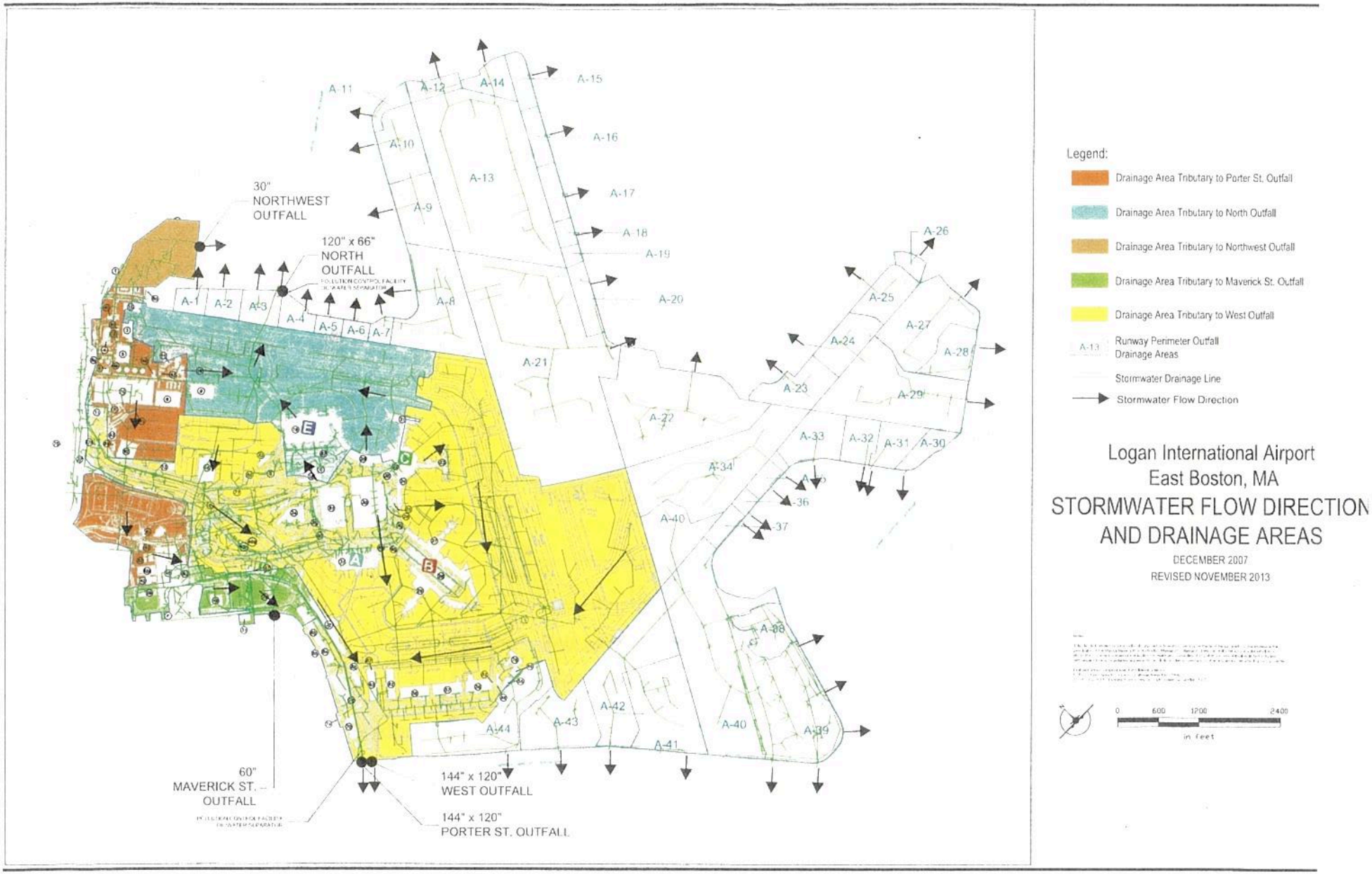


Figure 3



P:\SE\13447\79917\04DESSERVICES\02CIVIL\10CADD\35526\SWPPP\SWPPP03.DWG

Figure 4 – Fuel Farm Treatment System
Massport - Logan International Airport – MA0000787

