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", and the Massachusetts Clean Waters Act, as amended, (MGL Chap.21,§§26-53),

**Massachusetts Port Authority and the Co-Permittees of Logan International Airport**
**c/o MASSACHUSETTS PORT AUTHORITY**
**ENVIRONMENTAL MANAGEMENT UNIT**
**ONE HARBORSIDE DRIVE, SUITE 200S**
**EAST BOSTON, MASSACHUSETTS 02128-2909**

are authorized to discharge from all storm water Outfalls 001, 002, 003, 004 and 005 and storm water discharges A-1 through A-44 to receiving waters named:

**Boston Harbor, Boston Inner Harbor and Winthrop Bay**

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

This permit shall become effective 60 days after signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on March 1, 1978.

This permit consists of 51 pages and Attachment A – Marine Chronic Test Procedure and Protocol, Attachment B – Logan International Airport (Logan) Storm Water Co-Permittee Application, and Attachment C – Current List of Co-Permittees, in Part I, including monitoring requirements, etc., and 25 pages in Part II including General Conditions and Definitions.

Signed this 31st day of July, 2007

/S/ SIGNATURE ON FILE

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Stephen S. Perkins, Director
Office of Ecosystem Protection
Environmental Protection Agency
Region I
Boston, MA

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Glenn Haas, Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

## Outfall Nomenclature

Below is a summary of the location in the Permit where the tables of the effluent limits and monitoring requirements can be found according to the section of the Permit and the page number. For reporting purposes, each numbered outfall was given letter designations to show for what conditions the outfalls were to be sampled: A - for wet weather, B for deicing episodes, and C for dry weather. Additionally, letters were designated for the sampling of storm water from the above-ground storage tanks and fuel loading rack area (D) and the set-up tank (E) before being discharged to an internal outfall for the Outfall 001 storm water sewer system.

| Outfall Name and Number | Wet Weather | Deicing Episode | Dry Weather | ASTs, Fuel Loading Rack, and Set-up Tank |
|---|---|---|---|---|
| **North Outfall 001** | **001A** (I.A.1, page 3) | **001B** (I.A.3, page 11) | **001C** (I.A.7, page 20) | **001D & 001E** (I.A.4, page 14) |
| **West Outfall 002** | **002A** (I.A.1, page 3) | **002B** (I.A.3, page 11) | **002C** (I.A.7, page 20) | ------ |
| **Porter Street Outfall 003** | **003A** (I.A.2, page 7) | **003B** (I.A.3, page 11) | **003C** (I.A.8, page 22) | ------ |
| **Maverick Street Outfall 004** | **004A** (I.A.1, page 3) | ------ | **004C** (I.A.7, Page 20) | ------ |
| **Northwest Outfall 005** | **005A** (I.A.5, page 16) | ------ | ------ | ------ |
| **Runway/Perimeter Outfalls (A-1 through A-44) 006** | **006A** (I.A.5, page 16) | **006B** (I.A.6, page 18) | ------ | ------ |

PART I. A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - **WET WEATHER**

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee and Co-Permittees are authorized to discharge storm water associated **with industrial activity** from vehicle maintenance areas, equipment cleaning areas and deicing activities from outfalls **001A (North Outfall)**, **002A (West Outfall), and 004A (Maverick Street Outfall)**. Such discharges shall be limited as specified below and monitored by Massport as specified below:

| Effluent Characteristic | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Flow Rate, MGD [2] | Report | Report | 1/Month | Estimate |
| pH, Range, standard units [1,2] | 6.0 to 8.5 | | 1/Month | Grab |
| Oil & Grease, mg/l [3] | ---- | 15 | 1/Month | Grab |
| TSS, mg/l [3] | Report | 100 | 1/Month | Grab |
| Benzene, ug/l [3] | Report | Report | 1/Month | Grab |
| Surfactant, mg/l [3] | Report | Report | 1/Month | Grab |
| Fecal Coliform, cfu/100 ml [3] | Report | Report | 1/Month | Grab |
| Enterococcus, cfu/100 ml [3] | Report | Report | 1/Month | Grab |
| Polynuclear Aromatic Hydrocarbons (PAHs), ug/l [4] | ---- | Report Total | 1/Quarter | Grab |
| Benzo(a)anthracene | ---- | Report | 1/Quarter | Grab |
| 1) Benzo(a)pyrene | ---- | Report | 1/Quarter | Grab |
| 2) Benzo(b)fluoranthene | ---- | Report | 1/Quarter | Grab |
| 3) Benzo(k)fluoranthene | ---- | Report | 1/Quarter | Grab |
| 4) Chrysene | ---- | Report | 1/Quarter | Grab |
| 5) Dibenzo(a,h)anthracene | ---- | Report | 1/Quarter | Grab |
| 6) | | | | |

| | Effluent Characteristic | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|---|
| | | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| | Indeno(1,2,3-cd)pyrene | ---- | Report | 1/Quarter | Grab |
| 7) | Naphthalene | ---- | Report | 1/Quarter | Grab |

8)

Footnote for Table at I.A.1:

1. Required for State Certification.

2. Flow rate shall be recorded monthly by using the flow model to estimate the flow from outfalls 001, 002, and 004. The flow model shall consist of a hydraulic model of the Logan Airport drainage system, developed by Massport within 180 days from the effective date of the permit. The flow model shall be calibrated based on three months of measured rainfall depths and discharge velocities, including calibration of two storm events (greater than 0.5 inches in 24 hours) where flows at each major outfall and representative perimeter outfalls are measured and where the effects of high tides and sea water infiltration are at a minimum, to the extent practicable. In addition, the calibrated model shall be verified based on a storm event where predicted and measured flows from the outfalls shall be compared. The results of this calibration and verification of the flow model shall be reported to EPA within 180 days from the effective date of the permit. If three storm events do not occur in the necessary timeframe, the permittee may, within 180 days of the effective date of the permit, request additional time to develop the flow model. The flow model shall also be confirmed by periodic monitoring of the actual flow from the outfalls. Prior to completion of the flow model, flow shall be estimated based on the Best Professional Judgment (BPJ) of the permittee. The pH shall be monitored monthly by grab samples taken at representative locations. On a monthly basis, Massport shall report the average monthly flow value and maximum daily flow value for each of the three outfalls, in gallons per day (gpd), and the value of the pH reported as Standard Units (SU), on Discharge Monitoring Report Forms (DMRs) by the 15th of the following month. The monitoring and reporting requirements for the outfalls shall become effective upon the effective date of the permit.

3. A monthly grab sample shall be taken during wet weather conditions, if practicable, at each outfall at representative locations of the points of discharge. Wet weather conditions mean during 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 is 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, sample as soon as practicable and describe why a grab sample during the first 30 minutes was impracticable. Submit this information on or with the DMR. On a monthly basis, Massport shall report on the DMRs the maximum daily value of the testing results in milligrams per liter (mg/l), except for benzene which shall be reported in micrograms per liter (ug/l), and fecal coliform and enterococcus which shall be reported in colony forming units per 100 milliliters (cfu/100 ml), by the 15th of the following month. 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.

4. A quarterly grab sample shall be taken during wet weather conditions, if practicable, at each outfall at representative locations of the points of discharge. Wet weather conditions mean during 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 is

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, sample as soon as practicable and describe why a grab sample during the first 30 minutes was impracticable. Submit this information on or with the DMR. On a quarterly basis, Massport shall report on the DMRs a sum of the maximum daily values of the eight PAHs in milligrams per liter (ug/l) detected, by the 15th of the following month at the end of a quarter (Example: Report by April 15 for the January through March quarter). Additionally, Massport shall report on the DMRs, separately for each outfall, the maximum daily value for each of the eight PAHs. 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.