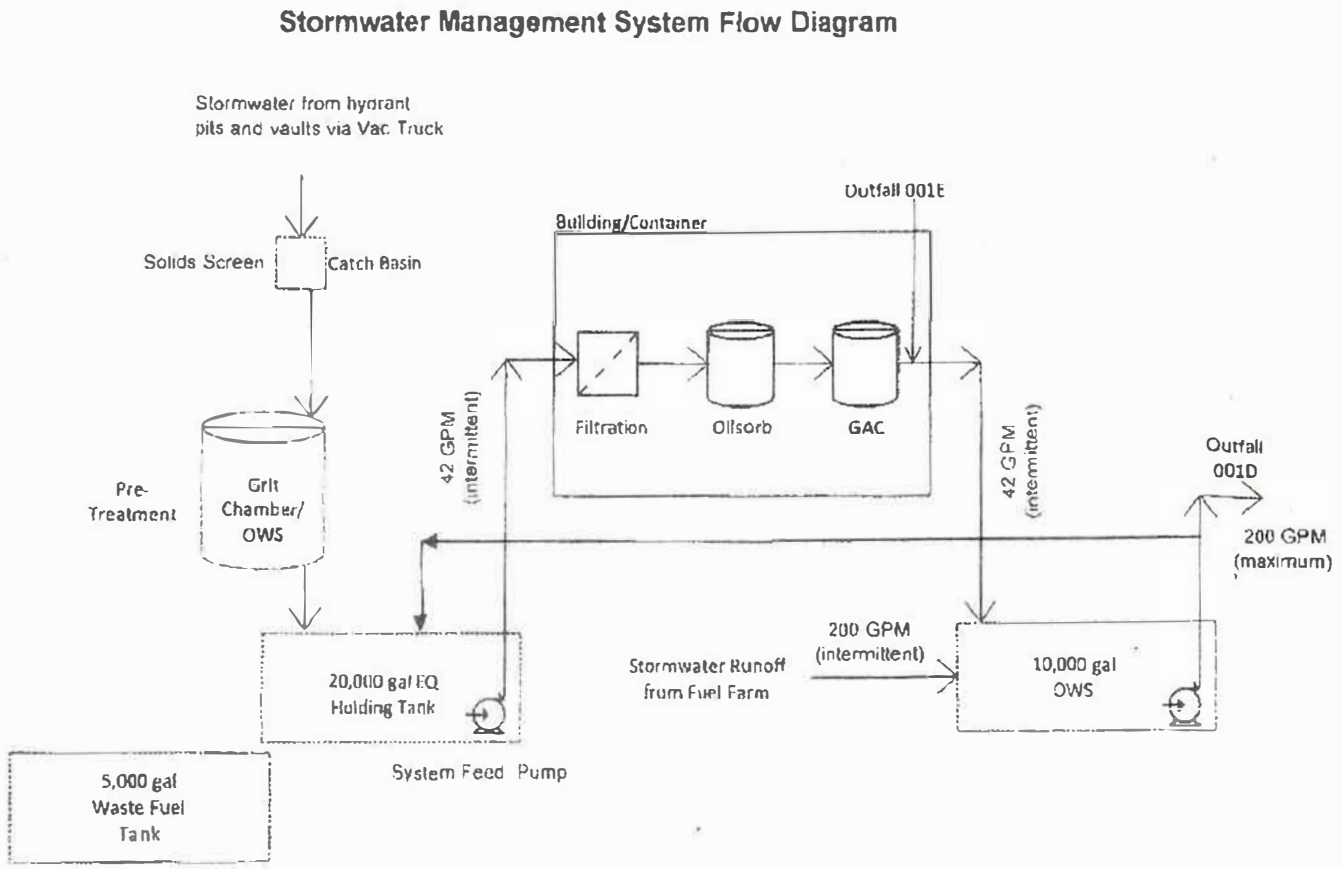
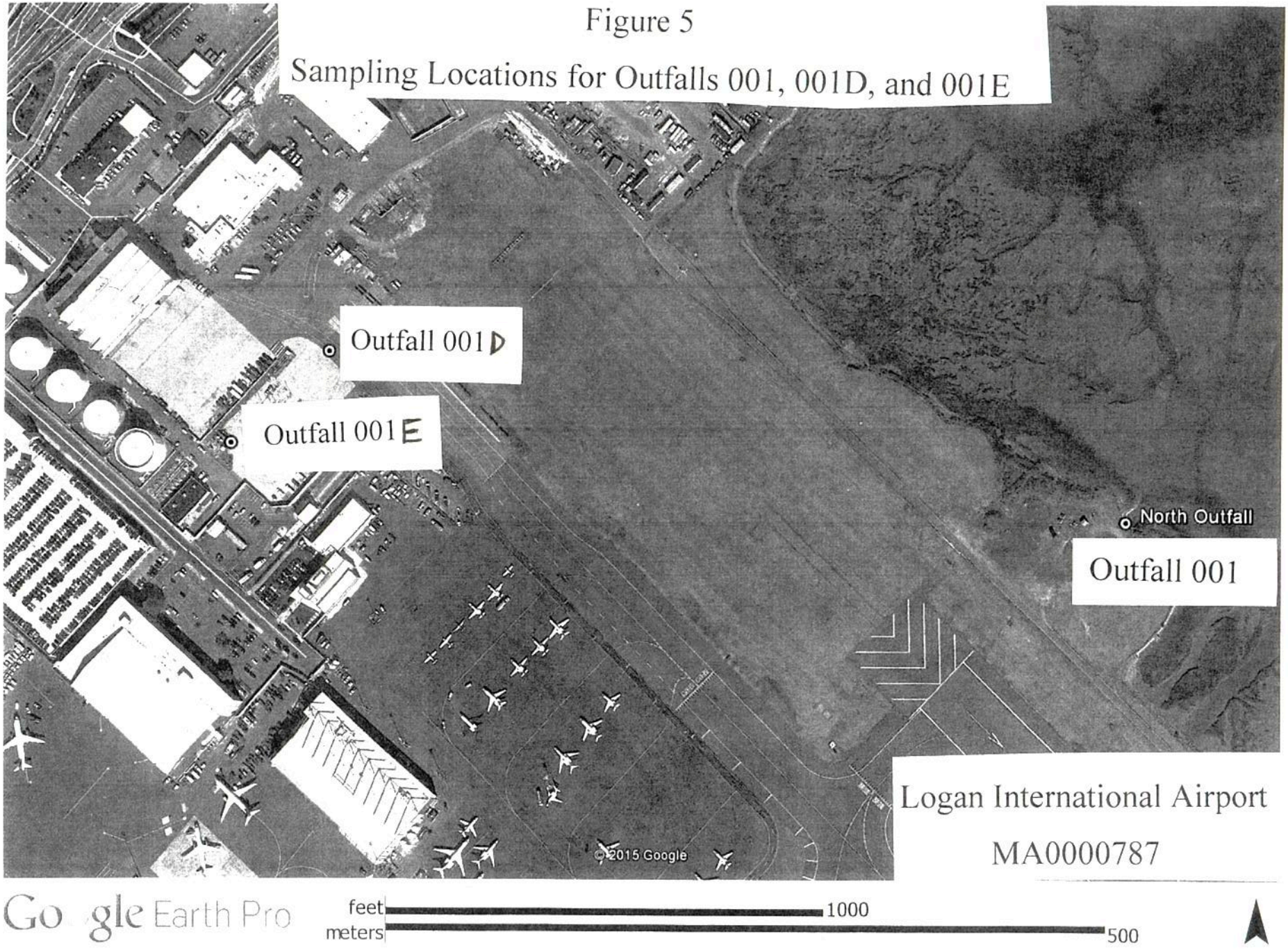