**WET WEATHER**

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee and Co-Permittees are authorized to discharge storm water associated **with industrial activity** from vehicle maintenance areas, equipment cleaning areas and deicing activities from **Outfall 003A (Porter Street Outfall)**. Such discharges shall be limited as specified below and monitored by Massport as specified below:

| Effluent Characteristic [5] | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Flow Rate, MGD [7] | Report | Report | 1/Month | Estimate |
| pH, Range, standard units [6,7] | 6.0 – 8.5 | | 1/Month | Grab |
| Oil & Grease, mg/l [8] | ---- | Report | 1/Month | Grab |
| TSS, mg/l [8] | Report | Report | 1/Month | Grab |
| Benzene, ug/l [8] | Report | Report | 1/Month | Grab |
| Surfactant, mg/l [8] | Report | Report | 1/Month | Grab |
| Fecal Coliform, cfu/100 ml [8] | Report | Report | 1/Month | Grab |
| Enterococcus, cfu/100 ml [8] | Report | Report | 1/Month | Grab |
| Polynuclear Aromatic Hydrocarbons (PAHs), ug/l [9] | ---- | Report Total | 1/Quarter | Grab |
| Benzo(a)anthracene | ---- | Report | 1/Quarter | Grab |
| 1) Benzo(a)pyrene | ---- | Report | 1/Quarter | Grab |
| 2) Benzo(b)fluoranthene | ---- | Report | 1/Quarter | Grab |
| 3) Benzo(k)fluoranthene | ---- | Report | 1/Quarter | Grab |
| 4) Chrysene | ---- | Report | 1/Quarter | Grab |
| 5) Dibenzo(a,h)anthracene | ---- | Report | 1/Quarter | Grab |
| 6) | | | | |

| Effluent Characteristic [5] | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Indeno(1,2,3-cd)pyrene | ---- | Report | 1/Quarter | Grab |
| 7) Naphthalene | ---- | Report | 1/Quarter | Grab |

8)

Footnote for Table at I.A.2:

5. Massport shall monitor the storm water for Outfall 003A for the listed pollutants at representative sampling locations and report the average of all representative sampling location results on the Discharge Monitoring Reports (DMRs). Massport shall develop sampling locations to get a representative sample of the Porter Street discharge area in accordance with the Porter Street Monitoring Plan that will be developed according to Section C.1, below, within 180 days of the effective date of this Permit. The monitoring and reporting requirements shall become effective in 180 days from the effective date of the permit to allow for development and implementation of the Porter Street Monitoring Plan.

6. Required for State Certification.

7. Flow rate shall be recorded monthly by using the flow model to estimate the flow from the outfall. The flow model shall consist of a hydraulic model of the Logan Airport drainage system, developed by Massport within 180 days from the effective date of the permit. The flow model shall be confirmed by periodic monitoring of the actual flow from the outfalls. Refer to Part I.A.1 of the permit, Footnote 2, for a complete discussion of the flow model. Prior to completion of the flow model, flow shall be estimated based on the BPJ of the permittee. The pH shall be monitored by grab samples taken at representative locations. On a monthly basis, Massport shall report the average monthly flow value and maximum daily flow value in gallons per day (gpd), and the value of the pH (the average value of all of the representative sampling location results), reported as Standard Units (SU), on DMRs by the 15th of the following month.

8. A monthly grab sample shall be taken during wet weather conditions, if practicable, at the representative locations established pursuant to the Porter Street Monitoring Plan. Wet weather conditions mean during 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 is 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, sample as soon as practicable and describe why a grab sample during the first 30 minutes was impracticable. Submit this information on or with the DMR. On a monthly basis, Massport shall report on the DMRs the average monthly value (an average of all locations, except O&G, which does not require average monthly sampling) and a maximum daily value (the highest of the maximum values from all locations) of the testing results in milligrams per liter (mg/l), except for benzene which shall be reported in micrograms per liter (ug/l), and fecal coliform and enterococcus which shall be reported in colony forming units per 100 milliliters (cfu/100 ml), by the 15th of the following month. 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.

9. A quarterly grab sample shall be taken during wet weather conditions, if practicable, from the monitoring locations developed in the Porter Street Monitoring Plan. Wet weather conditions mean during 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 is 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, sample as soon as practicable and describe why a grab sample during the first 30 minutes was impracticable. Submit this information on or with the DMR. On a quarterly basis, Massport shall report on the DMRs the maximum daily value (the highest of the maximum values from all locations) for all PAHs analyzed for (sum of all PAHs analyzed for) in milligrams per liter (ug/l), by the 15th of the following month at the end of a quarter (Example: Report by April 15 for the January through March quarter). Additionally, Massport shall report on the DMRs the maximum daily value for each of the eight PAHs. 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.

**DEICING EPISODES**

3. During the period beginning on the effective date and lasting through the expiration date, the Permittee and Co-Permittees are authorized to discharge storm water associated **with industrial activity** from plane and pavement/runway deicing activities during a wet weather deicing episode from outfalls **001B (North Outfall)**, **002B (West Outfall), and Outfall 003B**. Such discharges shall be monitored by Massport as specified below:

**Monitor October through April only (Icing Season):**

| Effluent Characteristic | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Ethylene Glycol, Total, mg/l [10] | ----- | Report | 2/Deicing Season (DS) | Grab |
| Propylene Glycol, Total, mg/l [10] | ----- | Report | 2/DS | Grab |
| BOD5, mg/l [10] | ----- | Report | 2/DS | Grab |
| COD, mg/l [10] | ----- | Report | 2/DS | Grab |
| Total Ammonia Nitrogen, mg/l of N [10] | ----- | Report | 2/DS | Grab |
| Nonylphenol, ug/l [10] | ----- | Report | 2/DS | Grab |
| Tolyltriazole, ug/l [10] | ----- | Report | 2/DS | Grab |
| Whole Effluent Toxicity (WET) [11] | ---- | Report | 1st & 3rd Year DS | Grab |

Footnotes for Table at I.A.3:

10. Massport shall gather a grab sample at outfalls 001B, 002B, and 003B twice each deicing season during separate deicing episodes. The deicing season is from October of a year to April of the following year. Samples shall be taken during a wet weather deicing episode, if practicable. A wet weather deicing episode is defined as when deicing agents are being used on passenger planes during a storm event that produces greater than 0.1 inches of precipitation in magnitude (or the equivalent in snow fall on a mass basis) and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rain fall) storm event. The 72-hour interval is 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, sample as soon as practicable and describe why a grab sample during the first 30 minutes was impracticable. Submit this information on or with the DMR. Massport shall report on the DMRs the results of the two monitoring events on or before May 15 after each deicing season. 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. The monitoring and reporting requirements for Outfall 003B shall become effective in 180 days from the effective date of this permit to allow for the development and implementation of the Porter Street Monitoring Plan. The monitoring and reporting requirements for Outfalls 001B and 002B shall become effective upon the effective date of this permit. For each parameter, Massport shall report the maximum results for each outfall sampled over the two deicing episodes as the maximum daily on the DMRs for Outfalls 001B and 002B, respectively. For Outfall 003B, Massport shall report the highest maximum value from all sampling locations and from all deicing episodes on the DMRs. Copies of the laboratory results from the two deicing episodes per deicing season shall be maintained onsite for six years.

11. Massport shall perform marine chronic and modified acute toxicity tests at Outfalls 001B, 002B, and 003B once during the first year and once during the third year of the term of this Permit. The grab samples shall be gathered during a wet weather deicing episode, if practicable. A wet weather deicing episode is defined as when deicing agents are being used on passenger planes during a storm event that produces greater than 0.1 inches of precipitation in magnitude (or the equivalent in snow fall on a mass basis) and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rain fall) storm event. The 72-hour interval is 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, sample as soon as practicable and describe why a grab sample during the first 30 minutes was impracticable. Submit this information on or with the DMR. The test results must establish a chronic no observed effects concentration (C-NOEC) and acute concentration of effluent that is lethal to 50 percent of the exposed organisms ($LC_{50}$). The testing shall be performed in accordance with test procedures and protocols in Permit Attachment A, which specifies the Inland Silverside (Menidia beryllina) Larval Growth and Survival Test and the Sea Urchin (Arabacia punctulata) 1 Hour Fertilization Test. Massport shall submit the Whole Effluent Toxicity lab report and report the C-NOEC and the $LC_{50}$ from the results of WET testing using The Toxicity Test Summary Sheet (Attachment F of the EPA-Region I NPDES Permit Program Instructions for the Discharge Monitoring Report Forms). The report and summary sheet shall be submitted by the 15$^{th}$ of the month

following the WET test. Massport shall sample and report the results separately for Outfalls 001B, 002B, and 003B.

**INTERNAL OUTFALLS FOR OUTFALL 001**

4. During the period beginning on the effective date and lasting through the expiration date, the Permittee and Co-Permittees are authorized to discharge storm water associated **with industrial activity** from the Aboveground Storage Tanks berms, other bermed areas in the fuel farm area, and Fuel Loading Rack Area, and storm water from hydrant vaults and pits stored in the Set-up Tank, from outfalls **001D (North Outfall for Aboveground Storage Tanks and Fuel Loading Rack Area commingled with the treated water from the Set-up Tank) and 001E (North Outfall for Set-up Tank)**. Such discharges shall be limited and monitored by Swissport, or any future Co-Permittee operating the Centralized Fuel Farm, as specified below:

| Effluent Characteristic | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Quantity, Gallons [12] | Report | Report | 1/Month | Estimate |
| pH, Range, standard units [12] | Report | Report | 1/Month | Grab |
| Oil & Grease, mg/l [12] | ---- | 15 | 1/Month | Grab |
| TSS, mg/l [12] | Report | 100 | 1/Month | Grab |
| Benzene, ug/l [12] | Report | Report | 1/Month | Grab |

Footnote for Table at I.A.4:

12. The water from the hydrant vaults and pits which collects in the Set-up tank shall be sampled, as Outfall 001E, after treatment through a unit consisting of an oil/water separator, a 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 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 from the hydrant vaults and pits via the Set-up Tank and pass through the oil/water separator located at the fuel farm, as Outfall 001D. This water shall be sampled after treatment with the oil/water separator at the fuel farm, but prior to commingling with any other water passing through Outfall 001. A monthly grab sample shall be taken during discharge, at a location representative of the discharge after treatment, as described above for each outfall. On a monthly basis, Swissport (or any future Co-Permittee operating the Centralized Fuel Farm) shall report on the DMRs the maximum daily value of the testing results by the 15th of the following month. 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. An estimate of the average monthly and maximum daily amount of storm water released to Outfall 001 shall be reported in gallons. The DMRs shall be submitted to Massport for inclusion with the other DMRs required by the permit for submittal to EPA. The monitoring and reporting requirements shall become effective upon the effective date of the permit.