Figure 5

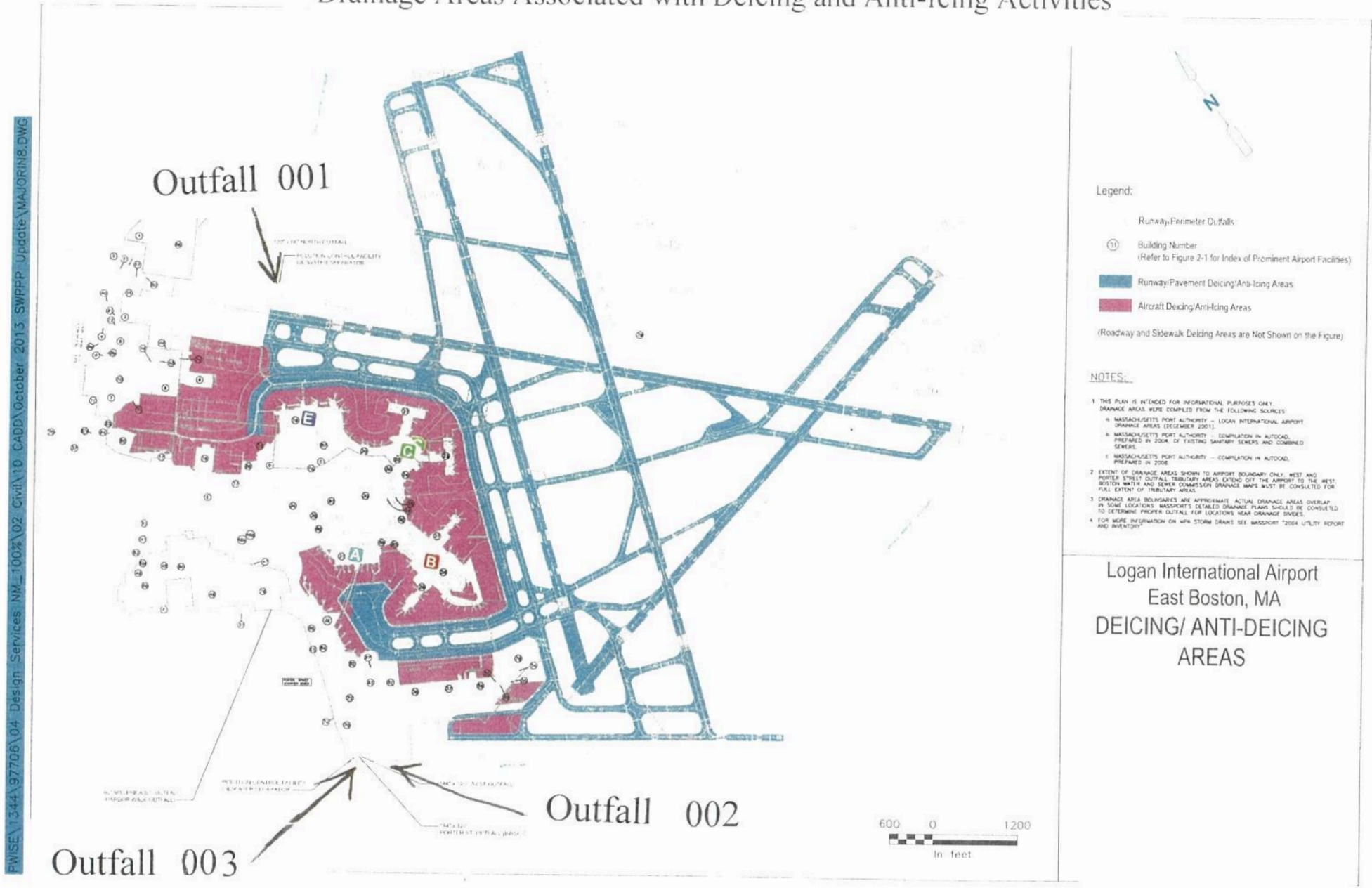
Sampling Locations for Outfalls 001, 001D, and 001E



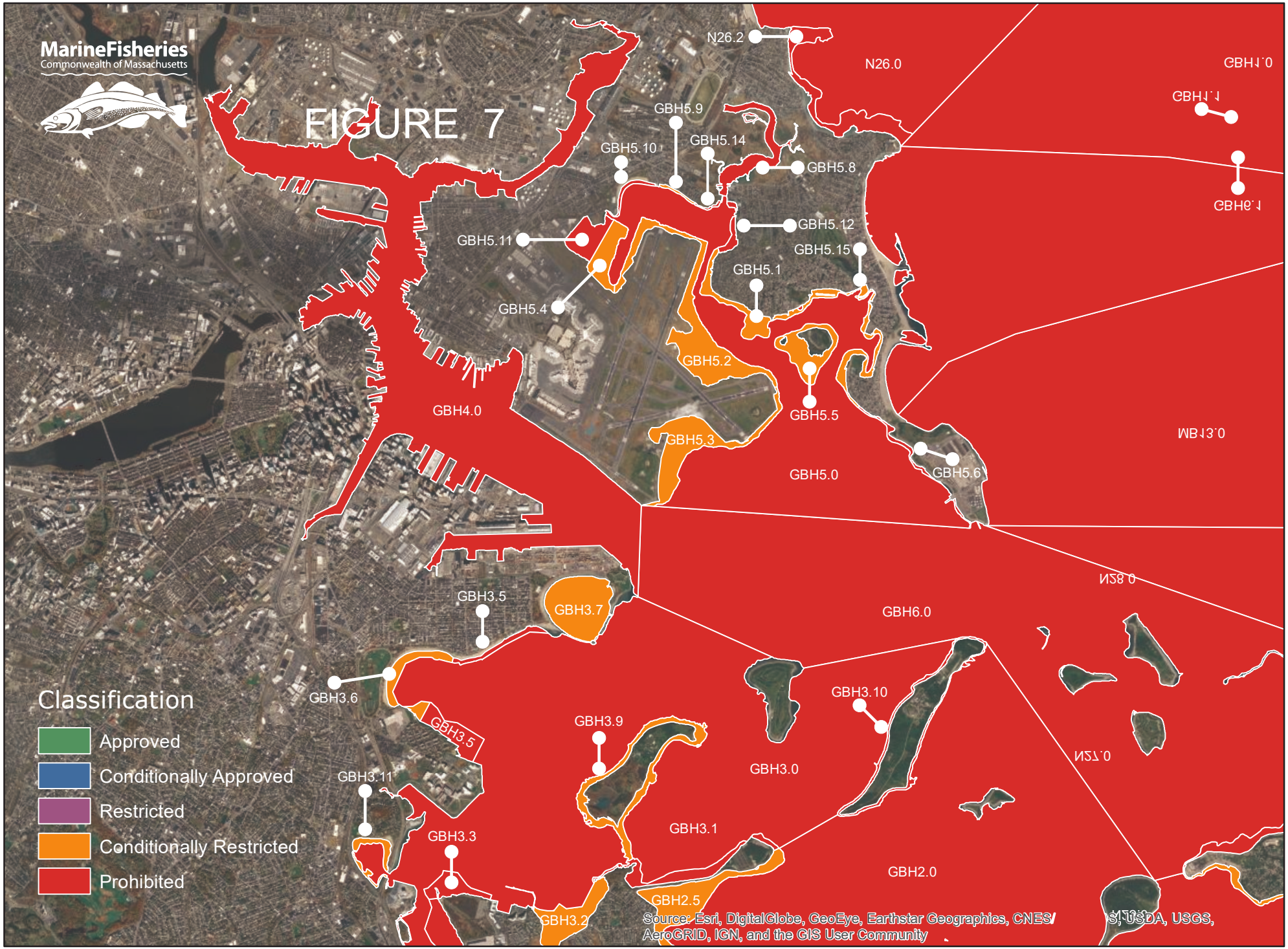
Sampling Locations 001 (North Outfall), 001D, and 001E

Figure 6

Drainage Areas Associated with Deicing and Anti-Icing Activities



P:\WISE\1344\97706\04 Design Services NM_100%\02 Civil\10 CADD\October 2013 SWPPP Update\MAJORIN8.DWG



NORTH

0 0.5 1 Miles

MASSACHUSETTS SHELLFISH AREAS IN VICINITY OF LOGAN AIRPORT

map produced: 2020-08-17

TABLE 1
STORMWATER OUTFALL LOCATIONS
LOGAN INTERNATIONAL AIRPORT

Outfall Number	Latitude	Longitude	Receiving Water
A1	42°22' 30" N	71° 01' 15" W	Winthrop Bay
A2	42°22' 30" N	71° 01' 00" W	Winthrop Bay
A3	42°22' 30" N	71° 01' 00" W	Winthrop Bay
A4	42°22' 30" N	71° 01' 00" W	Winthrop Bay
A5	42°22' 30" N	71° 01' 00" W	Winthrop Bay
A6	42°22' 15" N	71° 01' 00" W	Winthrop Bay
A7	42°22' 15" N	71° 00' 45" W	Winthrop Bay
A8	42°22' 15" N	71° 00' 45" W	Winthrop Bay
A9	42°22' 30" N	71° 00' 30" W	Winthrop Bay
A10	42°22' 45" N	71° 00' 30" W	Winthrop Bay
A11	42°22' 45" N	71° 00' 30" W	Winthrop Bay
A12	42°22' 45" N	71° 00' 15" W	Winthrop Bay
A13	42°22' 45" N	71° 00' 00" W	Winthrop Bay
A14	42°22' 45" N	71° 00' 00" W	Winthrop Bay
A15	42°22' 30" N	71° 00' 00" W	Winthrop Bay
A16	42°22' 30" N	71° 00' 00" W	Winthrop Bay
A17	42°22' 15" N	71° 00' 00" W	Winthrop Bay
A18	42°22' 15" N	71° 00' 00" W	Winthrop Bay
A19	42°22' 00" N	71° 00' 00" W	Winthrop Bay
A20	42°22' 00" N	71° 00' 15" W	Winthrop Bay
A21	42°22' 00" N	71° 00' 15" W	Winthrop Bay
A22	42° 21' 45" N	71° 00' 00" W	Winthrop Bay
A23	42° 21' 45" N	71° 00' 00" W	Winthrop Bay
A24	42° 21' 45" N	70° 59' 45" W	Winthrop Bay
A25	42° 21' 45" N	70° 50' 30" W	Winthrop Bay
A26	42° 21' 45" N	70° 59' 15" W	Boston Harbor
A27	42°22' 30" N	70° 59' 15" W	Boston Harbor
A28	42°22' 30" N	70° 59' 15" W	Boston Harbor
A29	42°22' 15" N	70° 59' 30" W	Boston Harbor
A30	42°22' 15" N	70° 59' 45" W	Boston Harbor
A31	42°22' 15" N	70° 59' 45" W	Boston Harbor
A32	42°22' 15" N	71° 00' 00" W	Boston Harbor