**WET WEATHER**

5. During the period beginning on the effective date and lasting through the expiration date, the Permittee and Co-Permittees are authorized to discharge storm water associated **with industrial activity and from pavement and runway activities** to outfall **005A (Northwest Outfall**) and the 44 runway/perimeter outfalls. Representative samples shall be collected from outfall 005A and from 15 percent of outfalls A-1 to A-44. The results of the sampling of 15% of outfalls A-1 to A-44 are to be reported as outfall **006A**. Such discharges shall be monitored by Massport as specified below:

| Effluent Characteristic | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Flow, MGD [13] | Report | Report | 1/Quarter | Estimated |
| pH, Range, standard units [13] | Report | Report | 1/Quarter | Grab |
| Oil & Grease, mg/l [13] | Report | Report | 1/Quarter | Grab |
| TSS, mg/l [13] | Report | Report | 1/Quarter | Grab |
| Benzene, ug/l [13] | Report | Report | 1/Quarter | Grab |

Footnote for Table at I.A.5:

13. On a quarterly basis Massport shall sample the Northwest Outfall 005A and at least 15 percent (a minimum of seven) of the 44 runway/perimeter storm water outfalls (A-1 through A-44) during wet weather conditions, if practicable. Wet weather conditions mean that the samples must be taken during 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 is 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, sample as soon as practicable and describe why a grab sample during the first 30 minutes was impracticable. Submit this information on or with the DMR. The minimum of seven outfalls to be sampled shall be chosen in accordance with the criteria established in the Runway/Perimeter Storm Water Outfall Sampling Plan (Perimeter Sampling Plan) in accordance with Section I.B.13, below, of the Storm Water Pollution Prevention Plan, in order to provide representative samples of the discharge. The Perimeter Sampling Plan shall be completed within 180 days of the effective date of this Permit. The monitoring and reporting requirements for Outfall 006A shall become effective in 180 days after the effective date of this Permit to allow for the development and implementation of the Perimeter Sampling Plan. The monitoring and reporting requirements for Outfall 005A shall become effective upon the effective date of the permit. Massport shall report on DMRs the results of the quarterly monitoring by the 15th of the following month at the end of a quarter (Example: Report by April 15 for the January through March quarter). 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. Massport shall report the results of the monitoring at Outfall 005A on one DMR, and on a separate DMR, the average value of the minimum of seven outfalls sampled as average monthly and highest value reported as maximum daily for each quarter. Flow shall be estimated quarterly by using the flow model to estimate the flow from the outfalls. The flow model shall consist of a hydraulic model of the Logan Airport drainage system, developed by Massport 180 days from the effective date of the permit. The flow model shall be confirmed by periodic monitoring of the actual flow from the outfalls. Refer to Part I.A.1 of the permit, Footnote 2, for a complete discussion of the flow model. Prior to completion of the flow model, flow shall be estimated based on the BPJ of the permittee.

**DEICING EPISODES**

6. During the period beginning on the effective date and lasting through the expiration date, the Permittee and Co-Permittees are authorized to discharge storm water associated **with industrial activity** from pavement and runway deicing and aircraft deicing. During wet weather deicing episodes, representative samples shall be collected from 15 percent of outfalls A-1 to A-44. The results of the sampling are to be reported as outfall **006B**. Such discharges shall be monitored by Massport as specified below:

**Monitor October through April only (Deicing Season):**

| Effluent Characteristic | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Ethylene Glycol, Total, mg/l [14] | Report | Report | 2/Deicing Season (DS) | Grab |
| Propylene Glycol, Total, mg/l [14] | Report | Report | 2/DS | Grab |
| BOD5, mg/l [14] | Report | Report | 2/DS | Grab |
| COD, mg/l [14] | Report | Report | 2/DS | Grab |
| Total Ammonia Nitrogen, mg/l of N [14] | Report | Report | 2/DS | Grab |
| Nonylphenol, ug/l [14] | Report | Report | 2/DS | Grab |
| Tolyltriazole, ug/l [14] | Report | Report | 2/DS | Grab |

Footnote for Table at I.A.6:

14. Massport shall sample 15 percent or seven outfalls of the 44 runway/perimeter storm water outfalls (A-1 through A-44) twice each deicing season during separate deicing episodes. At least seven outfalls are to be sampled during a deicing episode chosen in accordance with the criteria established in the Runway/Perimeter Storm Water Outfall Sampling Plan (Perimeter Sampling Plan). Samples shall be taken during a wet weather deicing episode, if practicable, as previously defined in Footnote 10, above. Massport shall report on the DMRs the results of the two monitoring events on or before May 15 after the deicing season. 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. These monitoring and reporting requirements shall become effective in 180 days after the effective date of this Permit to allow for the development and implementation of the Perimeter Sampling Plan. For each parameter Massport shall report the average results of the outfalls sampled over the two deicing episodes as the average monthly result, and the maximum results from any of the outfalls as the maximum daily result, as Outfall 006B. Copies of the laboratory results from the two deicing episodes per deicing season shall be maintained onsite for six years.

**DRY WEATHER**

7. During the period beginning on the effective date and lasting through the expiration date, the Permittee and Co-Permittees are authorized to discharge storm water associated **with industrial activity** from vehicle maintenance areas, equipment cleaning areas and deicing activities from outfalls **001C (North Outfall)**, **002C (West Outfall) and Outfall 004C (Maverick Street Outfall)**. Such discharges shall be limited and monitored by Massport as specified below:

| Effluent Characteristic | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Oil & Grease, mg/l [15] | ---- | 15 | 1/Month | Grab |
| TSS, mg/l [15] | Report | 100 | 1/Month | Grab |
| Benzene, ug/l [15] | Report | Report | 1/Month | Grab |
| Fecal Coliform [3], cfu/100 ml [15] | Report | Report | 1/Month | Grab |
| Enterococcus [3], cfu/100 ml [15] | Report | Report | 1/Month | Grab |
| Surfactant, mg/l [15] | Report | Report | 1/Month | Grab |

Footnotes for Table at I.A.7:

15. Monthly grab samples shall be taken during dry weather conditions, if practicable, at representative locations of the points of discharge. Dry weather conditions mean that the samples must be taken at least 72 hours after the previously measurable (greater than 0.1 inch rain fall) storm event. The 72-hour interval is 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 during the sampling period. On a monthly basis, Massport shall report on the DMRs the maximum daily value of the testing results in milligrams per liter (mg/l), except for benzene which shall be reported in micrograms per liter (ug/l), by the 15th of the following month. 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. The monitoring and reporting requirements shall become effective upon the effective date of the permit.

**DRY WEATHER**

8. During the period beginning on the effective date and lasting through the expiration date, the Permittee and Co-Permittees are authorized to discharge storm water associated **with industrial activity** from vehicle maintenance areas, equipment cleaning areas and deicing activities from outfall **Outfall 003C (Porter Street Outfall)**. Such discharges shall be monitored by Massport as specified below:

| Effluent Characteristic [16] | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Average Monthly | Maximum Daily | Measurement Frequency | Sample Type |
| Oil & Grease, mg/l [17] | ---- | Report | 1/Month | Grab |
| TSS, mg/l [17] | Report | Report | 1/Month | Grab |
| Benzene, ug/l [17] | Report | Report | 1/Month | Grab |
| Fecal Coliform, cfu/100 ml [17] | Report | Report | 1/Month | Grab |
| Enterococcus, cfu/100 ml [17] | Report | Report | 1/Month | Grab |
| Surfactant, mg/l [17] | Report | Report | 1/Month | Grab |

Footnotes for Table at I.A.8:

16. Massport shall monitor the storm water for the listed pollutants and report the average monthly and maximum daily results on Discharge Monitoring Reports (DMRs). Massport shall develop sampling locations to get a representative sample of the Porter Street discharge area in accordance with the Porter Street Monitoring Plan. Massport shall develop the Porter Street Monitoring Plan within 180 days of the effective date of this Permit in accordance with Section C.1, below. The monitoring and reporting requirements shall become effective in 180 days after the effective date of this Permit to allow for the development and implementation of the Porter Street Monitoring Plan.