TABLE 1
STORMWATER OUTFALL LOCATIONS
LOGAN INTERNATIONAL AIRPORT

Sheet 2 of 2

Outfall Number	Latitude	Longitude	Receiving Water
A33	42°22' 30" N	71° 00' 00" W	Boston Harbor
A34	42°22' 30" N	71° 00' 00" W	Boston Harbor
A35	42°22' 30" N	71° 00' 00" W	Boston Harbor
A36	42°22' 30" N	71° 00' 15" W	Boston Harbor
A37	42°22' 15" N	71° 00' 15" W	Boston Harbor
A38	42° 21' 00" N	71° 00' 15" W	Boston Harbor
A39	42° 21' 00" N	71° 00' 15" W	Boston Harbor
A40	42° 21' 00" N	71° 00' 30" W	Boston Inner Harbor
A41	42° 21' 00" N	71° 01' 00" W	Boston Inner Harbor
A42	42° 21' 15" N	71° 01' 00" W	Boston Inner Harbor
A43	42° 21' 15" N	71° 01' 15" W	Boston Inner Harbor
A44	42° 21' 15" N	71° 01' 30" W	Boston Inner Harbor
001 (North Outfall)	42°22' 30" N	71° 00' 45" W	Winthrop Bay
002 (West Outfall)	42°21' 30" N	71° 01' 45" W	Boston Inner Harbor
003 (Porter Street Outfall)	42°21' 30" N	71° 01' 45" W	Boston Inner Harbor
004 (Maverick Street Outfall)	42° 21' 45" N	71° 01' 45" W	Boston Inner Harbor
005 (Northwest Outfall)	42° 22' 00" N	71° 01' 15" W	Winthrop Bay

TABLE 2
STORMWATER DRAINAGE AREAS
LOGAN INTERNATIONAL AIRPORT

Drainage Area/Outfall	Total Area[1] (acres)	Pervious Area (acres)	Impervious Area (acres)	Percent Impervious
I. AIRFIELD AREAS				
A1	2.6	2.6	0.0	0
A2	1.7	1.5	0.1	8
A3	2.5	1.6	0.9	37
A4	2.7	1.6	1.1	42
A5	2.3	1.2	1.1	46
A6	2.5	1.3	1.2	48
A7	2.6	1.4	1.3	48
A8	29.3	13.7	15.6	53
A9	15.1	4.9	10.3	68
A10	16.0	4.2	11.8	74
A11	1.6	0.6	1.0	62
A12	2.3	0.6	1.8	76
A13	85.1	57.9	27.2	32
A14	7.0	2.4	4.7	66
A15	4.0	2.0	2.0	50
A16	3.5	1.6	2.0	56
A17	4.1	1.8	2.3	57
A18	3.7	1.5	2.2	58
A19	3.2	0.9	2.3	71
A20	2.6	0.2	2.4	91
A21	123.9	68.7	55.2	45
A22	54.2	26.3	27.9	51
A23	7.4	3.2	4.2	57
A24	14.5	8.2	6.3	43
A25	9.8	3.9	5.9	61
A26	3.4	1.8	1.6	47
A27	29.5	25.0	4.6	16
A28	6.1	6.0	0.2	3
A29	41.3	29.9	11.4	28
A30	6.7	3.8	3.0	44
A31	10.5	4.1	6.5	61

TABLE 2
STORMWATER DRAINAGE AREAS
LOGAN INTERNATIONAL AIRPORT

Sheet 2 of 2

Drainage Area/Outfall	Total Area[1] (acres)	Pervious Area (acres)	Impervious Area (acres)	Percent Impervious
A32	8.2	4.1	4.2	51
A33	10.8	4.6	6.2	57
A34	62.9	34.8	28.1	45
A35	4.3	1.9	2.5	57
A36	2.3	1.0	1.3	55
A37	2.3	1.0	1.3	55
A38	13.1	12.1	1.0	8
A39	8.9	8.5	0.4	4
A40	87.1	74.1	13.0	15
A41	28.5	2.3	3.8	62
A42	32.6	8.4	10.8	56
A43	18.4	4.9	11.8	71
A44	32.9	1.5	14.4	91
Other/Direct	150.6	136.8	13.8	9
AIRFIELD TOTAL	909.9	579.9	330.1	36
II. DEVELOPED AREAS				
North Outfall (001)	152.4	22.0	130.4	86
West Outfall (002)	402.7	85.3	363.3	81
Porter St. Outfall (003)	181.7	4.7	177.0	97
Maverick St. Outfall (004)	33.9	0.8	33.1	98
Northwest Outfall (005)	23	7.6	15.4	67
DEVELOPED AREA TOTAL	839.6	120.4	719.1	86
AIRPORT TOTAL	1749.5	700.3	1049.2	60

Table 3

Industrial Activity by Outfall Drainage Area

Massport and its tenants conduct a variety of activities supporting the airport's operation. Some of the activities that occur have the potential to release pollutants to the stormwater drainage system. The following is a summary of the activities conducted in the drainage areas by Massport and its tenants, which have the potential to impact stormwater:

North Drainage Area – Outfall 001

- Aircraft Deicing/Anti-Icing
- Aircraft Fueling
- Aircraft Lavatory Service
- Aircraft Maintenance
- Aircraft Painting/Stripping
- Aircraft Storage
- Aircraft Washing
- Airside Snowmelting Activities
- Cargo Handling
- Cargo Storage/Transfer
- Chemical Storage
- Equipment Degreasing
- Equipment Washing
- Equipment Maintenance
- Equipment Storage
- Fire Fighting System Flush
- Floor Wash Down
- Food Preparation/Handling
- Fuel Storage
- Landscaping
- Lavatory Service
- Outdoor Apron Washdown
- Painting/Stripping
- Runway/Taxiway Deicing
- Runway Painting
- Runway Seal Coating
- Steam Cleaning
- Sanding
- Snow Removal
- Vehicle Fueling
- Vehicle Maintenance
- Vehicle Parking
- Vehicle Washing

Northwest Drainage Area – Outfall 005

- Equipment Degreasing
- Equipment Washing
- Equipment Maintenance
- Equipment Storage
- Fire Fighting System Flush
- Floor Wash Down
- Food Preparation/Handling
- Fuel Storage
- Green Bus Depot Activities
- Landscaping
- Lavatory Service
- Pesticide/Herbicide Usage
- Steam Cleaning
- Snow Removal
- Vehicle Maintenance
- Vehicle Painting
- Vehicle Washing

West Drainage Area – Outfall 002

- Aircraft Deicing/Anti-Icing
- Aircraft Fueling
- Aircraft Lavatory Service
- Aircraft Maintenance
- Aircraft Painting/Stripping
- Aircraft Storage
- Aircraft Washing
- Airside Snowmelting Activities
- Cargo Handling
- Cargo Storage/Transfer
- Chemical Storage
- Equipment Degreasing
- Equipment Washing
- Equipment Maintenance
- Equipment Storage
- Fire Fighting System Flush
- Fire Fighting Equipment Testing
- Floor Wash Down
- Food Preparation/Handling
- Fuel Storage
- K-9 Activities
- Landscaping
- Lavatory Service
- Outdoor Apron Washdown
- Painting/Stripping
- Pesticide/Herbicide Usage
- Potable Water System Flush
- Runway/Taxiway Deicing
- Runway Painting
- Runway Rubber Removal
- Runway Seal Coating
- Snow Removal
- Steam Cleaning
- Terminal Façade Cleaning
- Vehicle Fueling
- Vehicle Maintenance
- Vehicle Painting
- Vehicle Washing

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1 (EPA)
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MASSDEP)
COMMONWEALTH OF MASSACHUSETTS
1 WINTER STREET
BOSTON, MASSACHUSETTS 02108

EPA PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED, AND MASSDEP PUBLIC NOTICE OF EPA REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE CWA.