17. Monthly grab samples shall be taken during dry weather conditions, if practicable, at each of the sampling locations. Dry weather conditions mean that the samples must be taken at least 72 hours after the previously measurable (greater than 0.1 inch rain fall) storm event. The 72-hour interval is 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 during the sampling period. On a monthly basis, Massport shall report on DMRs the monthly average value (an average of all locations, except O&G, which does not require average monthly sampling) and maximum daily value (the highest of the maximum values from all locations) of the testing results in milligrams per liter (mg/l), except for benzene which shall be reported in micrograms per liter (ug/l), and fecal coliform and enterococcus which shall be reported in colony forming units per 100 milliliters (cfu/100 ml), by the 15th of the following month. 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.

**Part I.A (Continued) Conditions for All Outfalls**

9. Massport, as the owner and operator of the airport facility and the storm water sewer system, is ultimately responsible for the discharges from its storm water sewer system to waters of the United States (60 FR 51103, Sept. 29, 1995).

10. For the outfalls with monitoring requirements for Nonylphenol as specified above, Massport 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 the outfalls with monitoring requirements for Tolytriazole, Massport shall use a test method capable of achieving a minimum level (ML) of ≥1 mg/L Tolytriazole.

11. For the outfalls with pH limits as specified above, the pH of any effluent shall not be less than 6.0 nor greater than 8.5 at any time.

12. The discharges shall not cause objectionable discoloration of the receiving waters.

13. Any effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

14. All procedures implemented pursuant to the permit shall be performed consistently with FAA requirements and considerations of flight safety.

15. The results of sampling for any parameter above its required frequency must also be reported, in accordance with 40 C.F.R. § 122.41(l)(4)(ii).

16. This permit shall be modified, or revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

    (1) contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or

    (2) controls any pollutant not limited by this permit.

    If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the Act.

17. All existing manufacturing, commercial, mining, and silvi-cultural 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) One hundred micrograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(3) Five (5) 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).

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) Five hundred micrograms per liter (500 ug/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (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).

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.

18. Toxics Control

a. The Permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.

b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

19. Numerical Effluent Limitations for Toxics

EPA or MassDEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as appropriate, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (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 C.F.R. Part 122. Additionally, under the discretion of EPA and MassDEP, a toxicity reduction evaluation (TRE)

may be required, as appropriate, in place of effluent limitations, in the event that the permittee is unable to explain the finding of a toxicological impact. Also, under the discretion of EPA and MassDEP, a Toxicity Identification Evaluation (TIE) may be required as a component of the TRE, as appropriate, in order to characterize and identify the cause(s) of toxicity.

20. Massport shall make the results of its monitoring available on its web site and provide a copy of each report (including all environmental reports) to the Boston Public Health Commission, City of Boston Environment Department, and the Winthrop Town Manager's office (see contact information below). Additionally, Massport shall notify the Boston Public Health Commission, City of Boston Environment Department, and the Winthrop Town Manager's office of any noncompliance which may endanger health or the environment. Any information shall be provided orally to the municipalities within 24 hours from the time the permittee becomes aware of the circumstances. A written submission to the municipalities shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission 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 (based on reporting requirements to EPA in Part II Standard Conditions).

Boston Public Health Commission
Environmental Hazards Program
1010 Massachusetts Avenue
Boston, MA 02118
Phone: (617) 534-5965
Fax: (617) 534-9559

and

Environment Department
City Hall Plaza
Boston, MA 02201
Phone: (617) 635-3850
Fax: (617) 635-3435

and

Winthrop Town Manager's Office
Town Hall
1 Metcalf Square
Winthrop, MA 02152
Phone: (617) 846-1077
Fax: (617) 846-5458

## B. STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

1. SWPPP Development - Massport shall develop a Storm Water Pollution Prevention Plan (SWPPP) for all sources of water pollutants generated at Logan International Airport and discharged to Boston Harbor, Boston Inner Harbor or Winthrop Bay. The SWPPP shall include a general section for the control of all sources of water pollutants and four additional discrete sections for each major source of pollutants: 1) deicing and anti-icing chemical sources, 2) potential bacteria sources, 3) fuel and oil sources, and 4) rubber removal sources. Pursuant to the SWPPP, BMPs shall be designed and implemented so as to meet the applicable Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology (BAT/BCT) standards required by the Clean Water Act 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 a water quality standard. Massport shall complete the SWPPP and distribute the SWPPP to the Co-Permittees **within 90 days from the effective date of the final Permit**.

2. Co-Permittees & Other Tenants

   Co-Permittees: Many tenants and contractors (often referred to as "fixed-base operators") operating at Logan have been named as "Co-Permittees" due to the storm water discharges associated with their industrial activities. 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). A company meets the definition of a Co-Permittee if the company performs industrial activities at an air transportation facility, such as Logan International Airport (Logan), classified under Standard Industrial Classifications (SIC) 45 that have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations (see 40 C.F.R. § 122.26(b)(14)(viii)). Furthermore, a Co-Permittee includes a company that performs industrial activities at an air transportation facility as defined in the NPDES Storm Water Multi-Sector General Permit for Industrial Activities (see 65 FR 64745, Oct. 30, 2000 and 70 FR 72116, Dec. 1, 2005). For air transportation companies the industrial activities include "servicing, repairing, or maintaining aircraft and ground vehicles; equipment cleaning and maintenance (including vehicle and equipment rehabilitation mechanical repairs, painting, fueling, and lubrication); and deicing/anti-icing operations" (Proposed 2006 MSGP, Part 4, Subsection S at p. 134, referenced by 70 FR 72116, see also http://www.epa.gov/npdes/stormwater). A Co-Permittee also includes a company that performs an activity at Logan that EPA has determined can contribute to a violation of a water quality standard (see 40 C.F.R. § 122.26(a)(v)), as it has for companies handling aircraft lavatory waste or any other sanitary waste devices not directly piped to a "Publicly Owned Treatment Works."

   Each Co-Permittee has filled out a Logan International Airport (Logan) Storm Water Co-Permittee Application (SWCPA)(See Attachment B for a blank copy of the SWCPA). The SWCPA required the Co-Permittee to supply 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. Each Co-Permittee was required to designate the industrial activities it performs at its leased property at Logan and all other industrial activities it performs elsewhere on Logan property. A

responsible official was required to sign the SWCPA for the Co-Permittee.

Each Co-Permittee shall develop a SWPPP that is consistent with the Massport SWPPP and which meets the CWA standards set out in Part I.B.1 of this permit, above, **within 180 days from the effective date of the final Permit**. The SWPPP for a Co-Permittee shall include a general section for the control of all sources of water pollutants generated by the Co-Permittee and discrete sections for each major source of pollutants if generated by the Co-Permittee: (1) deicing and anti-icing chemical sources, (2) potential bacteria sources, and (3) fuel and oil sources. Each Co-Permittee shall submit its SWPPP to Massport for approval.

Attachment C to this permit includes the signed copies of the SWCPAs. This Permit requires Massport to maintain a current list of the Co-Permittees at Logan and each Co-Permittee's contact for environmental issues. When a new Co-Permittee begins to operate at Logan or a Co-Permittee ceases to operate at Logan, Massport shall notify in writing the EPA Region I, Director of the Office of Ecosystem Protection and follow the change in ownership or operational control requirements of 40 C.F.R. § 122.63(d). The Massport notification to EPA shall be submitted prior to the date a new Co-Permittee begins operating and no more than 30 days following when an existing Co-Permittee ceases operating at Logan and shall include a revised Attachment C and a signed copy of the SWCPA for each new Co-Permittee.

Massport shall require any new Co-Permittee to develop a SWPPP consistent with its SWPPP and which meets the requirements of this final permit within 90 days of submission of the SWCPA. Massport shall keep a copy of the most recent SWPPP including copies of all the Co-Permittees SWPPPs at Massport's Environmental Department offices at Logan and shall make it available upon request to any representative of EPA or MassDEP.

Other Tenants: Other tenants at the airport, such as car rental and food preparation establishments, which are not defined separately as having storm water discharges associated with industrial activity under 40 C.F.R. § 122.26(b)(14) must also be addressed in the SWPPP. EPA and MassDEP require Massport to work out private agreements through contracts to ensure that the SWPPP for Logan addresses storm water contamination from these types of tenants (60 FR 51104, Sept. 29, 1995).

3. SWPPP Certification - Massport shall maintain, update and assure the proper implementation of its SWPPP and all the Co-Permittee's SWPPPs. With respect to the SWPPP, Massport is responsible for its own activities, each Co-Permittee is responsible for its 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 Plan and amend the SWPPP to reflect any changes. Massport shall be required to provide an annual report that includes the proper certification to EPA and the MassDEP documenting that the previous year's inspections and maintenance activities were conducted, results recorded, records maintained, and that Massport is in compliance with the SWPPP. The report with the proper certification shall be signed in accordance with the requirements identified in 40 C.F.R. §122.22 and a copy of the certification will be sent each year to EPA and MassDEP **within 90 days of the annual anniversary of the effective date of the permit**. Massport shall obtain certifications (meeting the same requirements as described above for Massport) from the Co-Permittees for their industrial activities and submit all the

originally signed certifications to EPA and a copy of the certifications to MassDEP.

4. SWPPP Objectives - The SWPPP shall focus on two major objectives: (1) to identify sources of pollution potentially affecting the quality of the water discharged at the airport's outfalls including, but not limited to, storm water, process water, and waste water associated with activities performed throughout the airport; and (2) to ensure implementation of measures to minimize and control pollutants in storm water, waste water and process water discharges associated with activities performed throughout the airport, so as to meet the CWA standards set out in Part I.B.1 of this permit.

   The SWPPP for Massport and the Co-Permittees shall address all sources of pollutants at or near their locations of operation that have the potential to drain to the storm water 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) planes are fueled, (4) solid wastes and raw materials with the potential to leak are stored, (5) solid wastes and raw materials are stored inside and have a potential to spill and flow to inside floor drains that drain to the storm water system or to the outside, (6) automotive maintenance and cleaning activities occur, (7) airplane maintenance activities occur, (8) deicing chemicals are spread on tarmac or outside, (9) maintenance of the runways to remove rubber particles to improve the surface friction levels occurs, (10) sewer connections to the storm water drainage system are identified, (11) planes lavatory wastes and other lavatory wastes are removed and transported, (12) food or food wastes are stored that potentially attract birds and animals, and (13) birds 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, so as to meet the CWA standards set out in Part I.B.1 of this permit. Massport shall designate an Environmental Representative that will be responsible for developing and implementing the facility wide SWPPP. Each Co-Permittee listed in Attachment C shall designate an Environmental Representative responsible for developing the SWPPP required for the Co-Permittee's facility and its activities. Massport shall follow these four steps: (1) form a team of qualified environmental airport personnel who will be responsible for preparing the SWPPP and assisting Massport's Environmental Representative responsible in implementing the SWPPP; (2) 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 storm water sewer system.

   Massport and the Co-Permittees shall develop management practices that use pollution prevention approaches to control the discharge of water pollutants. Two classes of management practices are generally employed at industrial facilities: 1) a pollution control program that implement practices such as good housekeeping, employee training, and spill response and prevention procedures, and 2) management practices that address containment, mitigation, and cleanup.

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

   a. 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. Storm Water Management Controls
      vi. Site Inspection
      vii. Consistency with Other Plans
      viii. Amending the SWPPP
   b. SWPPP for Identifying and Reducing Deicing and Anti-Icing Sources
   c. Re-evaluation of SWPPP
   d. SWPPP for Identifying and Reducing Potential Bacteria Sources
   e. SWPPP for Identifying and Reducing Fuel and Oil Sources
   f. SWPPP for Minimizing and Reducing Rubber Removal Sources

6. Details of the SWPPP

   a. Pollution Prevention Team

      As a first step in the process of developing and implementing a facility wide SWPPP, Massport shall identify a team of individuals that includes a representative from each Co-Permittee. The team shall be responsible for developing the SWPPP and assisting the Massport Environmental Representative in its implementation. When selecting members of the team, the Environmental Representative 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.

   b. Description of the Facility Regarding Potential Pollution Sources

      The SWPPP shall describe activities, materials, and physical features of the facility that may contribute significant amounts of pollutants to storm water runoff or, during periods of dry weather, result in pollutant discharges through the separate storm sewers or storm water drainage systems that drain the facility. This assessment of storm water pollution risk will 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.

   c. 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 storm water drainage, an indication of the types of discharges contained in the drainage areas of the outfalls, structural features that control pollutants in runoff,[1] surface water bodies (including wetlands), places where significant materials[2] are exposed to rainfall and runoff, and locations of major spills and leaks that occurred in the past 3 years prior to the effective date of this final Permit. The map also must show the locations where the following activities take place: (1) chemicals or fuels are stored, (2) deicing and anti-icing chemicals are applied to airplanes, (3) planes are fueled, (4) solid wastes and raw materials with the potential to leak are stored, (5) solid wastes and raw materials are stored inside and have a potential to spill and flow to inside floor drains that drain to the storm water system, (6) automotive maintenance and cleaning activities occur, (7) airplane maintenance activities occur, and (8) deicing chemicals are spread on tarmac. For areas of the facility that generate storm water discharges with a reasonable potential to contain significant amounts of pollutants, the map must indicate the probable direction of storm water 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.

d. Description of Potential Pollutant Sources

The SWPPP must provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants draining from the facility. The description must 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 boundaries of the facility;

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1 Nonstructural features such as grass swales and vegetative buffer strips also should be shown.

2 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 EPCRA Section 313; fertilizers; pesticides; and waste products, such as ashes, slag, and sludge that have the potential to be released with storm water discharges. (See 40 C.F.R. § 122.26(b)(8)).

ii. An estimate of the overall runoff coefficient for the site, determined by an acceptable method, such as area weighting;

iii. A narrative description of significant materials that have been treated, stored or disposed of in a manner to allow exposure to storm water between the time of three years prior to the issuance of this permit to the present; method of on-site storage or disposal; materials management practices employed to minimize contact of these materials with storm water runoff between the time of three years prior to the issuance of this permit and the present; materials loading and access areas; the location and description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and description of any treatment the storm water receives;

iv. A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at the facility three years prior to the effective date of this permit to the present;

v. A list of any pollutants limited in effluent guidelines to which the facility is subject under 40 C.F.R. Subchapter N, any pollutants listed on the NPDES permit to discharge process waste water, and any information required under 40 C.F.R. §§ 122.21(g)(iii)-(v);

vi. For each area of the facility that generates storm water discharges with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an estimate of the types of pollutants, which are likely to be present in storm water;

vii. A summary of existing sampling data describing pollutants in storm water discharges from the facility; and

viii. A list of any non-storm water discharges, except discharges from fire fighting activities, that are known or are reasonably expected to be present at the site.

e. Storm Water Management Controls

Massport must develop a description of storm water management controls appropriate for an airport and implement such controls, so as to meet the CWA standards set out in part I.B.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 storm water management controls must address the following minimum components, including a schedule for implementing such controls:

i. Pollution Prevention Team - The SWPPP must identify a specific individual(s) from Massport and each Co-Permittees as members of a team that are responsible for developing the SWPPP and assisting the Massport Environmental Representative in

its implementation, maintenance, and revision. The SWPPP must clearly identify the responsibilities of each team member. 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 the Logan that contribute pollutants to storm water discharges associated with industrial activity. The SWPPP must include an inventory of the types of materials handled. Each of the following must be evaluated for the reasonable potential for contributing pollutants to runoff: (1) chemicals or fuels are stored, (2) deicing and anti-icing chemicals are applied to airplanes, (3) planes are fueled, (4) solid wastes and raw materials with the potential to leak are stored, (5) solid wastes and raw materials are stored inside and have with a potential to spill and flow to inside floor drains that drain to the storm water system, (6) automotive maintenance and cleaning activities occur, (7) airplane maintenance activities occur, (8) deicing chemicals are spread on tarmac or outside, (9) sewer connections to the storm water drainage system are identified, (10) planes lavatory wastes are removed and transported, (11) food or food wastes are stored that potentially attract birds and animals, (12) birds flock, and (13) maintenance of runways to remove rubber particles to improve the surface friction levels occurs. Factors to consider include the toxicity of chemicals; quantity of chemicals used, produced, or discharged; the likelihood of contact with storm water, and the history of significant leaks or spills of toxic or hazardous pollutants.

iii. Preventative Maintenance - A preventative maintenance program must involve inspections and maintenance of storm water management devices (i.e. oil/water separators, catch basins, track mats) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters. No power washing in outdoor areas shall occur. All wash water that leads to storm water drainage must be reclaimed and properly disposed. This section of the permit excludes wash water from detergent-free power washing activities that are not associated with airplane or ground support equipment related maintenance.

iv. Good Housekeeping - The SWPPP shall address good housekeeping, which requires the maintenance of a clean orderly facility.

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 storm water 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 nearby storm water discharges shall be tested for pollutants contained in the material spilled, in the event that the spill has reached the storm water drain, within 24 hours from the spill as directed by the EPA or the MassDEP during the clean up. Massport is responsible for the sampling and analysis of the storm drain discharge.

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

vii. Sediment and Erosion Prevention - The SWPPP must identify areas which, due to topography, activities, or factors, have a high potential for significant soil erosion and identify measures to limit erosion.

viii. Employee Training - Employee training programs must inform personnel responsible for implementing activities identified in the SWPPP, or otherwise responsible for storm water 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 (at a minimum annually).

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 quarterly monitoring at the seven out of 44 outfalls by the runways and perimeter of the airport, the discharge at each of the 44 outfalls shall be inspected annually during wet weather conditions, as previously defined above in Footnote 3 of Part I.A.1, and the person performing the inspection shall estimate the flow rate of the water being discharged using BPJ. 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. Records of inspections must be maintained for six years.

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

f. 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 storm water 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 the inspection. Records documenting significant observations made during the site inspection must be retained as part of the SWPPP for six years.

g. Consistency with Other Plans - Storm water management controls may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the CWA or Best Management Practices (BMP) Programs otherwise required by an NPDES permit and may incorporate any part of such plans into the SWPPP by reference.

h. Amending the SWPPP - Massport and the Co-Permittees shall immediately amend the SWPPP whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to Boston Harbor; 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 storm water discharges.

7. SWPPP for Identifying and Reducing Deicing and Anti-icing Sources

Massport and Co-Permittees that store, handle or apply deicing and/or anti-icing compounds[3] at Logan International Airport shall develop a Storm Water Pollution Prevention Plan for Deicing and Anti-icing Chemicals (DAC). The Plan shall include the following information:

a. Potential Pollution Sources - Each permittee/Co-Permittee must maintain a record of the types of deicing chemicals (including the Material Safety Data Sheets [MSDS]) 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 chemicals, not just glycols and urea, because large quantities of these other chemicals can still have an adverse impact on receiving waters. Co-Permittees that conduct deicing operations must provide a copy of the above information to the airport authority (Massport) for inclusion in any comprehensive airport SWPPPs.[4]

b. Source Reduction - Consider alternatives to the use of urea and glycol-based deicing chemicals to reduce the aggregate amount of deicing chemicals used and/or lessen the environmental impact. Chemical options to replace ethylene glycol, propylene glycol and urea include: potassium acetate; magnesium acetate; calcium acetate; anhydrous sodium acetate.[5]

c. Runway Deicing - Operations: Evaluate, at a minimum, whether over-application of deicing chemicals occurs by analyzing application rates and adjusting as necessary, consistent with considerations of flight safety. Also, consider these 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]

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3 "Deicing" will generally be used to imply 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.

4 MSGP 2000, Part 6.S.5.2
5 MSGP 2000, Part 6.S.5.3.6
6 MSGP 2000, Part 6.S.5.3.6.1

d. Aircraft Deicing - Operations: Determine whether excessive application of deicing chemicals occurs and adjust as necessary, consistent with flight safety. EPA intends for this evaluation to be carried out by the personnel most familiar with the particular aircraft and flight operations in question (vice an outside entity such as the airport authority). Consider using alternative deicing/anti-icing agents as well as containment measures for all applied chemicals. Also consider these BMP options (or their equivalents) for reducing deicing fluid use: forced-air deicing systems, computer controlled fixed-gantry systems, infrared technology, hot water, varying glycol content to air temperature, enclosed-basket deicing trucks, mechanical methods, solar radiation, hangar storage, aircraft covers, thermal blankets for MD 80s and DC 9s. Also consider using ice-detection systems and airport traffic flow strategies and departure slot allocation systems.[7]

e. Management of Runoff - Where deicing operations occur, describe and implement a program to control or manage contaminated runoff to reduce the amount of pollutants being discharged from the site. Consider these BMP options (or their equivalents): a dedicated deicing facility with a runoff collection/recovery system; using vacuum/collection trucks; storing contaminated storm water/deicing fluids in tanks and releasing controlled amounts to a publicly owned treatment works; collecting contaminated runoff in a wet pond for biochemical decomposition (be aware of attracting wildlife that may prove hazardous to flight operations); and directing runoff into vegetative swales or other infiltration measures. 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 storm water contamination. Used deicing fluid should be recycled whenever possible.[8]

f. Inspections - Specify the frequency of inspections in the SWPPP. At a minimum, conduct inspections monthly during the deicing season (e.g., October through April for most mid-latitude airports). If deicing is necessary before or after this period, expand the monthly inspections to include all months during which deicing chemicals may be used. Also, if significantly or deleteriously large quantities of deicing chemicals are being spilled or discharged, or if water quality impacts have been reported, increase the frequency of inspections to weekly until such time as the chemical spills/discharges or impacts are reduced to acceptable levels. The Director may specifically require increased inspections and SWPPP reevaluations as necessary.[9]

g. Comprehensive Site Compliance Evaluation - Using only qualified personnel, conduct annual site compliance evaluations during periods of actual deicing operations, if possible. If not practicable during deicing or the weather is too inclement, conduct the evaluations when deicing operations are likely to occur and the materials and equipment for deicing are in place.[10]

8. <u>Re-evaluation of SWPPP</u>

7 MSGP 2000, Part 6.S.5.3.6.2
8 MSGP 2000, Part 6.S.5.3.7
9 MSGP 2000, Part 6.S.5.4
10 MSGP 2000, Part 6.S.5.5

a. The SWPPP for deicing shall be re-evaluated after completion of the Water Quality Study described in Part I.D, below, to determine if supplemental BMPs are necessary in order to protect the water quality of the receiving waters. EPA shall be notified of any additions to the SWPPP or any decision not to make additions. The time frame for re-evaluation shall be defined within the SWPPP.

b. Upon finalization of any Airport Deicing Effluent Limitation Guidelines (ELGs), the permittee and Co-Permittees are required to supplement the BMPs developed pursuant to the SWPPP, as necessary, to be consistent with the newly issued ELGs.

9. SWPPP for Identifying and Reducing Potential Sources of Bacteria

a. Purpose/Goal

Massport, with the cooperation of the Co-Permittees, will develop and implement a comprehensive plan to identify and eliminate dry and wet weather illicit discharges to its separate storm water sewer system. The plan will focus on the sanitary sewer system as the primary source of contamination. This storm water pollution prevention plan will rely primarily on visual observations of the storm water sewer and sanitary sewer systems including, television inspection of the sanitary sewer system and dye testing of the sewer pipes and 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 bacteria sources.

Massport may also employ additional investigative techniques, including indicator bacteria sampling, fluorescent whitening agents, and genetic microbial source tracking, to identify potential sources of bacteria from the sanitary sewer system to the storm water sewer system.
Massport shall perform these investigations of its sanitary sewer system to assure bacteria sources are not entering the storm water sewer system. Results of these investigations will be used to determine if modifications of the SWPPP are warranted.

b. Mapping

The goal of the mapping is the comprehensive depiction of key infrastructure and identification of potential cross-connections between the sanitary sewer and storm water sewer systems and potential illicit sanitary sewer discharges. The required number, scale and detail of the maps will be appropriate to facilitate a rapid understanding of the system by Massport and regulators (EPA and MassDEP), serve as a planning tool for the implementation and phasing of investigations, and demonstrate the extent of complete and planned investigations and corrective actions. Mapping will be updated as necessary to reflect newly discovered information, corrections or modifications to the sewer systems, and progress made.

c. Drainage Tributary Area Prioritization

Drainage areas will be prioritized for investigative work according to the following criteria:

i. Areas suspected to have potential problems (documented by past investigations, indicator bacteria monitoring, or anecdotal information),

ii. Storm water outfall discharges to sensitive or critical waters including shellfish beds or other sensitive resource areas,

iii. Areas with previously observed surcharge conditions,

iv. Remaining areas will be prioritized through an outfall screening and ranking process.

d. Drainage Tributary Area Investigations

i. Co-Permittee Cooperation and Outreach Program

Massport shall notify each Co-Permittees, affected tenants or fixed-base operators of the scope and schedule of investigative work, and potential need to gain access to their buildings and property to inspect infrastructure and building plumbing.

ii. Sewer and Drain Manhole Inspections

Storm water and sanitary sewer manholes and appurtenant structures (e.g., catch basins) will be opened and inspected. Data to be collected will include pipe material, rim to invert measurements, condition assessment of manholes and pipes, visual evidence of sewer contamination in the storm water sewer infrastructure, and digital photographs. Inspections will also confirm the connectivity of the systems and will field verify the mapping.

iii. Sanitary Sewer System Cleaning and Television Inspection

The sanitary sewer system will be cleaned and inspected via closed-circuit television (CCTV) equipment. Any deficiencies that may contribute to cross-connections will be catalogued and prioritized for repair based on relative significance. Other defects and structural problems will also be recorded.

iv. Sanitary Sewer System Dye Flooding

Dye flooding of the sewer system will occur in areas where visual and CCTV inspections indicate potential for exfiltration into a storm drain.

v. Building Plumbing Dye Testing

All plumbing connections from buildings will be dye tested. Building inspections will also be used to identify and document additional plumbing that may not appear on current plans. Sewers and drains will be monitored during the dye tests and improper connections will be noted.

e. 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 the investigation results, and appropriate rehabilitation solutions will be implemented. Following removal of a cross-connection, illicit discharge, or other rehabilitation, dye flooding and testing will be used to verify the correction.

f. Work Progression and Schedule

A master schedule will be developed at the start of the program and will be continually updated based on results of field investigation and rehabilitations. Massport shall report the results of the program to EPA, MassDEP, Massachusetts Coastal Zone Management (CZM), and Massachusetts Division of Marine Fisheries (DMF) on an annual basis. The prioritization of the investigative program will be based on various factors, including storm water bacteria results and access issues. Unless a written extension is granted by the EPA and MassDEP, the master schedule must include milestones leading to the identification of all illicit connections, and removal of all identified illicit connections, to be completed within the five year term of this permit. Massport may obtain a written extension from the EPA and MassDEP only if it establishes that the completion of all such work within the five year term of this permit is not feasible. In such event, the EPA and MassDEP will establish in writing a new schedule which will be no longer than necessary to be feasible. The need to accelerate current plans or to expend additional funds will not be sufficient to establish that a five year schedule is not feasible.

In each drainage area, the work will begin with comprehensive mapping followed by manhole inspections, sewer cleaning and CCTV inspections, and dyed water flooding of the sewer system. Dye tests of the building plumbing will be conducted concurrently with the sewer cleaning and television inspections. A flow-chart of the investigative procedure is presented in Figure 1.

The sanitary sewer system inspection and cleaning will progress in a downstream manner through the system's drainage area. Deficiencies in the sanitary sewer system will be documented. Sewer rehabilitation, cross-connection removal and operational improvements will be implemented. Concurrently, the inspection and cleaning operations will proceed downstream. From the information gathered during the inspection and cleaning operation, repairs will be scheduled based on the severity of the deficiency. Massport shall assure that funding for the repairs will be available.

g. Program Evaluation

The progress of the investigation will be evaluated by tracking metrics such as:

i. Number/Percentage of manholes/structures inspected,
ii. Number/Percentage of buildings inspected/dye tested,
iii. Footage/Percentage of pipe cleaned and inspected by CCTV,

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.

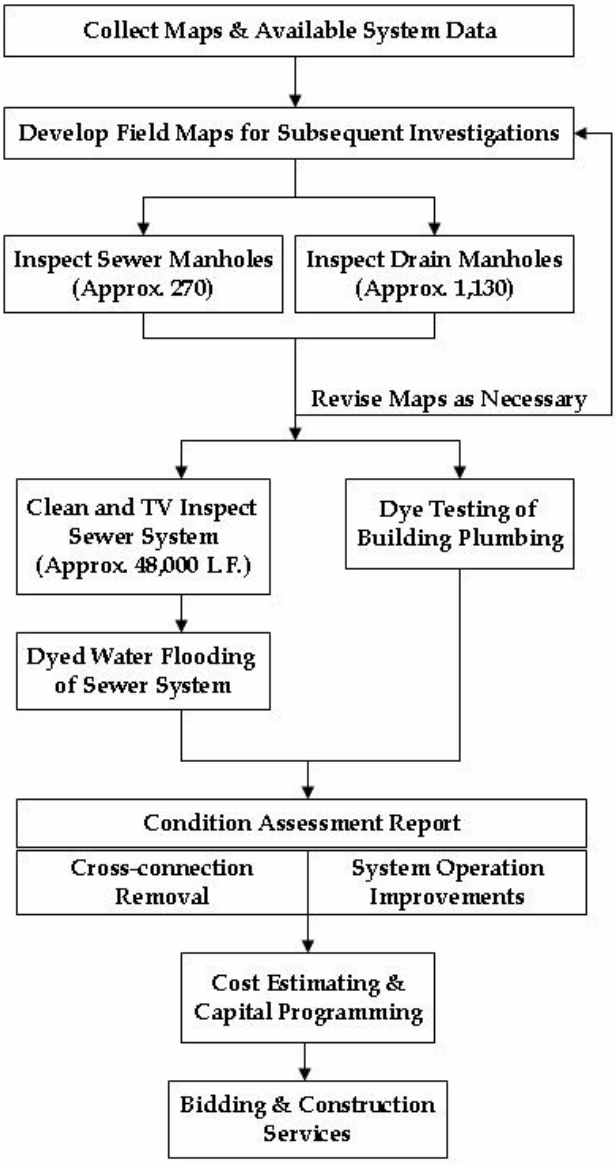
Collect Maps & Available System Data
Develop Field Maps for Subsequent Investigations
Inspect Sewer Manholes (Approx. 270)
Inspect Drain Manholes (Approx. 1,130)
Revise Maps as Necessary
Clean and TV Inspect Sewer System (Approx. 48,000 L.F.)
Dye Testing of Building Plumbing
Dyed Water Flooding of Sewer System
Condition Assessment Report
Cross-connection Removal
System Operation Improvements
Cost Estimating & Capital Programming
Bidding & Construction Services

**FIGURE 1**

10. SWPPP for Identifying and Reducing Discharges from Fuel and Oil Sources

a. Above Ground Storage Tanks at Fuel Farm

The accumulated storm water in the large AST bunkers combines with the flow from the fuel loading rack and the treated flow from the hydrant vaults and pits (Outfall 001E) for treatment by the oil/water separator at the fuel farm to discharge as Outfall 001D. The water shall be sampled at a location representative of the discharge after treatment with the oil/water separator at the fuel farm, but prior to commingling with the other discharges through Outfall 001. The discharge shall meet the effluent limits in accordance with Part I.A.4, above, for Outfall 001D.

b. SPCC Plan

This section of the SWPPP can reference and must be consistent with the Spill Prevention Control and Countermeasures (SPCC) Plan for ASTs. 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.

c. Minimum Requirements for ASTs

The SWPPP shall state at a minimum that all spilled or leaked JET-A (or any fuel) from the ASTs shall be removed from the secondary containment system as quickly as practical and in all cases within 24 hours. The secondary containment system (the bermed area around the ASTs) must be thoroughly cleaned to remove any residual contamination.

d. Underground Storage Tanks

At the fuel farm, a 15,000-gallon underground storage tank (UST) is referred to as the set-up tank. The storm water from the hydrant vaults and pits of the centralized fueling system is stored in the 15,000 gallon UST Set-up Tank. The water from the hydrant vaults and pits which collects in the Set-up tank shall be sampled, as Outfall 001E, after treatment through a unit consisting of an oil/water separator, a 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 for treatment through an additional oil/water separator and subsequent discharge to Outfall 001. The discharge shall meet the effluent limits in accordance with Part I.A.4, above, for Outfall 001E.

Additionally, storm water accumulates at the loading racks that are available for trucks to fill their tankers for remote fueling of aircraft. Additionally, two gasoline pumps and two diesel fuel pumps adjacent to the loading racks are available for fueling on-site vehicles. 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. Any additional USTs which provide fueling shall require the following BMPs, as defined below.

e. Minimum Requirements for USTs and Loading Rack Area at the Fuel Farm and any other

facilities providing fueling

Best Management practices shall include, at a minimum the following:

i. All USTs shall be installed, inspected, maintained, tested, and monitored in accordance with local, state and federal requirements.

ii. Divert storm water run-on away from fueling areas through the use of grade control, berms, or curbing to avoid storm water 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 tankers.

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.

ix. The following procedures shall be followed when disposing the storm water collected at the Fueling Racks:

Storm water that accumulates at the loading racks at the fuel farm shall be sampled after commingling with the treated water from the hydrant vaults and pits via the Set-Up tank and after subsequent treatment by the oil/water separator at the fuel farm, prior to commingling with other discharges through Outfall 001, in accordance with the effluent limitations in Part I.A.4 of this permit, above, for Outfall 001D.

f. 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 documenting any quantity of JET-A (or 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 the Environmental Representative of Massport to assure consistency between each Co-Permittee.

Each operator of a piece 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 2 hours to the proper authorities in accordance with local, state and federal requirements.

Additionally, the managers for a Co-Permittee shall immediately alert the Environmental Representative for Massport, after notifying the proper authorities, upon learning of a major spill.

Each operator of aircraft fueling equipment shall be trained to operate the equipment in accordance with the SOP **within 30 days** from Massport approving the SOP or within 30 days from being hired. All SOPs shall be developed, and approved by Massport, **within 180 days of the effective date of the permit.**

Each operator of aircraft fueling equipment shall have biennial refresher training of the SOP requirements. Documentation of all training shall be retained for a minimum of six years and made available upon inspection by EPA or MassDEP.

g. Best Management Practices for Fueling Practices

The following best management practices (BMPs) are designed to prevent storm water 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 operations); using dry cleanup methods; and collecting storm water 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 storm water or storm water 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.

vi. Massport shall post information, such as "Do Not Dump. Leads to Boston Harbor" by catch basins and other inlets that convey storm water within 100 yards of any aircraft fueling location.

h. Aircraft Maintenance Activities at Hangers (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 produce the potential of a release of pollutants. Fluid changes are not considered to be minor maintenance.

Major maintenance is permitted inside hangers 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 circumstances. The emergency or compelling circumstance and details of the maintenance activity shall be documented in the SWPPP files.

The following best management practices (BMPs) are designed to prevent storm water 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 should be considered in the development of the SWPPP.

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

ii. Maintain equipment in a clean condition and store indoors in properly designed and suitably designated area.

iii. Use "dry" cleaning and surface preparation techniques when possible.

iv. Use water-based cleaning agents or non-chlorinated solvents to clean equipment parts when possible.

v. Conduct maintenance in buildings equipped with runoff controls to prevent discharges to storm water.

vi. Do not perform maintenance activities or stage equipment near storm water catch basins or any storm water 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.

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. Regular 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 hanger. Wastes from catch basins must be contained and properly disposed of off site. No flushing of catch basin to receiving waters is allowed.

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, such as "Do Not Dump. Leads to Boston Harbor" by catch basins and other inlets that convey storm water within 100 yards of any aircraft maintenance location including outside aircraft hangers.

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

i. Automotive and Ground Service Equipment Maintenance Activities (includes 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 circumstances 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 storm water 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 should be considered in the development of the SWPPP.

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

ii. Maintain equipment in a clean condition and keep parts and equipment stored indoors at properly designed and suitably designated areas.

iii. Use "dry" cleaning and surface preparation techniques 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 storm water.

vii. Do not perform maintenance activities or stage equipment near storm water catch basins or any storm water 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 a leak-proof container staged on secondary containment indoors. Hydraulic oil cans/filters used absorbent materials are not to be placed in trash carts or trash receptacles/dumpsters.

xii. Regular 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 contained and properly disposed of off site. No flushing of catch basin to receiving waters is allowed.

xiii. Store and properly dispose of all fluids generated from automotive or GSE maintenance. Remove batteries from salvage automotive or GSE. 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, such as "Do Not Dump. Leads to Boston Harbor" by catch basins and other inlets that convey storm water within 100 yards of any automotive or GSE maintenance location including outside aircraft hangers.

xvi. No wash waters from cleaning automotive and GSE are to be discharged to a storm water drainage system.

11. SWPPP 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 Federal Aviation Administration (FAA) recommends several methods for removing rubber deposits and other contaminants from a runway surface including 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 the maintenance operation, improper management practices could result in discharges of the chemical solvents in the storm water runoff from runway areas.

Massport, currently uses sodium hydroxide in a several step process to periodically remove rubber deposits from the runways. The airport SWPPP shall outline measures to minimize flows of these cleaning compounds and rubber materials into the drainage system. Massport shall notify the EPA and MassDEP of any changes to this procedure. There are no tenants which conduct such activities.

## C. DEVELOPMENT OF MONITORING PLANS

1. Porter Street Monitoring Plan

Massport shall establish a sampling program to characterize storm water quality related to airport activities in the Porter Street drainage area. The sampling program will consist of a minimum of three (3) sampling locations. Sampling points will be split between the northern and southern portions of the drainage area. Sampling locations will be chosen to obtain samples that are representative of airport activities within the Porter Street drainage area and minimize contributions from the adjacent storm water system operated by the Boston Water and Sewer Commission. Massport shall prepare and maintain a sampling plan for performing monitoring within the Porter Street drainage area.

Massport shall meet with the Boston Water and Sewer Commission to confirm that the available maps of the storm water sewer system in the drainage area for Porter Street storm water outfall are accurate. Additional information may be available from the maps and the work being performed to correct infrastructure problems with the storm water sewer system and the sanitary sewer system. Based on this information, Massport shall develop a Porter Street Monitoring Plan which summarizes the information from the maps and establish representative locations that shall be sampled for the pollutant monitoring requirements at the Porter Street Outfall - 003A, 003B and 003C, as required in Tables I.A.2, I.A.3 and I.A.8, respectively. Massport has **180 days from the effective date** of this permit to develop and implement the Porter Street Monitoring Plan.

2. Runway/Perimeter Storm Water Outfalls Sampling Plan

Massport shall develop a Runway/Perimeter Storm Water Outfalls Sampling Plan to conduct quarterly sampling during wet weather events and biennial sampling during deicing episodes. Massport shall sample at least 15 percent of the 44 (or 7) runway/perimeter storm water outfalls.

Massport shall use the following criteria when developing the sampling locations:

a. The runway being used during wet weather or a deicing episode, the planned pattern of runway and taxiway deicing, and the amount of deicer expected to be applied during the monitored event,

b. Likelihood that a pollutant will be present where monitoring,

c. Safety for the flights and the personnel conducting the sampling, and

d. Ability to obtain a sample from the outfall pipe.

The plan should consider all of the criteria above and be flexible from one storm event to another since the criteria could change such as runway being used. Massport has **180 days from the effective date** of this permit to develop and implement the Runway/Perimeter Storm Water Outfall Sampling Plan.

## D. WATER QUALITY STUDY

1. Receiving Waters Analysis and Water Quality Study Report

Massport shall conduct a Water Quality Study consisting of a biological, chemical, and toxicological analysis of Logan Airport's storm water discharges and the resultant receiving water quality in order to characterize the impacts of deicer contained in storm water discharges. The Water Quality Study shall include an analysis of quantities of deicer used and the concentration of deicer chemicals in direct and indirect surface water discharges. In performing this Water Quality Study, Massport shall develop, calibrate, verify, and use a deicer application, fate, and transport model, to predict the location and duration of ambient receiving water deicer chemical concentrations based on deicer use, results of outfall sampling, tidal conditions, and the range of deicer loadings that are likely to occur at Logan Airport. The Water Quality Study shall predict ambient surface water concentrations of deicer chemicals and dissolved oxygen in the receiving waters based on measured outfall concentrations of deicer and the use of the verified application, fate, and transport model. Massport shall also assess the ability of the receiving waters to meet their designated use(s), including an assessment of impacts to aquatic life and fishing, shellfishing, and recreation. The analysis shall take into account the seasonal nature of deicer use activities and storm water flows, including the effects of snow melt. Massport shall submit a plan and schedule for the Water Quality Study to EPA and MassDEP for review and comment within 6 months of the effective date of this permit. Massport shall prepare a Water Quality Study Report presenting the data collected, methodologies, procedures and results of the Water Quality Study and submit the Water Quality Study Report to EPA and MassDEP for review and comment within 24 months of the effective date of this permit. The Water Quality Study Report shall include contour maps and cross-sections depicting the location and duration of ambient surface water concentrations of deicer compounds and dissolved oxygen based on various tidal, storm, and deicer application scenarios. Procedures, assumptions, and protocols used in the Water Quality Study shall be consistent with those of EPA and/or MassDEP, if applicable.

2. Real-time Monitoring of Deicer

To supplement the Water Quality Study, Massport shall conduct real-time (continuous) monitoring

of the outfalls, during a deicing episode, with expected contamination of deicers (Outfall 001, 002, 003, and 006) for parameters including temperature, DO, and conductivity, to be representative of a storm event discharge from each outfall. Massport shall conduct and submit the monitoring results to EPA and MassDEP within a time frame established in Massport's plan and shall report and assess the results in the Water Quality Study Report.

3. Dilution Factor

To supplement the Water Quality Study, Massport shall calculate a dilution factor for each outfall, for potential use by EPA and MassDEP in order to establish water quality based limits in the future, if necessary. Massport shall calculate and submit the calculated dilution factors to EPA and MassDEP within a time frame established in Massport's plan and shall report and assess the results in the Water Quality Study Report.

## E. MONITORING AND REPORTING

Monitoring results obtained during each month shall be summarized and reported on DMRs postmarked **no later than the 15th day of the following month.** Other monitoring results, reports, and certifications shall be submitted as required above by this permit.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

and

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Northeast Regional Office
205b Lowell Street
Wilmington, MA 01887

In addition, copies of all Discharge Monitoring Reports required by this permit and the WET sampling results shall also be submitted to the State at the following address:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, MA 01608

## F. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all the terms and conditions of this Permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap. 21 § 43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared invalid, illegal or otherwise issued in violation of State law, such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.