PUBLIC NOTICE PERIOD: **April 12, 2021 – June 11, 2021**

PUBLIC MEETING DATE: **5/10/2021**

PUBLIC HEARING DATE: **5/24/2021**

PERMIT NUMBER: **MA0000787**

PUBLIC NOTICE NUMBER: **MA-15-21**

NAME AND MAILING ADDRESS OF APPLICANT:

Massachusetts Port Authority
Environmental Management Unit
One Harborside Drive, Suite 200S
East Boston, Massachusetts 02128-2090

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Massachusetts Port Authority
Logan International Airport
East Boston, Massachusetts 02128-2090

RECEIVING WATERS AND CLASSIFICATIONS:

Boston Harbor - Class SB (MA 70-01); Boston Inner Harbor - Class SB (CSO) (MA 70-02)
Winthrop Bay - Class SB (MA 70-10)

PREPARATION OF THE DRAFT PERMIT AND EPA REQUEST FOR CWA § 401 CERTIFICATION:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Massachusetts Port Authority, which discharges stormwater associated with industrial activity from Logan International Airport. Twenty-one airport tenants, which also discharge stormwater associated with industrial activity, are designated as Co-Permittees on this Permit. The effluent limits and permit conditions imposed have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice and issue a separate Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

In addition, EPA has requested that MassDEP grant or deny certification of this Draft Permit pursuant to Section 401 of the CWA and implementing regulations. Under federal regulations governing the NPDES program at 40 Code of Federal Regulations (CFR) § 124.53(e), state certification shall contain conditions that are necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law, including any conditions more stringent than those in the Draft Permit that MassDEP finds necessary to meet these requirements. Furthermore, MassDEP may provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at https://www.epa.gov/npdes-permits/massport-logan-international-airport-npdes-permits or by contacting:

George Papadopoulos
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579
Email: papadopoulos.george@epa.gov

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC MEETING AND PUBLIC HEARING:

The Regional Administrator has determined, pursuant to 40 CFR §124.12, that a significant degree of public interest exists in the proposed permit and that a public hearing should be held to consider this permit. This notice serves to announce that a public hearing will be held. A public meeting and public hearing will be held on the following dates and times:

Public Informational Meeting:
DATE: **May 10, 2021**
TIME: 7:00 pm
LOCATION: Virtual Meeting Information will be provided on EPA's website, noted above

Public Hearing:
DATE: **May 24, 2021**
TIME: 7:00 pm
LOCATION: Virtual Meeting Information will be provided on EPA's website, noted above

The following is a summary of the procedures that will be followed at the public informational meeting:

a. The Presiding Chairperson will have the authority to open and conclude the meeting and to maintain order.
b. EPA will make a short presentation describing the NPDES permit process and the draft permit conditions, and then accept clarifying questions from the audience.
c. Formal oral comments concerning the draft permit will not be accepted at the public meeting. Formal oral comments will be accepted at the subsequent public hearing.

The following is a summary of the procedures that will be followed at the public hearing:

a. The Presiding Chairperson will have the authority to open and conclude the hearing and to maintain order.
b. Any person appearing at such a hearing may submit oral or written statements concerning the draft permit.

PUBLIC COMMENT PERIOD:

All persons, including applicants, who believe any condition of any of the Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by **June 11, 2021**, which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification, should be submitted to the EPA contact at the address or email listed above. Upon the close of the public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (i.e., the separate state permit and the CWA § 401 certification) must also submit such comments to MassDEP during the comment period for this Draft Permit. Commenters should access the following link which includes instructions within each public notice posting on how to submit such comments: https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities.

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

FINAL PERMIT DECISION:

Following the close of the comment period, the Regional Administrator will issue a final permit decision, respond to all significant comments, and notify the applicant and each person who has submitted written comments or requested notice.

KEN MORAFF, DIRECTOR
WATER DIVISION
UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY – REGION 1

LEALDON LANGLEY, DIRECTOR
DIVISION OF WATERSHED MANAGEMENT
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION