The Port Authority of NY & NJ
Two Gateway Center • 14th Floor • Newark, NJ 07102

John F. Kennedy International Airport Best Management Practices Plan

July 2009
(Revised August 2010)

Report Prepared By:

Malcolm Pirnie, Inc.

17-17 Route 208 N
2nd Floor
Fair Lawn, NJ 07410
201-797-7400

Appendices

1 Introduction

This document represents the operational Best Management Practices Plan („BMPP") for the John F. Kennedy International Airport („JFK"). It has been compiled to facilitate JFK's compliance with the requirements of the State Pollutant Discharge Elimination System („SPDES") program. This BMPP is intended for use by The Port Authority of New York and New Jersey (the „PANYNJ") and JFK tenants to provide consistent and effective management of stormwater runoff quality. The BMPP presents a description of the facility and a discussion of potential pollutant sources resulting from practices and activities at the JFK airport. This BMPP also identifies existing stormwater management controls and Best Management Practices („BMPs") at the facility and identifies BMPs that reduce or eliminate pollutants entering the stormwater drainage system.

Tenants shall employ all practicable BMPs and always comply with applicable local, state, and federal regulations and conform to the PANYNJ Airport Rules and Regulations as well as the requirements of all applicable agreements pertaining to contractor, occupant, and tenant activities. Furthermore, this guidance document does not constitute legal advice. Accordingly, tenants should consult legal counsel as to advice regarding their obligations.

JFK currently holds an individual industrial SPDES Permit (Permit No. NY 0008109). The BMPP was prepared as a guidance document for airport tenants and PANYNJ employees to adhere to the JFK"s individual SPDES Permit. A copy of the individual SPDES Permit is included in Appendix A.

1.1 Best Management Practices Plan Organization

This BMPP includes the following sections:

Section 1 - Introduction. Presents federal and state regulatory background and requirements, and discusses PANYNJ Environmental Services Unit.

Section 2 - Facility Description. Describes the general activities at JFK, including details on the stormwater drainage system.

Section 3 - Identification of Potential Pollutant Sources. Describes the potential pollution sources identified through questionnaires and site visits.

Section 4 - Stormwater Management Controls. Presents the BMPs to eliminate or reduce pollutants in stormwater runoff.

Section 5 – Comprehensive Site Compliance Evaluation – Provides the frequency of facility inspections and provides a basis for evaluating the overall effectiveness of the BMPP.

1.2 Regulatory Background

This section presents an overview of the regulatory history of the stormwater pollution control program at the federal and state levels.

1.2.1 Federal Requirements

The Federal Aviation Administration („FAA") imposed more stringent requirements on deicing activities to increase the margin of safety for aircraft operating during snow and ice conditions. These new protocols are grounded in the "clean aircraft concept", which requires that aircraft surfaces must be free of snow and ice before departure and imposes time limits (holdover time) between the application of deicing fluids and aircraft departure. These revised FAA protocols (FAA, 1992) have increased the quantities of deicing fluids used by U.S. airlines and airports. This increase in deicing activity, along with increased air traffic, has resulted in greater quantities of deicing fluid being entrained in airport runoff. Consequently, each year large quantities of propylene glycol based aircraft deicing fluids are used to de-ice aircraft.

In 1972, the Federal Water Pollution Control Act, also known as the Clean Water Act („CWA"), was enacted to require that the discharge of pollutants to waters of the United States from any point source be covered by a National Pollutant Discharge Elimination System („NPDES") permit. In 1987, amendments to the CWA added Section 402(p), establishing a framework for regulating municipal and industrial discharges of stormwater under the NPDES program. The NPDES program is administered by the United States Environmental Protection Agency („EPA").

The NPDES regulations require operators of specific types of industrial activities that discharge stormwater to obtain NPDES permits. Stormwater associated with industrial activities is defined as stormwater runoff that exits any conveyance that is used for collecting and conveying stormwater that is directly related to manufacturing, processing, material storage, and waste material disposal areas and similar areas where stormwater can contact industrial pollutants related to the industrial activity at an industrial facility. Airports standard industrial classification („SIC") code of 4581 was included as a regulated industry and therefore is required to obtain NPDES permits.

1.2.2 State Requirements

The federal regulations also allow states to implement the NPDES program and issue NPDES permits to regulate stormwater discharges associated with industrial activities. The New York State Department of Environmental Conservation („NYSDEC") has been delegated authority by the EPA to implement the NPDES program under the SPDES program. Effective October 1, 2007, the NYSDEC modified JFK's individual stormwater permit (Permit No. NY 0008109). This permit will expire on May 31, 2011. The individual SPDES Permit covers discharges from stormwater associated with JFK industrial activities to receiving waters of the State of New York.

1.3 SPDES Permit NY 0008109

The NYSDEC issued a SPDES Permit for JFK Airport in 1987 and modified the permit in 1993 and 1994, and administratively renewed the SPDES Permit in 1996, 2001, and 2006. As a result of the 2006 review, the NYSDEC determined that the SPDES Permit needed to be modified and issued a notice of complete application on June 2, 2006. The Draft modified SPDES Permit was made available for public comment. In response to the Draft SPDES Permit, the PANYNJ, as well as the Natural Resources Defense Council („NRDC") and a number of other organizations and individuals, submitted comments requesting changes to some of the proposed modifications. Thereafter, the NYSDEC staff drafted a response to comments as well as a revised Draft SPDES Permit modification, both dated October 12, 2006. The NYSDEC subsequently issued the PA a Request for Information („RFI") on November 29, 2006 for stormwater sampling at JFK Airport. The NYSDEC RFI requested that the PANYNJ provide additional information regarding the concentrations of pollutants in the stormwater runoff from the permitted outfalls and requested completion of a mixing zone analysis for estuarine marine waters for each outfall to support the issuance of a Draft SPDES Permit.

In accordance with the November 2006 RFI, a sampling program was conducted to collect stormwater samples from each of the discharge outfalls during or immediately following deicing events at JFK Airport between January 2007 and March 2007. Results of sampling efforts conducted by the PANYNJ were submitted to NYSDEC to support the review of the Draft SPDES Permit.

In accordance with the November 2006 RFI, a mixing zone analysis for estuarine marine waters for each outfall was prepared and submitted in April 2007 to NYSDEC to support the issuance of a Draft SPDES Permit. The mixing zone analysis estimated the contributory areas and runoff coefficients for all drainage and sub drainage areas for the existing outfalls and summarized the contributory area, estimated runoff coefficient, calculated hourly maximum flow rate and provided a physical description for each of the outfalls. In support of the Draft SPDES Permit, the mixing zone analysis was used by NYSDEC to calculate water quality based effluent limits for discharges from the permitted outfalls.

NYSDEC issued the SPDES Permit on September 27, 2007 which authorizes discharge from JFK Airport and requires the monitoring of outfall numbers 002, 004, 005C, 007A, 010 (KP-1, KP-2, KP-3, KP-4, and KP-5 discharge through outfall number 010), 016, and 022. The monitoring of these outfalls will be conducted by the PANYNJ. The outfalls will be monitored for parameters of interest based on the anticipated discharges from various activities at JFK Airport. Of the 7 outfalls which require monitoring, 4 require monitoring for glycols and carbonaceous biological oxygen demand („$CBOD_5$") associated with the airlines" deicing activities. The 4 outfalls are outfall number 002 located on the western portion of the JFK Airport which discharges to

Bergen Basin, outfall number 010 located on the southwestern portion of JFK Airport which discharges to Jamaica Bay, outfall number 016 located on the southern portion of JFK Airport that discharges to Jamaica Bay, and outfall number 022 located on the eastern portion of JFK Airport that discharges into Thurston Bay.

Special Condition 1, Page 17 of 31 of the SPDES Permit requires a onetime modeling study, augmented with ambient data in the receiving waters (Bergen Basin, Jamaica Bay, and Thurston Bay), including samples of each outfall (at the JFK airport), coinciding with the deicing discharge event(s) for calibrating and verifying the water quality model.

JFK has a separate storm sewer system that consists of 26 outfalls (002, 003, 004, 004A, 004B, 005, 005A, 005B, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 017A, 017B, 019, 020, 021, 022) as well as seven monitoring points (outfall number 005C which discharges through outfall 005, 007A which discharges through outfall 007, and KP1, KP2, KP3, KP4, and KP5 which discharge through outfall 010). Eight outfalls discharge to Bergen Basin (Class I); three outfalls discharge to Thurston Basin (Class I); and fifteen outfalls discharge to Jamaica Bay (Class SB). In general, stormwater runoff and some industrial discharges are captured in catch basins at the airport and conveyed into the outfalls via the storm drainage system. Controlled non-stormwater discharges to the storm drainage system also exist at JFK. These include outflows 003, 004A, 004B, 005, 005A, 005B, 006, 007, 008, and 009.

Based on the existing permit, the PANYNJ has authorization for outfalls 004, and 010 to receive discharges from stormwater as well as effluent from the wastewater treatment plants („WWTPs“) at the Bulk Fuel Farm („BFF“) and the Satellite Fuel Farm („SFF“). The PANYNJ also has authorization for outfalls 005C, 007A, and outfall 010 to receive treated groundwater from three remediation plants. Two remediation plants are located on east and west ends of the BFF and one remediation plant is located in the SFF.

The airport is currently operating under a New York SPDES individual permit. Compliance with the permit requires minimal impacts to stormwater from airport activities. Special Condition – Best Management Practices, Page 24 of 31 of the SPDES Permit requires the PANYNJ to develop, maintain, and implement a BMPP to prevent releases of significant amount of pollutants, including deicing/anti-icing chemicals, to the waters of the State through plant site runoff; spillage and leaks; sludge or waste disposal; and stormwater discharges including, but not limited to, drainage from raw material storage. Tenants and/or other entities that apply or otherwise use deicing and/or anti-icing materials at the JFK airport shall participate in the development of the BMPP. This BMPP will discuss the current activities performed at JFK and provide guidance BMPs developed for areas occupied by tenants of the JFK airport to help minimize activity-based impacts to stormwater.

The PANYNJ will be required to implement and maintain a JFK BMPP. The BMPP will be amended whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the potential for pollutants to be discharged

to the waters of the State, or if the BMPP is ineffective in controlling the discharge of pollutants. Airport tenants discharging stormwater associated with an industrial activity shall be required to implement a BMP specific to their respective operation of their leasehold and operational area, or operate under the provisions established in the JFK airport BMPP. All discharges from JFK airport tenants are covered under the SPDES Permit and it will be the tenant"s responsibility to inform the PANYNJ of any changes to industrial activities that are discharging to stormwater or any changes to the BMPs being implemented.

In addition to stormwater discharge monitoring, the individual permit requires the PANYNJ to track and report any anticipated (e.g. planned releases) or unanticipated (e.g., spills or leaks) non-compliance with the permit. The individual permit requires that any non-compliance with permit conditions be reported to NYSDEC.

Anticipated non-compliance is defined as any planned releases and unanticipated non-compliance events include unanticipated bypass, any upset which violates any effluent limitation in the permit, violation of maximum daily discharge limitation, and spills or leaks.

Reports for anticipated noncompliance should be filed with NYSDEC prior to the discharge. Occurrences of unanticipated non-compliance require oral communication to NYSDEC within 24 hours, and submission of written communication within five days of when the PANYNJ becomes aware of the non-compliance.

1.4 JFK SPDES Special Conditions – Best Management Practices

The activities conducted at JFK involve multiple tenants performing many varied tasks associated with routine airport operations. Examples of the activities performed at the airport with the potential to cause pollution of stormwater discharges include aircraft, vehicle and equipment fueling and maintenance, building and grounds maintenance, chemical and fuel storage, and deicing/anti-icing of aircraft, taxiways, and runways. The PANYNJ has developed a comprehensive approach to managing stormwater discharges associated with activities at JFK, including identifying potential pollutants through conducting of audits and development of plans to minimize and/or reduce potential pollutant discharges to receiving waters of the State.

1.4.1 Special Condition – Number 1 General

Special Condition – Best Management Practices Number 1 on Page 24 of 31 of the SPDES Permit requires the PANYNJ to develop, maintain, and implement a BMPP to prevent releases of significant amounts of pollutants, including deicing/anti-icing chemicals, to the waters of the State through plant site runoff; spillage and leaks; sludge or waste disposal; and stormwater discharges including, but not limited to, drainage from raw material storage. Tenants and/or other entities which apply or otherwise use deicing and/or anti-icing materials at the facility shall participate in the development of this plan. BMPs shall be developed for areas of the facility occupied by tenants of the airport and

shall be integrated with the plan for the entire airport. The BMPP shall include all appropriate components of a Storm Water Pollution Prevention Plan („SWPPP"). USEPA guidance for development of the stormwater elements of the BMPP is available in the September 1992 Manual Storm Water Management for Industrial Activities, EPA 832-R-92-006.

The BMPP shall be documented in narrative form and shall include the 13 minimum BMPs and any necessary plot plans, drawings, or maps. Other documents already prepared for the facility such as a Safety Manual or a Spill Prevention, Control and Countermeasure („SPCC") plan may be used as part of the plan and may be incorporated by reference. A copy of the current BMPP shall be submitted to the Department as required in item (2.) below and a copy must be maintained at the facility and shall be available to authorized Department representatives upon request. The BMPs applicable to each area of the facility occupied by a particular tenant shall be consistent with an overall BMPP for the entire airport. The permittee shall maintain, update and assure the proper implementation of the overall BMPP.

In accordance with Special Condition– Best Management Practices Number 1, the PANYNJ compiled this BMPP for JFK Airport. The BMPP is intended for use by the PANYNJ and JFK tenants to provide consistent and effective management of storm water runoff quality. The BMPP presents a description of the various facilities at JFK Airport and a discussion of potential pollutant sources resulting from practices and activities at the JFK airport. The BMPP also identifies existing storm water management controls and BMPs at the various facilities at JFK and identifies BMPs that reduce or eliminate pollutants entering the storm water drainage system. The JFK BMPP identifies 19 BMPs to eliminate or reduce pollutants in storm water runoff:

BMP 1: Aircraft Deicing/Anti-icing
BMP 2: Aircraft, Vehicle, and Equipment Fueling
BMP 3: Aircraft, Vehicle, and Equipment Maintenance
BMP 4: Aircraft, Vehicle and Equipment Washing
BMP 5: Building Cleaning and Maintenance
BMP 6: Chemical and Petroleum Storage and Handling
BMP 7: Elimination of Non-Storm water Discharges to Storm Drains
BMP 8: Spills Management
BMP 9: Lavatory Service Operations
BMP 10: Oil/Water Separators
BMP 11: Outdoor Handling of Material
BMP 12: Outdoor Material and Equipment Storage
BMP 13: Waste Management
BMP 14: Fire Fighting Foam Discharge
BMP 15: Storm water Pollution Prevention Education
BMP 16: Street Sweeping & Storm water Facility Maintenance
BMP 17: Security
BMP 18: Rubber Removal
BMP 19: Runway and Taxiway Anti-icing

The JFK BMPP has been provided to the tenants for review and implementation. Several of the tenants at JFK have been provided with a questionnaire to confirm industrial activities conducted at each of the tenant facilities. In addition, the PANYNJ has interviewed tenants and conducted site visits to clarify the information provided in the questionnaires; confirm the routine operations of some of the tenants; and fill data gaps regarding the nature of ongoing operations and the current use of BMPs by some of the tenants. The majority of tenants at JFK have been provided with the questionnaire presented in Appendix C of the June 2009 BMPP. A copy of the questionnaire and the March 2009 BMPP were distributed to tenants for review and to gather outstanding tenant questionnaires. The PANYNJ has presented the information gathered from tenants to date in the BMPP and Tables 1 and 2.

1.4.2 Special Condition – Number 3 Facility Review

Special Condition – Best Management Practices Number 3 on Page 24 of 31 of the SPDES Permit requires "the permittee to review and inspect all facility components or systems (including but not limited to material storage areas; in-plant transfer, process, and material handling areas; loading and unloading operations; storm water, erosion, and sediment control measures; process emergency control systems; and sludge and waste disposal areas) where material or pollutants are used, manufactured, stored or handled to evaluate the potential for the release of pollutants to the waters of the State. Tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials at the facility shall participate in this facility review and inspection. Tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials shall also provide all necessary information to the permittee for the permittee to complete its evaluation. In performing such an evaluation, the permittee shall consider such factors as the probability of equipment failure or improper operation, cross-contamination of storm water by process materials, settlement of facility air emissions, the effects of natural phenomena such as freezing temperatures and precipitation, fires, and the facility"s history of spills and leaks. The relative toxicity of the pollutant shall be considered in determining the significance of potential releases. The review and inspection shall evaluate whether measures to reduce pollutant loadings identified in the BMP Plan are adequate and properly implemented in accordance with the terms of this permit or whether additional control measures are needed."

In accordance with Special Condition – Number 3, the PANYNJ prepared a Facility Review and Inspection Report summarizing the facility components and systems inspections that have been conducted for all PANYNJ entities and tenants at JFK Airport. The 2008 Facility Review and Site Inspection Report consisted of a series of inspections, results, and review of all PANYNJ and tenant facility components and systems including; fueling stations, waste storage areas, above ground and underground storage tanks (e.g. petroleum, glycol and chemical storage), spills management and oil/water separators, PANYNJ groundwater remediation systems and wastewater treatment plants, loading areas, material handling area, deicing/anti-icing; which have the potential to discharge to one or more of the 26 JFK Airport outfalls listed in the SPDES Permit, covering 15

drainage areas (A through P). The Annual Facility Review and Inspection Report will provide a basis for evaluating the overall effectiveness of the BMPP and measure the BMPP performance. The Annual Facility Review and Inspection Report will document the date, time, inspection methodology, inspectors, BMP conformance evaluation results, and the overall effectiveness of the BMPP. Any proposed modifications to the inspection procedures and approach for BMP implementations will also be included with this report. A Facility Review and Inspection Report summarizing the facility components and systems inspections that have been conducted for all PANYNJ entities and tenants at JFK Airport will be completed for 2009.

1.4.3 Special Condition – Number 4.A 13 Minimum BMPs

Special Condition – Best Management Practices, Number 4.A on Page 25 of 31 of the SPDES Permit requires development of 13 minimum BMPs to prevent or minimize the potential release of pollutants to the waters of the State. In March 1998, the PANYNJ developed activity-specific Good Environmental Practices („GEPs") for JFK and updated them as BMPs in this BMPP dated June 2009. Good housekeeping practices that address housekeeping, operational, structural and contingency considerations that can be taken to help achieve environmental compliance are utilized at the JFK facility. Section 4 of the JFK BMPP discusses the 13 minimum BMPs that were developed using the September 1992 manual for *Storm Water Management for Industrial Activities*, EPA 832-R-92-006 as reference. Activity specific BMPs that are applicable to JFK activities are provided in Appendix D.

1.4.4 Special Condition – Number 4.B SWPPP for Construction Activity

Special Condition – Best Management Practices, Number 4.B on Page 25 of 31 of the SPDES Permit requires development of a Stormwater Pollution Prevention Plans („SWPPP") prior to the initiation of any site disturbance of one acre or more of uncontaminated areas. Construction activity that disturbs more than one acre at the JFK airport requires that the tenant prepare a SWPPP that confirms to the *New York Standards and Specifications for Erosion and Sediment Control and New York State Stormwater Management Design Manual*.

1.4.5 Special Condition – Number 6 Petroleum and/or Chemical Bulk Storage Areas

Special Condition – Best Management Practices, Number 6 on Page 26 of 31 of the SPDES Permit requires that facilities with petroleum and/or chemical bulk storage areas must comply with all applicable regulations including those involving releases, registration, handling, and storage of petroleum and/or chemicals; stormwater discharges from handling and storage areas should be eliminated where practical. The PANYNJ currently has a Spill Prevention Control and Counter measure („SPCC") Plan for JFK airport. The plan was prepared by Lawler, Matusky & Skelly Engineers in October 2004 for the PANYNJ, which has reviewed the plan and verified that the plan contains the

appropriate spill prevention and clean up measures. Tenants that stored petroleum must also comply with all applicable regulations and prepare and maintain a SPCC Plan.

1.4.6 Special Condition – Number 7.A.i Site Map

Special Condition – Best Management Practices, Number 7.A.i on Page 27 of 31 of the SPDES Permit requires a site map that will identify where any of the following activities may be exposed to precipitation/surface runoff: aircraft and runway deicing/anti-icing operations; fueling stations; aircraft, ground vehicle, and equipment maintenance/cleaning areas; and storage areas for aircraft, ground vehicles and equipment awaiting maintenance. A site map identifying these activities is provided in Appendix G. Section 3 identifies and describes all activities at JFK airport.

1.4.7 Special Condition – Number 7.A.ii Potential Pollutant Sources

Special Condition – Best Management Practices, Number 7.A.ii on Page 27 of 31 of the SPDES Permit requires a narrative description of the potential pollutants sources from the following activities: aircraft, runway, ground vehicle and equipment maintenance and cleaning; aircraft and runway deicing/anti-icing operations (including apron and centralized aircraft deicing/anti-icing stations, runways, taxiways, and ramps). Facilities which conduct deicing/anti-icing operations shall maintain a record of the types (including the Material Safety Data Sheets („MSDS")) and monthly quantities of deicing/anti-icing chemicals used, either as measures amounts, or in the absence of metering, as estimated amounts. This includes all deicing/anti-icing chemicals. Tenants and fixed-base operators who conduct deicing/anti-icing operations provide the above information to the PANYNJ which is included in the JFK BMPP. Tenants provide the JFK facility with monthly quantities of deicing/anti-icing chemicals used, the number of aircraft deiced during the event, and the date of deicing and/or anti-icing, in addition, tenants maintain MSDS sheets. Section 3 identifies and describes all activities and potential sources of stormwater pollution at JFK airport.

1.4.8 Special Condition – Number 7.B.i Good Housekeeping

Special Condition – Best Management Practices, Number 7.B.i on Page 27 and 28 of 31 of the SPDES Permit requires a description and practices measures that prevent or minimize the contamination of stormwater runoff from various airport activities. Section 4 discusses recommended BMPs that are applicable to JFK activities.

1.4.9 Special Condition – Number 7.B.ii Source Reduction

Special Condition – Best Management Practices, Number 7.B.ii on Page 28 of 31 of the SPDES Permit suggests alternatives to the use of glycol based deicing/anti-icing chemical. Section 4 discusses some alternatives to the use of glycol based deicing/anti-icing chemical that are practiced that can reduce the aggregate amount of deicing/anti-icing chemicals used and/or lessen the environmental impact.

1.4.10 Special Condition – Number 7.B.iii Management of Runoff

Special Condition – Best Management Practices, Number 7.B.iii on Page 28 and 29 of 31 of the SPDES Permit indicates that the PANYNJ shall describe and implement a program to control to manage contaminated runoff to reduce the amount of pollutants being discharges from the JFK airport. The stormwater management program shall describe the primary issues that are currently driving decisions regarding the types of deicing runoff for collection systems, recovery systems, and conveyance systems. Section 4 discusses stormwater management to control and manage contaminated runoff to reduce the amount of pollutants being discharges from the JFK airport.

1.4.11 Special Condition – Number 7.B.iv Routine Facility Inspections

Special Condition – Best Management Practices, Number 7.B.iv on Page 29 of 31 of the SPDES Permit indicates that routine facility inspections shall be specified in the JFK BMPP. Section 5 discusses a recommended schedule, a list of the pollution prevention team personnel, employee training requirements, facility inspection protocol, monitoring requirements, recordkeeping and reporting procedures, BMPP updates, and comprehensive site compliance evaluation.

1.4.12 Special Condition – Number 7.B.v Comprehensive Site Compliance Evaluation

Special Condition – Best Management Practices, Number 7.B.v on Page 29 of 31 of the SPDES Permit indicates that an annual site compliance evaluation shall be conducted by qualified facility personnel during periods of actual deicing operations, if possible. Section 5 discusses the facility inspection protocol and comprehensive site compliance evaluation that will be conducted.

1.5 Environmental Services Unit and Management

The PANYNJ has an Environmental Services Unit at JFK Airport to measure and monitor the success of the BMPP and evaluate the effectiveness of BMP implementation and performance. The manager Environmental Services Unit contact is:

Ms. Denise A. Branch
Manager, Environmental Services
The Port Authority of NY & NJ
JFK International Airport
Building 14, 3rd Floor
Jamaica, NY 11430
718-244-3568
dbranch@panynj.gov

The Environmental Services Unit performs a variety of inspections of facilities owned and operated by the PANYNJ and tenants. As required by the SPDES Permit, the PANYNJ inspections are conducted by staff of the Environmental Services Unit for all facility components or systems as specified in Special Condition No. 3 – Best Management Practices, on Page 24 of 31 of the SPDES Permit. Inspections are conducted in an organized and consistent manner to ensure PANYNJ and tenant compliance with the JFK SPDES Permit. PANYNJ inspections do not preclude tenants from conducting inspections. Tenants are responsible for addressing all non-compliance issues at their respective facilities in accordance with Federal, State, and local environmental regulations as per their lease agreements.

2 Facility Description

This section describes the location of the JFK airport, current airport land uses, and the airport stormwater drainage system. In addition, a comprehensive list of the facilities and tenant activities has been included.

2.1 General

JFK is located in the southwestern section of Jamaica, Queens County, New York. JFK has been operated by the PANYNJ under a lease with the City of New York since June 1, 1947. The airport is bordered by Rockaway Boulevard to the north, Bergen Basin to the west, Jamaica Bay to the south, Head of Bay is southeast and Thurston Basin is to the east of JFK as shown on Figure 1 located in Appendix G.

In 2007, JFK served approximately 47 million passengers traveling on over 443,004 domestic and international flights. Over 1.7 million tons of cargo and 83,000 tons of mail were transported through the airport.

The JFK runway system consists of two pairs of parallel runways: 4L-22R, 4R-22L, 13L-31R, and 13R-31L aligned at right angles. The total runway length is nearly nine miles. JFK also has over 25 miles of taxiways to move aircraft in and around the airfield. In addition, there are seven helipads.

JFK operates an Airtrain service connecting all airport terminals with the subways, commuter trains, and airport parking lots. During de-icing months, the Airtrain rails are heated using a heat tracing element to prevent build-up of ice on the rails. No de-icing fluid is used to prevent ice from building up on the rails. JFK's maintenance program and Spill Prevention Control and Countermeasure Plan are in place to reduce the potential for pollutant sources from entering the stormwater system.

The airport covers approximately 4,590 acres, including 880 acres in the Central Terminal Area ("CTA"). The airport has more than 30 miles of roadway. There are over 125 gates associated with commercial and passenger movement. An average of 957 aircraft arrives and departs each day. An airport layout plan, including building numbers, is provided as Figure 2 located in Appendix G. Table 1 located in Appendix F lists the facility identification number, facility description, and the drainage areas in which their facilities are located.

The PANYNJ, a bi-state agency of the States of New York and New Jersey, maintains and operates JFK. Under the long-term written agreement with the City of New York, the PANYNJ leases most of the airport facilities to various airlines and aviation support-related tenants.

JFK is dedicated primarily to industrial and commercial use. Airport leaseholds are used predominantly for general aviation-related purposes. Aviation-related facilities consist of fuel farms; facilities providing aircraft services and air charter services; PANYNJ Police and main rescue services; a crash, fire, and rescue training facility; fixed-base operations relating to aircraft and ground vehicle maintenance and repair; and offices. Other airport leaseholds include medical, educational, and lodging facilities, as well as a commercial vehicle fueling station.

2.2 Land Use

Approximately 86 percent of JFK is covered by impervious surfaces, such as buildings, runways, taxiways, and parking lots. The pervious surfaces, including grass and un-vegetated soils that principally lie near the west end of JFK, between runways, taxiways, and to the east of runways 4L-22R and 4R-22L, account for approximately 14 percent of the facility‟s area. The airport is surrounded on three sides by surface waters (Bergen Basin, Jamaica Bay, Head of Bay, and Thurston Basin); the remaining area, primarily north of JFK is densely populated with residential, commercial, and industrial land uses.

2.3 Drainage System

The stormwater drainage network at JFK consists of 16 drainage areas which includes approximately 6,000 catch basins, each with a capacity between 200 to 400 gallons, which discharge directly into 26 outfalls as shown on Figure 3 located in Appendix G. Except for the Bulk Fuel Farm („BFF‟) and the Satellite Fuel Farm („SFF‟) facilities, there is no collection or treatment for the majority of surface water discharged at JFK. The following is a description of the 16 drainage areas (A through P) within JFK‟s stormwater drainage network as well as the associated outfalls:

Drainage Area A

Drainage Area A covers approximately 3 percent (160 acres) of the airport drainage area. It is located in the northwest section of JFK and includes the Long Term Parking Lots 8 and 9 and the JFK Airtrain which connects all airport terminals with the subways, commuter trains, and airport parking lots. The Airtrain operates at buildings 400-403 located in Drainage Area A. Outfalls 004A (4-foot x 5-foot box), outfall 004B (54-inch diameter pipe), outfall 005A (6-foot x 4-foot box, that diverts into two pipes, a 30-inch diameter and a 36-inch diameter) and outfall 005B (36-inch diameter), all discharge from this area to Hawtree Basin. Multiple large New York City Department of Environmental Protection (NYCDEP) discharge lines from a wastewater treatment plant cross under this drainage area and discharge into the Bergen Basin. Two outfalls, 005C and 007A, are not part of drainage area A, but discharge groundwater associated with the groundwater remediation systems to the Bergen Basin. 005C discharges to outfall 005 and 007A discharges to Outfall 007, not in drainage area A – See Area D.

Drainage Area B

Drainage Area B covers approximately 1 percent (36.5 acres) of the northern section of the airport and includes the Ramada Hotel, a vacant FAA facility, and the Vanwyck substation. Outfall 001, although not on JFK's SPDES permit, is covered under the NYCDEP Permit Number NY0026115 and discharges to Bergen Basin. Outfall 001 is approximately 19-feet x 19-feet and is protected by a permanent Slickbar containment boom.

Drainage Area C

Drainage Area C covers approximately 2 percent (95 acres) of the airport drainage area, is located in the western section of the airport. This area is not paved and consists primarily of pervious tidal wetland vegetation. This area drains into Bergen Basin and does not contain any outfalls.

Drainage Area D

Drainage Area D is located in the western section of the airport and covers approximately 6 percent (281 acres) of the airport. This area includes discharges of surface water treated at the BFF by a wastewater treatment plant through outfall 004. Two groundwater remediation treatment systems, one located at the west end of the BFF and the other at the east end, discharge through outfalls 005 and 007, respectively. There are a total of five outfalls located in Drainage Area D. These include outfalls 003 (24-inch diameter), outfall 004 (24-inch diameter), outfall 005 (48-inch diameter), outfall 006 (66-inch diameter), and outfall 007 (double-barrel, each 60-inch diameter) which all discharge to Bergen Basin. In addition, each outfall is equipped with its own permanent Slickbar containment boom.

Drainage Area E

Drainage Area E is located in the southwestern section of the airport and covers approximately 5 percent (215 acres) of JFK. This area drains a number of cargo buildings, hangars, and a parking that discharges to outfall 008 (72-inch diameter). This area also drains a number of runways and taxiways to outfall 009 (51-inch diameter). Both outfalls discharge directly into Jamaica Bay.

Drainage Area F

Drainage Area F covers approximately 6 percent (293 acres) of JFK. This area includes numerous hangars and multi-tenanted cargo buildings. All storm drains in Drainage Area F are connected to the New York City combined system.

Drainage Area G

Drainage Area G covers approximately 3 percent (150 acres) of JFK. This area includes hangars, a multi-tenant building, and two vacant buildings. All surface water

drainage from this area discharges through outfall 002 (14-feet x 6-feet) to Bergen Basin. A permanent Slickbar containment boom also protects this outfall.

Drainage Area H

Drainage Area H covers approximately 19 percent (873 acres) of the airport. This area includes Terminals 2 (Delta Airlines), 7 (British Airways), 8 (American Airlines), and 9 (American Airlines), Building 49 (KIAC Cogeneration Plant), hangars, SFF, several cargo buildings, in addition, to aeronautical roadways. Drainage Area H discharges through the airport‟s Triple Barrel Sewer to outfall 010 (13-feet x 7-feet in size) into Jamaica Bay. This is the largest stormwater discharge area at JFK. It is equipped with a permanent Slickbar containment boom, which has a capacity of capturing approximately 5,000 gallons of liquid.

Drainage Area I

Drainage Area I covers approximately 6 percent (300 acres) of JFK. This area services a northern section of the airport that includes primarily hangars and cargo buildings as well as the U. S. Post Office. This area drains through four sewer barrels to outfall 023 (17-feet x 9-feet) and discharges into Thurston Basin.

Drainage Area J

Drainage Area J covers approximately 13 percent (606 acres) of JFK. This area includes aeronautical runways and taxiways, which discharge through outfall 017A (72-inch diameter) and Terminals 5 and 6 (JetBlue Airways) that discharge through outfall 022. Outfall 022 is a double barrel and is equipped with a permanent Slickbar containment boom. One barrel of this outfall is used by NYCDEP and is included on their current NYSDEC SPDES permit. This area discharges into the Thurston Basin.

Drainage Area K

Drainage Area K covers approximately 10 percent (484 acres) of JFK. This area includes terminals as well as aeronautical taxiways. Terminal 4W (International Arrivals Building), Terminal 2 (Delta Airlines), and Terminal 3 (Delta Airlines) discharge through outfall 012 (9-foot 6-inch by 7-foot 6-inch). Terminal 4E and the Terminal 4 Hard Stands Ramp discharge through outfall 013 (72-inch diameter) which is equipped with a permanent Slickbar containment boom. Taxiways discharge through outfall 014 (54-inch diameter). All outfalls from Drainage Area K discharge into Jamaica Bay.

Drainage Area L

Drainage Area L covers approximately 5 percent (229 acres) of the airport. This area includes aeronautical runways which discharge through outfalls 015 (54-inch diameter), outfall 016 (48-inch diameter), and outfall 017 (30-inch diameter) to Jamaica Bay.

Drainage Area M

Drainage Area M covers approximately 2 percent (100 acres) of JFK and includes Terminal 1 (Terminal One Management, Inc. Multi-tenant airlines). This area discharges through outfall 011 (72-inch diameter), which is equipped with a permanent Slickbar containment boom, and discharges to Jamaica Bay.

Drainage Area N

Drainage Area N covers approximately 7 percent (286 acres) of JFK. This area includes aeronautical runways and discharges through outfall 021 (48-inch diameter) into Thurston Basin. This drainage area is mostly unpaved. Stormwater also infiltrates into the ground and flows to Thurston Basin via overland flow.

Drainage Area O

Drainage Area O covers approximately 6 percent (256 acres) of JFK. This area includes aeronautical runways and taxiways that discharge through outfall 020 (48-inch diameter) into Head of Bay. This drainage area is mostly unpaved. Stormwater also infiltrates into the ground and flows to Head of Bay via overland flow.

Drainage Area P

Drainage Area P covers approximately 5 percent (225 acres) of JFK. This area includes aeronautical runways and taxiways that discharge through outfalls 017B (72 inch diameter) into Jamaica Bay and outfall 019 (60-inch diameter) into Head of Bay.

Table 2 located in Appendix F lists the tenants and the drainage areas in which their facilities are located.

2.4 Historical Stormwater Monitoring

JFK has a separate storm sewer system that consists of 26 outfalls (002, 003, 004, 004A, 004B, 005, 005A, 005B, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 017A, 017B, 019, 020, 021, and 022) as well as seven monitoring points (outfall number 005C which discharges through outfall 005, 007A which, discharges through outfall 007, and KP1, KP2, KP3, KP4, and KP5 which discharge through outfall 010). Eight outfalls discharge to Bergen Basin; three outfalls discharge to Thurston Basin; and fifteen outfalls discharge to Jamaica Bay. In general, stormwater runoff and some industrial discharges are captured in catch basins at the airport and conveyed into the outfalls via the storm drainage system. Controlled non-stormwater discharges to the storm drainage system also exist at JFK. These include industrial discharges associated with the airport"s cogeneration facility, Building 49, as well as activity-based discharges such as aircraft deicing operations.

Based on the existing permit, the PANYNJ has authorization for outfalls 004, and 010 to receive discharges of stormwater as well as effluent for the Waste Water

Treatment Plants („WWTPs") at the BFF and SFF. The PANYNJ also has authorization for outfalls 005C, 007A, and outfall 010 to receive treated groundwater from three remediation plants. Two remediation plants are located on east and west ends of the BFF and one remediation plant is located in the SFF.

In addition to stormwater discharge monitoring, the individual permit requires JFK to track and report any anticipated (e.g. planned releases) or unanticipated (e.g., spills or leaks) non-compliance with the permit. The individual permit requires that any non-compliance with permit conditions be reported to NYSDEC.

Monthly and quarterly monitoring of stormwater discharges from seven specified outfalls is currently required by the individual permit. The NYSDEC SPDES Permit authorizes discharge from JFK Airport and requires the monitoring of outfall numbers 002, 004, 005C (discharges through outfall 005), 007A (discharges through outfall 007), 010 (KP-1, KP-2, KP-3, KP-4, and KP-5 discharge through outfall number 010), 016, and 022. The outfalls will be monitored for parameters of interest based on the anticipated discharges from various activities at JFK airport. Of the seven outfalls which require monitoring, four require monitoring for all glycol based deicing/anti-icing chemicals and 5 day $CBOD_5$ associated with the airlines" deicing activities. The four outfalls are outfall number 002 located on the western portion of the JFK airport which discharges to Bergen Basin, outfall number 010 located on the southwestern portion of JFK airport which discharges to Jamaica Bay, outfall number 016 located on the southern portion of JFK airport that discharges to Jamaica Bay, and outfall number 022 located on the eastern portion of JFK airport that discharges into Thurston Basin. The previous permit had required monitoring of only outfall numbers 003, 004, and 010 that were associated with the BFF and SFF.

Historical monitoring results indicate that oil & grease, benzene, toluene, ethylbenzene and xylene („BTEX") were present at detectable concentrations after treatment. Total suspended solids ranged from 3 to 26 mg/L and pH was variable between 6.6 and 8.1 standard units. A summary of the historical monitoring results is presented in Appendix B.

2.5 Tenant and Target Industrial Activities

JFK"s tenants conduct a variety of activities supporting the airport"s operation with the potential to affect the quality of stormwater runoff from JFK airport. Site inspections, questionnaires, interviews, and past environmental audit reports were used to help to determine the most current information concerning activities at tenant facilities. Based on this information, the following activities that occur at JFK pose a potential for stormwater pollutant sources:

- Aircraft Deicing/Anti-icing (AD)
- Aircraft Fueling (AF)
- Aircraft Maintenance (AM)
- Aircraft Painting/Stripping (AP)
- Aircraft Rental/Sales (AR)
- Aircraft Sanitary Service (AS)
- Aircraft Washing (AW)
- Cargo Handling (CH)
- Chemical Storage (CS)
- Equipment Degreasing/Washing (ED)
- Equipment Fueling (EF)
- Equipment Maintenance (EM)
- Equipment Storage (ES)
- Firefighting Foam Testing (FT)
- Food Handling (FH)
- Fuel Storage (FS)
- Floor Washdown (FW
- Lavatory Service (LS)
- Manufacturing (MF)
- Outdoor Apron Washdown (OA)
- Outdoor Storage Areas (OS)
- Pesticide/Herbicide Application (PH)
- Rubber Removal (RR)
- Runway Maintenance (RM)
- Runway/Taxiway Deicing (R-TD)
- Vehicle Maintenance (VM)
- Vehicle Washing (VW)
- Vehicle Fueling (VF)

For purposes of this BMPP, the term "vehicles" includes mobile equipment powered by petroleum-based fuels (e.g., trucks, luggage tugs, etc.) while "equipment" is used to describe other non-mobile equipment (e.g. generators). A more specific discussion of tenant activities and the potential pollution sources related to the activities is presented in Section 3.

3 Identification of Potential Pollution Sources

This section identifies and describes all activities and potential sources of stormwater pollution at JFK. Specifically, potential stormwater pollutants, areas of potential pollutant contact with stormwater, activity-based non-stormwater discharges, potential hard-piped non-stormwater discharges, and historic spills and leaks were explored through the BMPP questionnaire, onsite interviews of the tenants, and a thorough visual site reconnaissance.

Historical data and environmental audits were used to facilitate interviews with tenants. The tenants were asked to provide the following information:

- General description of operations conducted at each of the tenant"s locations;
- Facility stormwater drainage patterns;
- Specific target activities conducted at the facility, and whether they are performed indoors or outdoors;
- Inventory of chemicals at each location and chemical storage practices;
- Identification of potential pollution sources;
- Identification of any existing best management practices;
- Identification of non-stormwater discharges and possible illicit connections to the stormwater drainage system;
- Description of deicing operations; and
- Identification of historic leaks and spills.

Several tenant interviews and site reconnaissance visits have been conducted and will continue to be performed to clarify information provided in the questionnaires, observe tenants during routine operations, gain insight into the current condition of each tenant facility and obtain additional information not previously reported in the questionnaire provided in Appendix C.

3.1 Non-Stormwater Discharges

Several sources of non-stormwater discharges are possible at JFK. Non-stormwater discharges include small spills from aircraft, equipment, vehicle fueling and washing, and Fire Fighting Foam (FFF). Aircraft deicing during dry weather can also lead to non-stormwater discharges. Frost can occur on airplane wings during dry weather when surrounding air temperatures reach the "frost point" where water vapor in the air

sublimates directly to ice and coats the wing. Cargo tenants that load and unload cargo have short turnaround time. Deicing has never occurred at JFK airport during non-deicing months and therefore is not a source of stormwater discharge. However, if deicing were required or if deicing were to occur during the non-deicing months, the deicing entity would be responsible for preventing discharges to the stormwater systems. FFF testing is performed at Police Buildings 254 and 269 and is in accordance with Federal Aviation Regulations (FAR) 139 Airport Certification Requirements and for FAA certification. The FFF testing is performed in locations designated by the PANYNJ, and is contained, collected and disposed at permitted facilities. Fire fighting foam can be a potential pollutant during emergency situations where uncontrolled discharge could migrate to the stormwater drainage system. Considering the small number of emergencies where uncontrolled fire fighting foam discharge is required, this activity presents a limited potential for pollutant contact with stormwater.

3.2 Activity Specific Potential Pollution Sources

A brief description of the activities with the greatest potential to be discharged into the stormwater drainage system and the areas in which they are performed is provided below. The locations where target tenant industrial activities are performed have been identified on Figure 4 located in Appendix G.

3.2.1 Aircraft, Vehicle, and Equipment Maintenance

Chemicals such as lubricating oils, hydraulic oils, fuels, degreasers, and other cleaning products are routinely used in airport maintenance activities. Small leaks and spills are not uncommon during maintenance activities; therefore, the potential for pollutant contact with stormwater is greatly increased when these activities are performed outdoors. This potential is further increased if these outdoor activities are performed in close proximity to stormwater drains. Generally, indoor areas only present a potential for pollutant contact with stormwater if floor drains discharge to the stormwater drainage system.

Major aircraft maintenance (such as engine overhauls and repair) is not performed at JFK. The larger tenants at JFK (i.e., American Airlines, JetBlue United Airlines, US Airways, and Delta Airlines, Federal Express, Terminal One Management Group (TOG), Mach 2 Maintenance, and British Airlines) perform some limited aircraft maintenance. A number of smaller tenants also perform minor maintenance in their buildings. Most of this maintenance activity occurs in hangars and some light maintenance is conducted at ramps (including adding oil and changing oil, tires, and lights). Tenants are required to use drip pans when performing maintenance such as adding oil or changing oil at the ramps. Tenants are informed on the potential impacts and risks of pollutants entering the drainage system as a result of maintenance activities. The small spills of chemicals and petroleum hydrocarbons that occur during these limited aircraft maintenance operations are typically cleaned up using granular absorbent materials. There is a potential that residuals from small spills in these areas can become entrained in the overland flow of stormwater runoff and thus drained to catch basins through a Reinforced Concrete Pipe

(„RCP") lateral varying in size from 6-inch to 24-inch. These laterals connect to the main RCP which then increases in size up to 42-inch. Once the main RCP leaves the terminal area the RCP may increase in size up to 72-inch as it enters one of JFK"s 26 outfalls.

Major vehicle and equipment maintenance is not performed at JFK however some minor maintenance activity to vehicles and equipment does occur at a number of tenant locations.

Based on the extent to which these activities are performed, they present a low potential for pollutant contact with stormwater.

3.2.2 Aircraft, Vehicle, and Equipment Fueling

Aircraft and vehicle fueling is performed at various locations throughout the airport property. Aircraft fueling is performed outdoors at the ramp locations at all nine terminals located within the CTA. The greatest concern with aircraft and vehicle fueling is the potential for minor spills, which usually originate from topping-off or overfilling of aircraft and vehicles. The major constituents of aircraft and vehicle fuels are petroleum hydrocarbons. These minor spills can be entrained in the overland flow of stormwater runoff and transported into the stormwater drainage system.

Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police. Tenants and contractors shall complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill or leak, and recommended remedial action.

JFK tenants routinely perform aircraft fueling at ramps and no aircraft fueling occurs indoors. All vehicle fueling occurs outdoors at fueling stations at locations shown on Figure 4 located in Appendix G.

Considering the large volume of aircraft and vehicle fueling performed outdoors at JFK, these activities present significant potential for pollutant contact with stormwater.

3.2.3 Aircraft, Vehicle, and Equipment Washing

Aircraft washing in outdoor areas is discouraged at JFK. Washing operations which occur in outdoor areas are performed by third party entities that cover storm drains prior to the commencement of the washing cycle. All wastewater is captured and taken off site for disposal. No vehicle wash water from third party operations enters either the sanitary sewer or the storm drains. None of the tenants at JFK report outdoor aircraft washing at the airport.

No vehicle washing discharges into the storm sewers. Vehicle washing that is typically associated with the car rental areas occurs within a designated area on the leasehold and discharges directly to the sanitary sewer. Additional vehicle washing areas used by Hertz and Avis rental car agencies, Delta Airlines, American Airlines, Federal Express, JetBlue, and the PANYNJ are indoors. Information gathered from completed tenant questionnaires indicates that some additional tenants perform indoor vehicle washing at their facilities. Vehicle Washing is performed at Allied Aviation Building 90 in an outdoor area by Fleet Washing, Inc. and at DHL Building 263 by Ultimate Aircraft Appearance. No vehicle wash water from either DHL or Allied Aviation enters the sanitary sewer or storm drain.

Considering that these operations are either performed indoors and that all waters are collected for disposal via the sanitary sewer system, or is collected and disposed of off-site when performed in outdoor areas, these activities present a low potential for pollutant contact to stormwater.

3.2.4 Aircraft Sanitary Service

Aircraft sanitary service operations involve connecting a hose from the tank on a lavatory truck to the aircraft's lavatory facilities and emptying the contents into the truck. The contents are drained into triturates that grind the material prior to discharge to the sanitary sewer system. Minor spills, which occur during the connection and disconnection of the hose on to and off of the aircraft, were observed on the ramps and aprons during the site reconnaissance. Personnel are instructed to position a "Waste Catch Bucket" under the lavatory service panel. There is a potential that biocides, bacteria, and other pollutants from these minor spills can become entrained in the overland flow of stormwater runoff and be transported to the stormwater drainage system.

Due to the volume of aircraft sanitary services performed on JFK airport property and the observation of routine minor spills, this activity presents a moderate potential for pollutant contact.

3.2.5 Aircraft Deicing/Anti-Icing

Deicing/anti-icing operations protect runways, taxiways, and aircraft from accidents, which can result from ice and snow build-up on runways, taxiways, and aircraft during inclement weather. Deicing is performed as necessary at JFK during the winter season, (November through March). The deicing/anti-icing season may fluctuate based on local weather conditions and other weather conditions around the country. Aircraft, runways, taxiways, aprons are deiced or anti-iced at JFK airport.

Aircraft deicing removes snow, ice or frost from the aircraft via the use of propylene glycol or a blend of propylene glycol with water (ethylene glycol is strictly prohibited). Aircraft deicing/anti-icing activities are performed by tenants. Deicing agent is sprayed onto the aircraft from a tank truck. The ratio of propylene glycol to

water in Type I deicing fluid varies from tenant to tenant. Type IV anti-icing fluid is usually applied without dilution. Application ratios vary depending on use and weather conditions.

Ice and snow are typically removed from aircraft using a heated mixture of Type I deicing fluid and hot water applied under pressure. Undiluted Type I fluids must contain a minimum of 80 percent propylene glycol by weight, with the balance composed of water, buffers, wetting agents, and oxidation inhibitors. Deicing chemicals used in aircraft deicing must also be non-corrosive to prevent damage to aircraft aluminum and sensitive electronic systems. Type I deicing fluid is applied at gate areas or at designated/centralized deicing facilities. During intense snow and/or freezing rain events at airports where at gate deicing is practiced, aircraft may be deiced again near the end of a runway immediately prior to departure (secondary deicing).

Aircraft anti-icing may follow deicing as a means to prevent the further accumulation of snow or ice on the deiced surfaces either while aircraft are waiting for take-off during especially severe weather, or during overnight parking. Anti-icing is accomplished by applying Type IV anti-icing fluid to clean (i.e., ice free) aircraft surfaces. Type IV anti-icing fluids are also composed of propylene glycol, along with thickeners that allow the fluid to cling to the aircraft and provide prolonged protection and longer holdover times. This increased viscosity is lost when Type IV anti-icing fluid undergoes shear stresses, such as those experienced during takeoff. The unique characteristics of Type IV anti-icing fluid require that special low-shear applicator nozzles be used. In addition, because Type IV fluid adheres to the aircraft until an air speed of approximately 85 knots is reached, it is widely dispersed through sloughing during taxiing and takeoff. Also because of this property, Type IV fluid is only used on larger aircraft that reach a rotational speed of more than 85 knots during takeoff. Anti-icing is conducted at the same locations as deicing, with the exception of secondary deicing locations, where anti-icing is not typically conducted.

Propylene glycol (Type I or Type IV) is stored in either Aboveground Storage Tanks („ASTs"), Underground Storage Tanks („USTs"), or mobile tankers. The deicing vehicles fill up at the storage area and then the aircraft deicing usually occurs at the gates, apron areas, or remote deicing locations near the terminals or hangars. Primary deicing occurs within one hour of takeoff.

Overspray of deicing/anti-icing fluids and drip and shear of deicing/anti-icing fluids during takeoff and landings have the potential to impact stormwater runoff. Deicing material that falls off the aircraft during deicing is collected in catch basins and transported through the airport"s storm drain system. Deicer that remains on the aircraft after application either drips off while taxiing to a runway or shears off the aircraft during takeoff. Deicer that shears off the aircraft either falls onto the runway or infield, or is dispersed as small droplets into the air.

All tenants are required to use propylene glycol for deicing. The use of ethylene glycol and urea is strictly prohibited. Potential pollutants from deicing/antic-icing

activities include propylene glycol, potassium acetate, 5-day biochemical oxygen demand („BOD_5"), Chemical oxygen demand („COD"), total organic carbon („TOC"), and Total Kjeldahl Nitrogen („TKN"). JFK airport is required to maintain a record of the types (including the MSDS) and monthly quantities of deicing/anti-icing chemical used. Tenants who conduct deicing/anti-icing operations shall provide the above information to the JFK facility for inclusion in the JFK BMP for the entire facility. MSDSs for deicing/anti-icing chemicals used at JFK airport and the monthly usage of these chemicals are provided to the PANYNJ.

Deicing chemicals have the potential to substantially increase the $CBOD_5$ in receiving waters and the use of deicing chemicals presents a high potential for contamination of stormwater during winter months. Figure 5 located in Appendix G shows locations of deicing activities at JFK.

Considering the large volume of aircraft and amount of runways and taxiways at JFK and that the deicing activities are performed outdoors prior to or during precipitation events these activities present significant potential for contact with stormwater.

3.2.6 Runway and Taxiway Deicing/Anti-Icing

Runway and taxiway deicing is the responsibility of the PANYNJ airport personnel. The purpose of pavement deicing/anti-icing is to break the bond holding ice and snow to the surfaces of runways and taxiways, facilitating mechanical ice and snow removal to maintain adequate friction between aircraft tires and the runway as identified in BMP 19. Residual deicing materials on the pavement provide anti-icing protection. JFK International Airport uses both solid and liquid FAA-approved pavement deicing materials. Liquid pavement deicing materials are primarily applied in anticipation of deicing events. The liquid deicer used at JFK is Octamelt, a mixture of propylene glycol and potassium acetate. Solid pavement deicing materials are primarily applied to existing ice and snow. The solid deicer used at JFK is Cryotech NAAC (sodium acetate). It should be noted that the PANYNJ has not used urea for deicing/anti-icing since the late 1990"s as a means to be more protective of the surrounding water bodies. In addition, sand is used at JFK to improve traction at the terminal roadway system, pedestrian traffic areas, and parking areas when necessary. Some of the sand applied in the terminal area is collected by sweepers once the pavement has dried, and some of it may end up in the storm drain system. In general, sand applied to the terminal roadway system collects at the edge of the pavement, is trapped by the soils and vegetation of the infield areas, or may travel to the storm drain system.

The PANYNJ has highly experienced operations and maintenance staff, who consistently monitor pavement conditions during snow events. They use a host of tools to assess real-time conditions to maintain safe surfaces. At JFK, which has four runways, a total of 28 runway in-pavement surface condition sensors are utilized. Information from these sensors is sent back to staff managing the snow operations via radio. The PA also utilizes a Saab that is specially equipped to take real-time readings on friction values on runways.

Additionally, pilots will transmit information on runway take off and landing conditions back to the PA. As discussed in Section 4.4.2.5 of this document, all this pavement condition information is shared between the airlines, the FAA Air Traffic Control Tower staff, and the PANYNJ through the web-based IROPSnet.

3.2.7 Fuel Storage

Sixty-two ASTs, which contain aircraft Jet-A fuel, are located at the facility‟s BFF. Forty-six of the tanks are equipped with a floating roof and sixteen have fixed roofs. The PANYNJ is in the process of covering the remaining forty-six aboveground storage tanks with fixed geodesic domes. None of AST‟s are manifolded or connected by common open piping that would allow uncontrolled movement of product between tanks.

Fifty of the AST‟s have a maximum capacity of over 495,000 gallons, with a standard maximum operating capacity of approximately 420,000 gallons and a standard average operating capacity of between 200,000 and 250,000 gallons. The remaining twelve ASTs have a maximum operating capacity of approximately 180,000 gallons and a standard average operating capacity of between 90,000 and 120,000 gallons. Each tank is cathodically protected and equipped with high fluid level monitoring systems. This high level monitoring system activates alarms and shutdown procedures to prevent tank overfilling.

Concrete, steel or concrete/asphalt dikes either surround the BFF ASTs with jet fuel, with 110 percent containment capacity. This 110 percent containment can hold the contents of a single largest tank plus sufficient freeboard to allow for precipitation. The entire tank dike area throughout the facility is sufficiently impervious. The secondary containment areas for the BFF are composed of a bentonite geo-composite liner (Bentomat) on the floor and poured concrete walls, steel walls or concrete Fabrafoam mats over the earthen dikes.

Forty ASTs that contain aircraft Jet-A fuel are located at the SFF. The ASTs are constructed of welded steel, are coated with a rust inhibiting paint, and have floating roofs with a fix covered PVC coated polyester fabric roofs.

The ASTs have a maximum capacity of 100,000 gallons, with a standard maximum operating capacity of approximately 95,000 gallons and a standard average operating capacity of between 60,000 and 85,000 gallons. Each tank is cathodically protected and equipped with high fluid level monitoring systems. This high level monitoring system activates alarms and shut-down procedures to prevent tank overfilling.

All of the SFF ASTs are surrounded by secondary containment systems which have been designed to contain 100 percent of the capacity of the tanks, with sufficient freeboard for precipitation. Secondary containment consists of concrete dikes with 12-inch thick walls and floors with sub-diking between the tanks. Dikes are equipped with

drain valves. Any size spill would be contained within the secondary containment systems unless the secondary containment system failed.

The dikes at both the BFF and SFF are equipped with drain valves. Stormwater collected in the diked area is drained into stormwater retention chambers located at each facility. These retention chambers each have a pump to scavenge floating oil with a skimmer and store it in adjacent 2,000 gallon ASTs. The effluent from the stormwater retention chambers is treated by PANYNJ WWTPs operated by an outside contractor. The effluent from the WWTPs discharges to storm sewers with outfalls on Jamaica Bay and Bergen Basin. The retention chambers are equipped with a high oil level switch that activates an audible alarm. Both the chambers and WWTPs are designed to treat the "first-flush" or 1/2 inch storm.

Any discharge of contained stormwater must comply with Special Condition – Best Management Practices, Number 6 on Page 26 and 27 of 31 of the SPDES Permit. A copy of the SPDES permit is provided in Appendix A.

Allied Aviation Services currently has a SPCC Plan that contains the appropriate spill prevention and clean up measures. A PANYNJ consultant has reviewed the plan and verified that the plan contains the appropriate spill prevention and clean up measures.

3.2.8 Chemical Storage

JFK airport stores paints and thinners in stockrooms, parts cleaning fluids at its automotive garages, and anti-icing and deicing propylene glycol at PANYNJ and tenant areas. Chemicals stored outdoors at the JFK airport include propylene glycol; all other chemicals are located indoors (ethylene glycol is strictly prohibited). Chemicals are stored in double walled tanks located on concrete slabs with absorbent material available to facilitate cleanup or in secondary containment to capture any spills.

3.2.9 Building and Grounds Maintenance

Most of the building and grounds maintenance at JFK is performed by the PANYNJ. Several tenants subcontract building maintenance services to outside professionals. Pesticides and herbicides are used to maintain aprons, runways, and building green spaces. During rainfall events, accumulated residues from pesticide and herbicide usage can come into contact with stormwater and be transported into the stormwater drainage system.

The PANYNJ contracts with a licensed pesticide and herbicide applicator to service all of the interior and exterior areas however, licensed maintenance staffs also serve as applicators of JFK. Several tenants" report that they also contract with a licensed applicator, which augments the service provided the PANYNJ.

Due to the limited areas of pervious surfaces at on the Airport property this activity presents a moderate potential for pollutant contact.

3.2.10 Outdoor Storage Activities

Raw materials, by-products, leaking equipment and vehicles, and containers exposed to stormwater at outdoor storage areas can adversely impact stormwater runoff.

There are numerous vehicle and equipment storage areas throughout JFK airport. Several tenants store gasoline and/or diesel fuel on airport property. Most of this storage is located outdoors and is primarily comprised of ASTs, drums, and stationary tanker trucks. Materials stored outdoors at JFK airport include jet fuel, gasoline, diesel, waste oil, lubricating oil, propylene glycol, potassium acetate, and aircraft and vehicle detergents. Ground support equipment and vehicles are also parked or stored outdoors at various locations throughout JFK airport. Fluids (e.g. fuel oil, antifreeze, hydraulic fluid, chemical toilet water, and deicing fluids) leaking from vehicles can adversely impact stormwater runoff. Potential pollutants from outdoor storage activities include oil and grease, petroleum hydrocarbons, metals, volatile organic compounds, fecal coliform, BOD_5, TOC, COD, TSS, pH, propylene glycol, and potassium acetate.

Fifty-five gallon storage drums are used at JFK airport to store virgin and waste material. Many of these drums are located in interior maintenance areas and as such they are not being exposed to stormwater. The floor drains from many of the indoor storage areas directly discharge into the sanitary sewer system.

Considering the high number of aircraft and ground vehicle fueling and fuel truck staging areas and the frequency with which minor spills occur, this activity presents a significant potential for pollutant contact.

3.3 Potential Pollution Sources and Pollutant of Concern

Many of JFK"s tenants perform activities in areas that present the potential for stormwater pollutants to be discharged into the stormwater system. The tenants and their associated activities are summarized in Table 2 located in Appendix F. The tenant activities with the greatest potential to contribute to stormwater pollution and some of the contaminants of concern for each activity are listed below:

Aircraft Deicing/Anti-icing (AD)

- Propylene Glycol
- Sodium acetate
- Potassium acetate

Aircraft, Vehicle, and Equipment Maintenance (AM, GM, EM)

- Oil and grease
- Petroleum hydrocarbons
- Propylene Glycol
- Halogenated Solvents

- Non-halogenated Solvents

Aircraft, Vehicle, and Equipment Fueling (AF, VF, EF)

- Petroleum hydrocarbons
- Fuel Vapors

Aircraft Sanitary Service (AS)

- Biocides
- Bacteria

Building and Grounds Maintenance (BGM)

- Pesticides
- Herbicides
- Oils and grease
- Petroleum Hydrocarbons

Chemical Storage (CS) and Fuel Storage (FS)

- Petroleum hydrocarbons
- Lubricants
- Paints
- Battery Acid
- Solvents

Food Handling Operations (FH)

- Oil and grease
- Bacteria

Firefighting Foam Testing (FT)

- Volatile organic compounds

Runway and Taxiway Deicing/Anti-icing (R-TD)

- Propylene Glycol
- Sodium acetate
- Potassium acetate

Lavatory Service Operations

- Lavatory Chemicals
- Lavatory Waste
- Lavatory Truck Wash Water

Table 2 located in Appendix F lists specific pollutants that may be discharged into the stormwater drainage system from each tenant location based on the activities conducted by the tenant. The pollutants consist primarily of petroleum products (such as fuels, oils, and greases), halogenated and non-halogenated solvents, and deicing fluids (propylene glycol). Oils, greases, petroleum hydrocarbons, solvents, and propylene glycol from aircraft, equipment, and vehicle fueling, maintenance, and washing activities are potential pollutants because the activities are generally performed outdoors in

proximity to storm drains. Pollutants from these activities potentially can be transported to the stormwater drainage system either as direct spills (dry weather flow) or from rainfall runoff that mobilizes residual contaminants (wet weather flow).

3.4 Hard-Piped Non-Stormwater Discharge Identification

Beginning in the late 1970's, the PANYNJ implemented a program to identify and eliminate all hard-piped non-stormwater discharges. As such, PANYNJ staff is not aware of any existing hard-piped, non-stormwater discharges. Further, in the event new or suspected hard-piped, non-stormwater discharges are discovered, they will be dye/smoke tested for confirmation and sealed as needed.

Hard-piped illicit connections are defined as equipment that discharges directly to the stormwater drainage system. These could include oil/water separators, interior floor and trench drains, utility sinks, and chiller and boiler overflow/blow down lines.

3.5 Runoff and Erosion Management

There is little potential for erosion problems at JFK since most of the airport is impervious. The stormwater drainage system is a nearly completely closed conduit („RCP") that discharges directly into Bergen Basin, Thurston Basin, and Jamaica Bay. The principal potential source for erosion at JFK can occur during construction activities. Construction projects of any size should be reviewed before the project begins to determine if adequate soil and erosion control procedures will be implemented.

In addition, any construction project that involves soil disturbance of one or more acres, must follow the SPDES Permit "Special Conditions–Best Management Practices", Item 4, Part B "Stormwater Pollution Prevention Plans (SWPPs) Required for Discharges of Stormwater From Construction Activities to Surface Waters," which requires the preparation and submittal of a Notice of Intent (NOI) and SWPPP (see Appendix D, BMP 7).

3.6 Spill Reporting and Leaks

A list of reportable quantity spills and leaks of toxic or hazardous pollutants that have occurred during the past three years at areas that are exposed to precipitation or that otherwise drain to a stormwater conveyance at JFK airport are recorded. Each act of non-compliance shall include a short description of the non-compliance, a description of any actions and mitigation taken or proposed by the PANYNJ or tenant entity to limit environmental impact associated with the non-compliance. The PANYNJ or tenant shall provide an estimate of the date when the corrective or mitigation action will be completed.

Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills

should be reported to the Manager, Environmental Services and PANYNJ Police. Tenants and contractors shall complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill or leak, and recommended remedial action.

3.7 Stormwater Monitoring and Sampling

Stormwater monitoring and sampling data provides information on the quality of stormwater runoff from JFK airport. The stormwater analytical data is used to identify the types and sources of pollutants and to provide a means for evaluating the environmental risk for stormwater runoff. JFK airport is subject to various stormwater monitoring and sampling as required by Special Condition 1, Page 17 of 31 of the SPDES Permit.

3.8 Snow Melters

Mobile snow melters are strategically placed proximate to each of the terminals to assist the snow removal operations. Snow or slush, which may be mixed with deicing material, is plowed by trucks from the terminal area to the snow melters, and discharged directly into the stormwater drainage system.

4 Stormwater Management Controls

A stormwater BMP is defined as any program, technology, process, siting criteria, operating method, measure or device that controls, removes, or reduces pollution. The permit requires the development and implementation of BMPs to address pollutants originating from industrial sources. Appropriate BMPs for industrial facilities were selected based on a site reconnaissance, tenant interviews, and information obtained from tenant questionnaires. Areas of actual or potential pollutant contact are evaluated and applicable BMPs are recommended or implemented to eliminate or minimize the potential for discharge of stormwater pollutants. BMPs can be classified into categories based on whether the intended stormwater control objective is quality control or quantity control.

Quality control BMPs are designed to limit the types and concentrations of pollutants found in stormwater runoff, and are subdivided into source control BMPs and treatment control BMPs. Source control BMPs are operational practices intended to prevent pollutants from entering surface waters by altering performance of activities to eliminate or minimize pollution produced as a result of the activity. Source control BMPs generally involve eliminating a target activity"s exposure to stormwater and typically include the following:

- Moving an outdoor operation indoors;
- Covering an outdoor activity or storage area with either a roof or a lean-to;
- Placing chemical or petroleum storage containers in a shed or under a lean-to;
- Storing hazardous materials/wastes in covered, contained areas.

A properly designed and implemented spill response program can also be an effective method for protecting stormwater quality. Spill response programs rely upon employee awareness and training to be effective.

Treatment Control BMPs are a type of quality control BMP that treats the stormwater to remove pollutants. Examples of treatment BMPs include:

- Oil/water separators;
- Grass swales;
- Retention basins;
- Infiltration; and
- Filtration.

Quantity control BMPs are intended to control the runoff volume or peak discharge rate. The use of stormwater detention basins is one example of a quantity control BMP. A properly designed and maintained detention basin can also decrease the amount of pollutants entering surface waters, thereby improving receiving water quality.

Section 2.5 described industrial activities typically performed by JFK tenants. A more detailed discussion of potential pollution sources is described in Section 3. Activities performed indoors have less potential to affect runoff water quality, although practices such as hosing down indoor floor space to outdoor areas after performing industrial activities contradict the potential water quality benefits of performing industrial activities under cover.

JFK tenants perform industrial activities directly related to aviation, such as aircraft operation, maintenance, and cargo handling, as well as general industrial activities such as vehicle maintenance, equipment storage, and facility maintenance. Many of the JFK tenants have already implemented a variety of acceptable BMPs to minimize the effects of these activities on stormwater quality. The following sections supplement and enhance current BMP implementation and provide for consistent airport-wide application.

4.1 Good Housekeeping Practices

In March 1998, the PANYNJ developed activity-specific Good Environmental Practices („GEPs") for JFK airport. Good housekeeping practices that address housekeeping, operational, structural and contingency considerations that can be taken to help achieve environmental compliance are utilized at the JFK facility. The purpose and intent of good housekeeping is to minimize the exposure of pollutants to rainfall and runoff. The following practices are the basis of a good housekeeping program and are the minimum acceptable at JFK airport:

- Walkways, aisles, roadways, and exits are to be kept clear at all times.
- Small spills are to be cleaned up immediately and disposed of in an approved manner.
- All refuse is to be placed in an appropriate container.
- Material and products are stored in a neat and orderly fashion with particular attention not to block walkways or access routes.
- Chemical containers are to be stored in enclosed or covered areas whenever possible to minimize contact with stormwater.
- All chemical storage containers are to be properly labeled.
- Empty drums are to be placed only in their designated area.
- Chemical containers and/or drums are to be kept closed at all times when not in use.

- Inside floors are to be kept clear of debris and spills and are to be swept or mopped regularly.
- Tools and equipment are to be kept clean and neatly stored when not in use.

4.2 Minimum Best Management Practices

The maximum benefit of a stormwater pollution prevention program can be achieved only if tenants implement the BMPs that correspond to the target industrial activities performed at their facilities. Special Condition – Best Management Practices, Number 4.A on Page 25 of 31 of the SPDES Permit requires development of 13 minimum BMPs to prevent or minimize the potential release of pollutants to the waters of the State.

4.2.1 Pollution Prevention Team

The Environmental Services Unit performs a variety of inspections of facilities owned and operated by the PANYNJ and tenants. Individual tenants will be required to have designated personnel responsible for implementing the BMPP at corresponding tenant sites. Table 3 located in Appendix F lists the members of the Pollution Prevention Team („PPT") for all facilities covered under the JFK BMPP. This list will be updated when a change to the personnel occurs. It is the responsibility of each facility to notify the Environmental Services Unit when there are personnel changes. Other PPT member responsibilities include ensuring implementation of appropriate BMPs, retaining a copy of the implemented BMPP onsite, and providing feedback to the Environmental Services Unit regarding BMPP compliance.

4.2.2 Reporting of BMP Incidents

All spills that occur on JFK Airport property are to be reported to and logged by the Environmental Services Unit. These spills will be added to the spill history and kept with the BMPP. The PPT member or designated representative will document the chemical spilled, location of spill, quantity spilled, date and time, corrective action taken and whether the spill resulted in a non-stormwater discharge. Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services Unit and PANYNJ Police. Tenants and contractors shall complete a PANYNJ Spill Reporting Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill or leak, and recommended remedial action.

4.2.3 Risk Identification & Assessment

The PANYNJ requested that all tenants complete a questionnaire to determine the potential pollutant sources from each tenant and their leasehold. Results of the questionnaire provided the PANYNJ with information, at a minimum, with respect to the type of activities performed at their site, the type of materials stored which potentially can contribute pollution to stormwater runoff from JFK. Based on this information the most appropriate BMPs were selected to prevent or control pollutants from these areas. A majority of tenants at JFK have been provided with the questionnaire presented in Appendix C of the June 2009 BMPP. The PANYNJ has presented the information gathered from tenants completed questionnaires to date in the BMPP and Tables 1 and 2.

4.2.4 Employee Training

The PANYNJ shall conduct an annual BMPP implementation training seminar for all PPT members and designated tenant representatives and facility personnel. These members in turn are to train their own staff. Training will cover items such as prohibited discharges, inspections, spill response, good housekeeping, and implementation of BMPs, deicing activities, and record keeping procedures. Training will be provided on an annual basis and as a required provision for new tenant occupancy. The training program implementation, including tenant participation, shall be thoroughly documented throughout the permit period.

4.2.5 Inspections and Records

As part of the comprehensive site compliance evaluation, qualified facility personnel will inspect designated equipment and areas of the airport on an annual basis to assess the effectiveness of BMP implementation and the overall BMPP. All inspection records discussed in Section 5 should be kept for at least three years.

4.2.6 Security and Site Access

Proper security measures need to be taken to prevent unauthorized access to secure areas at JFK Airport. The PANYNJ shall train security personnel to be aware of potential illicit discharges to state waters. Training shall include lighting and access control.

4.2.7 Preventative Maintenance

A preventative maintenance program involves routine inspection and maintenance of structural BMPs (i.e. cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to identify and correct conditions that could cause breakdowns or failures, which could potentially result in the discharge of pollutants to the stormwater drainage system. This includes identifying equipment and areas to inspect and development of a schedule for routine inspections. The prompt repair or replacement of defective equipment found during inspections and testing should be

performed and documented. Include a suitable records system for scheduling tests and documenting inspections in the preventative maintenance program.

4.2.8 Good Housekeeping

Good housekeeping requires routine maintenance of equipment and chemical storage areas in a clean and orderly manner to reduce the likelihood of contaminating stormwater runoff. Basic operation and maintenance BMPs incorporated into a Good Housekeeping program include maintenance conducted on the terminal apron and in dedicated hangars. The following practices are part of the Good Housekeeping program:

- Performing maintenance activities indoors;
- Maintaining an organized inventory of material used in the maintenance areas;
- Draining all parts of fluids prior to disposal;
- Preventing the practice of hosing down the apron or hangar floor;
- Using dry cleanup methods, and
- Collecting stormwater runoff from the maintenance area and providing treatment or recycling.

4.2.9 Materials/Waste Handling, Storage, and Compatibility

Employees should be trained in which materials are hazardous, where they are stored, how they are labeled, and in their proper use. A program has been established to identify material, promote waste reduction and recycling. Establish designated storage areas and segregate waste. Communicate recycling requirements and instructions.

4.2.10 Spill Prevention and Response

A Spill Prevention and Response (SPR) Plan should be evaluated to identify and characterize potential spills, to eliminate or reduce spill potential, and how to respond when a spill occurs. The SPR should include, at a minimum, a copy of the NYSDEC registration application and certificate issued under 6 NYCRR 596.2, a detailed site plan that locates and identifies tanks, transfer stations, and connecting piping, a plan for spill response at the facility which includes a prediction of the flow or dispersion of a spill, a map showing areas that could be impacted by a spill including sewers, wells, ditches, etc., spill reporting procedures, plans for drills, summary of releases occurring in the last five years including reports associated with these releases, identification and assessment of causes of spills, leaks, releases at the Facility, status report on compliance with 6 NYCRR, and the names and phone numbers for emergency contacts, coordinators, and clean-up contractors.

4.2.11 Erosion and Sediment Control

Due to the nature of the site, the principal potential source for erosion at JFK can occur during construction activity. All construction projects of any size should be reviewed before the project begins to determine if adequate soil and erosion control procedures will be implemented. In addition, any construction project that involves soil disturbance of one or more acres, must follow the SPDES Permit "Special Conditions – Best Management Practices", Item 4, Part B "Stormwater Pollution Prevention Plans (SWPPs) Required for Discharges of Stormwater From Construction Activities to Surface Waters," which requires the preparation and submittal of a Notice of Intent (NOI) and SWPPP (see Appendix D, BMP 7).

4.2.12 Management of Runoff

The BMPs in Appendix D have been proven to be effective at reducing the discharge of pollutants to the stormwater drainage system at aviation facilities.

4.2.13 Street Sweeping

Sweeping can remove small quantities of solids from areas that are exposed to precipitation or stormwater runoff. Sweeping areas that include dust can take place before rainfall or contact with stormwater runoff.

4.3 Activity Specific BMPs

Table 4 located in Appendix F identifies recommended BMPs that are applicable to JFK activities. Each tenant is required to implement at least one BMP for each activity, although the particular BMP implemented is determined by the tenant. The table focuses on low cost source control BMPs, but identifies treatment control BMPs such as oil/water separators, where applicable.

In March 1998, the PANYNJ developed activity-specific GEPs" for JFK and updated them as BMPs in March 2008. These activity-specific BMPs are attached in Appendix D and apply to the following activities:

BMP 1: Aircraft Deicing/Anti-icing
BMP 2: Aircraft, Vehicle, and Equipment Fueling
BMP 3: Aircraft, Vehicle, and Equipment Maintenance
BMP 4: Aircraft, Vehicle, and Equipment Washing
BMP 5: Building Cleaning and Maintenance
BMP 6: Chemical and Petroleum Storage and Handling
BMP 7: Elimination of Non-Storm water Discharges to Storm Drains
BMP 8: Spills Management
BMP 9: Lavatory Service Operations
BMP 10: Oil/Water Separators
BMP 11: Outdoor Handling of Material
BMP 12: Outdoor Material and Equipment Storage

BMP 13: Waste Management
BMP 14: Fire Fighting Foam Discharge
BMP 15: Storm water Pollution Prevention Education
BMP 16: Street Sweeping & Storm water Facility Maintenance
BMP 17: Security
BMP 18: Rubber Removal
BMP 19: Runway and Taxiway Anti-icing

4.4 **Source Reduction**

To the maximum extent possible all tenants are required to reduce, reuse, and recycle pollutants generated at JFK. JFK tenants are expectant to consider substitute chemicals, segregate activities, and promote recycling. Special Condition – Best Management Practices, Number 7.B.ii (a) and (b) on Page 28 of 31 of the SPDES Permit suggests alternatives to the use of glycol based deicing/anti-icing chemical, evaluate present application rates to ensure against excessive over application by analyzing application rates and adjusting as necessary, consistent with consideration of flight safety, and require that tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials to determine whether excessive application of deicing/anti-icing chemicals occurs, and adjust as necessary, consistent with consideration of flight safety. The following are some alternatives to the use of glycol based deicing/anti-icing chemical that are being used at the JFK airport that can reduce the aggregate amount of deicing/anti-icing chemicals used and/or lessen the environmental impact.

4.4.1 Runway Deicing Operations

The PANYNJ has highly experienced operations and maintenance staff, who consistently monitor pavement conditions during snow events. They use a host of tools to assess real-time conditions to maintain safe surfaces. At JFK, which has four runways, a total of 28 runway in-pavement surface condition sensors are utilized. Information from these sensors is sent back to staff managing the snow operations via radio. The PANYNJ also utilizes a Saab that is specially equipped to take real-time readings on friction values on runways. Additionally, pilots will transmit information on runway take off and landing conditions back to the PANYNJ. These techniques are utilized to efficiently determine the concentrations and amount of deicing chemical to be applied to maintain traction, adjusting as necessary, consistent with flight safety.

4.4.2 Aircraft Deicing/Anti-icing Operations

4.4.2.1 Forced-Air Deicing Systems/Hot Air Blast Deicing

Hot air blast deicing systems use heated compressed air to blow snow and ice off of aircraft wings. Air blast deicing may be followed by conventional deicing/anti-icing or accompanied by a fine spray of propylene glycol to prevent new ice formation. A self-contained, truck mounted unit which removes snow and ice from aircraft surfaces

by a high pressure air jet combined with a fine spray of propylene glycol can be used to prevent new ice formation.

Some of the tenants use this hot air blast deicing system with newer trucks and as tenants are obtaining new trucks the PANYNJ shall encourage that they are equipped with this feature.

4.4.2.2 Infra-Red Technology/Infra-Red Heaters

Infra-red deicing systems have been developed to deice small aircraft. This system uses a natural-gas-fired radiant heater located inside a drive-through hangar. Reportedly the system has a lower cost per treatment, one-tenth the cost of chemical deicing. However, the technology requires a drive-through building large enough to contain the aircraft and must be located adjacent to active runways. Follow-up chemical anti-icing is usually required to provide anti-icing protection and prevent the re-freezing of water in the aircraft‟s moving parts.

JFK airport currently uses an Infra-Red Radiant Deicing („IR‟) facility. IR deicing eliminates the use of the primary deicing with propylene glycol. However, a minimal amount of Type IV propylene glycol is applied post the IR, which presents a low potential for contamination of stormwater.

4.4.2.3 Optimized Fluid Mixtures

The FAA mixture requirements for “clean aircraft concept” are based on the difference in temperature between the outside air temperature and the freeze point temperature of the deicing mixture. This is known as the “buffer”. For example, a typical 50/50 mixture of a standard Type I deicing fluid and water has a freeze point of -18ºF and, therefore, can be used when the outside air temperature is as low as 0ºF, allowing for the 18ºF buffer.

Airlines typically use a 50/50 mixture of Type I deicing fluid and water for deicing purposes. However, the blend of undiluted deicing fluid and water required to achieve the necessary buffer is dependent on ambient temperature, with the ratio ranging between 60 percent deicing fluid to 40 percent water for temperatures below as 0ºF, and 20 percent deicing fluid to 80 percent water for temperatures above ~25ºF. Hot water alone can be effective at temperatures above 28ºF. This fact allows significantly more dilute deicing fluid solutions to remain effective when used at airports located in regions where the temperature rarely falls below as 20ºF.

At the JFK airport some tenants perform regular monitoring of air temperature allows the use of deicing mixtures with less than the typical 50 percent concentration of propylene glycol, thereby reducing the overall amount of deicing fluid applied. This technique provides for a direct reduction in the total amount of deicing fluid used with minimal impact on airlines operations. In addition, the use of urea and ethylene glycol are strictly prohibited and its use has been discontinued.

4.4.2.4 Hybrid Deicing Systems

An innovative aircraft deicing system utilizing forced hot air in combination with a low-flow deicing fluid nozzle has been developed. The system is configured similarly to a conventional deicing truck with an operator bucket mounted on a boom and dual tanks for Type I and Type IV deicing and anti-icing fluids. In addition, the unit has a turbine compressor that provides a high velocity air stream. The heart of the system is an applicator turret mounted on the bucket. The applicator head has a ring-shaped nozzle for the air stream and dual (9 and 16 gallons per minute (gpm)) nozzles in the center of the ring for deicing fluid conventional deicing nozzles flow at 45 gpm). Separate controls are provided for each of the nozzles. The applicator head has an operating range of about 10 feet at the 9 gpm flow, and 15-20 feet at 18 gpm. The system can be operated in either deicing or anti-icing modes.

Overall, the hybrid deicing unit can result in a reduction in deicing fluid usage by tenants at JFK airport. Reductions in BOD loads from glycol can be greater because variable fluid mixtures can be used to suit ambient temperatures, rather than using a single mixture (e.g., 50/50 mix of glycol and water).

Some of the tenants use this system with newer trucks and as tenants are obtaining new trucks the PANYNJ shall encourage that they are equipped with this feature.

4.4.2.5 Irregular Operations Network

JFK airport uses an Irregular Operations Network („IROPSnet") during winter weather events. The IROPSnet is a communication tool used to more effectively schedule aircraft departures to eliminate or greatly reduce the need for secondary application of deicing. Departure slots are allocated with coordination between the PANYNJ, the FAA, and the airlines operating through JetBlue. The system is designed to minimize cancellations and delays, and allows for aircraft to take off immediately after the application of deicing material.

4.4.2.6 Physical/Mechanical Methods

Brooms and ropes have historically been used to remove large accumulations of snow from aircraft, and are still used by some airlines prior to deicing to reduce the quantity of deicing fluid necessary to clean the aircraft.

4.5 **Management of Runoff**

In an effort to address the recent environmental concerns associated with wintertime aircraft operations, significant effort has been focused on developing solutions for the management of deicing chemical runoff. These included the development of alternative aircraft and runway deicers that are more environmentally friendly, innovative deicing fluid application methods, and alternative collection and treatment methods. Although significant progress has been made toward developing solutions for the

management of deicing wastes, additional effort is needed to further understand the problems and cost effective solutions associated with control of deicing chemical runoff.

Special Condition – Best Management Practices, Number 7.B.iii on Page 28 and 29 of 31 of the SPDES Permit indicates that the PANYNJ shall describe and implement a program to control to manage contaminated runoff to reduce the amount of pollutants being discharged from JFK airport. The stormwater management program shall describe the primary issues that are currently driving decisions regarding the types of deicing runoff for collection systems, recovery systems, and conveyance systems.

The PANYNJ has completed an evaluation of the components of a program for the management of runoff from deicing/anti-icing operations. The Best Management Plan Report submitted in September 2008 evaluated all alternative BMPs available to reduce the discharge of deicing and anti-icing materials, prioritized those practices, estimated the cost to implement the practices, and provided a reasonable schedule for implementing the practical alternatives. The report subsequently evaluated alternative deicing or anti-icing BMPs either not currently in use or in limited implementation at JFK, and assessed their efficacy as potential enhancements to the airport"s existing program for managing the discharge of deicing runoff.

The PANYNJ is also, pursuant to Special Condition Number on Page 17 of 31 of the SPDES Permit, performing a water quality assessment for Jamaica Bay to determine the impacts of the current deicing/anti-icing operations at JFK airport. Once the study is completed, the PANYNJ will assess the results and evaluate the need to implement the various components of a deicing/anti-icing runoff management program at the site.

5 Comprehensive Site Compliance Evaluation

5.1 BMP Implementation Program

Special Condition – Best Management Practices, Number 7.B.iv and 7.B.v on Page 29 of 31 of the SPDES Permit indicates that the PANYNJ shall describe and implement a BMP implementation program that will specify the routine facility inspections and discuss the comprehensive site compliance evaluations. The implementation program described below is designed to facilitate the proper and timely installation and maintenance of existing and proposed BMPs for JFK tenants. The implementation program includes a recommended schedule, a list of the PPT personnel, employee training requirements, facility inspection protocol, monitoring requirements, recordkeeping and reporting procedures, BMPP updates, and comprehensive site compliance evaluation.

5.1.1 Schedule for BMPP Implementation

The BMPs identified in this BMPP shall be implemented by November 6, 2009 as indicated by NYSDEC to comply with the SPDES Permit.

5.1.2 BMPP Training

Tenant training will be provided on an annual basis and as a required provision for new tenant occupancy. The PANYNJ Environmental Services Unit shall conduct an annual BMPP implementation training seminar for all PPT members. These members in turn are to train their own staff. Training will cover items such as prohibited discharges, inspections, spill response, good housekeeping, and implementation of BMPs, deicing activities, and record keeping procedures. The training program implementation, including tenant participation, shall be thoroughly documented throughout the permit period.

5.1.3 PANYNJ Routine Facility Inspections

As required by the SPDES Permit, the PANYNJ Environmental Services Unit inspections are conducted to identify environmental infractions and/or deficiencies for all facility components or systems including:

- material storage areas
- in-plant transfer, process, and material handling areas
- loading and unloading operations
- storm water, erosion, and sediment control measures

- process emergency systems, and sludge waste disposal areas
- deicing and/or anti-icing materials storage and handling areas.

The facility components and systems the PANYNJ currently inspects include:

- Refueling Stations
- Fuel Hydrant Pits
- Catch Basins
- Outfalls
- Wastewater Treatment Plants
- Underground/Aboveground Storage Tanks

Specific facility components and systems for each operation are inspected by the PANYNJ. Tenant and PANYNJ entities are generally inspected for appropriate housekeeping practices such as insufficient signage, lighting, electrical equipment, fuel dispensers, latching devices, vapor recovery on nozzles, pump operations, or fill boxes. Each inspection summary includes a comments/recommendation section to highlight areas of improvement and/or non-compliance not specifically identified on the inspection sheet. The user (tenant or PANYNJ entity if applicable) has primary responsibility for their own areas and facilities to maintain compliance with good housekeeping and applicable environmental regulations set forth in the SPDES Permit. Each inspection is performed to adhere to specific BMPs identified in the BMP Plan required by the SPDES Permit.

5.1.4 Environmental Infractions

The PANYNJ Environmental Services Unit issues an Environmental Infraction when a regulatory offense or a violation of the JFK BMPP has occurred during an inspection. Environmental Infractions can be identified in the Inspection Sheets and can range from unacceptable housekeeping to outdated Petroleum Bulk Storage registration. In addition to conducting the inspection and completing the Inspection Sheet the Environmental Services Unit will also interview the tenant supervisor. The Inspection Report documents the results of the inspection and is provided to the tenant supervisor to determine if any environmental infractions were noted. The following corrective action should take place if an environmental infraction is identified during the inspection.

- The Environmental Services Unit will notify the tenant representative that an environmental infraction has occurred and depending on the type of infraction requests corrective action.
- The Environmental Services Unit will requests assessment of the infraction to determine if immediate corrective action can be taken to rectify the issue or if additional measures are required to correct the infraction.

- The tenant will be required to inform the Environmental Services Unit when the corrective action will be accomplished.
- The Environmental Services Unit informs the tenant representative that a follow up inspection will be conducted within a set period.
- The Environmental Services Unit documents the infraction on the individual Inspection Report.
- The Environmental Services Unit reports all infractions requiring immediate attention (e.g. spills).
- The Environmental Services Unit will issue an Environmental Infraction Notice to the tenant informing them that an infraction has occurred and that corrective action is required.
- The Environmental Services Unit will review the results of the previously conducted inspection to confirm whether additional action is required prior to conducting the next inspection.

Many tenants operating at JFK Airport also perform self inspections, environmental compliance audits, and periodic reports intended to assess and make sure their facilities are in compliance. Tenants are responsible for addressing all non-compliance issues at their respective facilities in accordance with Federal, State, and local environmental regulations as per their lease agreements. Tenants must provide compliance supporting documentation, photographs of compliant corrective measures taken, and current registration certificates if required from previous infractions.

Follow-up inspections are performed to identify if the environmental infraction has been corrected. Follow-up photos are used to document corrective actions. If no corrective action has been taken in response to previous environmental infraction notice and direction, the Environmental Services Unit may take formal steps under the tenant‟s lease agreement and/or report the infraction to the NYSDEC Police for enforcement.

5.1.5 Annual Facility Review and Site Inspection Reporting

The results of the inspections are presented in an Annual Facility Review and Site Inspection Report for JFK Airport including a detailed description of the inspections performed, frequency, reports generated as a result of the inspection, and target BMP compliance activities. A report documenting the annual facility review and site inspection evaluation shall document the date, time, inspection methodology, inspectors, BMP conformance evaluation results, and the overall effectiveness of the stormwater pollution prevention program. The report consists of a series of inspections, results, and review of all PANYNJ and tenant facility components and systems including; fueling stations, waste storage areas, above ground and underground storage tanks (e.g. petroleum, propylene glycol and chemical storage), spills management and oil/water separators, Port Authority groundwater remediation systems and wastewater treatment plants, loading areas, material handling area, deicing/anti-icing; which have the potential

to discharge to one or more of the 26 JFK Airport outfalls listed in the SPDES Permit, covering 15 drainage areas (A through P). The results of monitoring efforts conducted throughout the year will also be included with this report. A summary of the reporting requirements, frequency, and required forms to facilitate development of the Annual Facility Review and Site Inspection Report are provided in the table below.

Reporting forms have been developed and will be used to properly document all inspections and gather the necessary information for record keeping and annual reporting. The 2009 Facility Review and Site Inspection Report will identify, report, and evaluate the following.

5.1.5.1 Spill Reporting

Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police.

Tenants and contractors shall complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill or leak, and recommended remedial action.

5.1.5.2 Deicing/Anti-icing Reporting

Tenants at JFK airport are required to maintain a record of the types (including the MSDS) and monthly quantities of deicing/anti-icing chemical used. Tenants who conduct deicing/anti-icing operations shall provide the above information to the JFK facility for inclusion in the JFK BMPP for the entire facility. MSDSs for deicing/anti-icing chemicals used at JFK airport and the monthly usage of these chemicals are currently provided to the PANYNJ by tenants.

5.1.5.3 BMP Implementation

The following procedures shall be conducted to evaluate and ensure successful implementation of the BMPP for JFK Airport:

- Effective training for tenant and PANYNJ employees working in all facilities.
- Regular inspections facilities, tenant and PANYNJ operations, and management controls.
- Periodic monitoring of BMP performance consistent with SPDES Permit requirements semi-annually and at least once during deicing season.

- Follow-up action to correct environmental infractions in BMP implementation noted during inspections.
- Accurate record keeping, tracking, training, inspections, monitoring, and BMP maintenance.

Tenants and contractors shall complete a PANYNJ BMP Implementation Form and submit to the PANYNJ semi-annually and at least once during deicing season. The BMP Inspection Form including procedures and protocols for inspection to be performed to adhere to specific BMPs identified in the BMPP required by the SPDES Permit. The BMP Inspection Form will be used to assess BMPP implementation effectiveness and the results of the BMP inspections will be presented in the Annual Facility Review and Site Inspection Report for JFK Airport.

Any necessary revisions to the BMPP, based on the facility inspections, will be documented and incorporated into a revised BMPP. The BMPP will also be amended if there are changes in construction, operation, or maintenance that may affect the discharge of pollutants to surface water, groundwater, or the storm water drainage system. The BMPP will also be modified if certain BMPs are shown to be ineffective in achieving the general objective of controlling pollutants in storm water.

BMPP Reporting Requirements		
Reporting Requirement	**PANYNJ Forms**	**Frequency**
Spill Report	Spill Reporting Form	Within one day of incident
Deicing/Anti-icing Reporting	Deicing/Anti-icing Report Form	Monthly
BMP Implementation	BMP Performance Form	Semi-annually and at least once during deicing season
Environmental Infraction Corrective Action	Inspection Report	Upon occurrence

5.1.5.4 Monthly and Quarterly Monitoring

The SPDES Permit requires monthly and quarterly monitoring for the following parameters at outfall numbers 004, 005C, 007A, 010, 016, and 022 as shown on Table 5. Monitoring must be conducted in accordance with test procedures approved under 40 CFR Part 136 and monitoring documentation must contain the following information:

- The date, exact place, and time of sampling and measurements;

- The initials or name(s) of the individuals who performed the sampling or measurements;
- The date(s) on which analyses were performed;
- The time(s) analyses were initiated;
- The initials or name(s) of the individual(s) who performed the analyses;
- References and written procedures, when available, for the analytical techniques or methods used; and
- The results of such analyses, including bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

The PANYNJ is required to submit the monitoring results in a Discharge Monitoring Report (DMR) to the NYSDEC on a monthly basis. All monitoring reports, sample data, applications, and other records pertaining to monitoring efforts should be retained for at least 5 years from the date of the record. A Notice of Non Compliance Report is completed by the PANYNJ when an exceedance is presented in the DMR. The PANYNJ then proceeds to conduct an inspection of the facility in an attempt to determine the source which resulted in the exceedance by checking equipment, conducting inspections at tenant areas, as well as check and monitor facility locations. In addition a re-sampling of the outfall may also be warranted to determine the source of the pollutant that caused the exceedance.

5.1.6 BMPP Content Review

BMPP elements will be reviewed annually. Any necessary revisions to the BMPP, based on the facility inspections, will be documented and incorporated. The BMPP will also be amended if there are changes in construction, operation, or maintenance that may affect the discharge of pollutants to surface water, groundwater, or the stormwater drainage system. Individual tenants are required to notify the Environmental Services Unit as early as feasible when contemplating any such changes. The BMPP will also be modified if certain BMPs are shown to be ineffective in achieving the general objective of controlling pollutants in stormwater.

5.1.7 Comprehensive Site Compliance Evaluation

Annual inspections by JFK personnel (accompanied by the designated tenant representative) will be conducted to verify that all BMPP elements are properly implemented at the facility. During the year, the PANYNJ will continue to implement the activities listed above as part of its implementation of the draft JFK Airport BMPP and undertake other activities, as necessary.

The site evaluation will include visual inspections of activities potentially impacting stormwater, the need for additional BMPs, and evidence of pollutants entering

the drainage system. Tenants shall conduct semi-annual inspections of their own facilities with at least one inspection during deicing season and maintain records of these inspections to ensure that BMPs have been and continue to be properly implemented.

The tenant personnel designated and trained to implement the BMPP will perform the joint annual inspection and provide the JFK BMPP coordinator or their representative with complete and accurate information. All inspections will be carefully documented, and required changes will be incorporated into the BMPP. These records will be retained until three years after the coverage from the current industrial permit is terminated.

Any necessary revisions to the BMPP, based on the facility inspections, will be documented and incorporated into a revised BMPP. The BMPP will also be amended if there are changes in construction, operation, or maintenance that may affect the discharge of pollutants to surface water, groundwater, or the storm water drainage system. The BMPP will also be modified if certain BMPs are shown to be ineffective in achieving the general objective of controlling pollutants in storm water.

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 2
47-40 21ST Street, Long Island City, NY 11101-5407
Phone: (718) 482-4997 • **FAX:** (718) 482-4975
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

September 27, 2007

Matthew Masters
Permits & Government Approvals
Port Authority of NY & NJ
Engineering Department
Two Gateway Center
Newark, NJ 07102

Re: NYSDEC Permit # 2-6308-00019/00016
SPDES # NY-0008109
Facility: JFK International Airport
Permittee: Port Authority of New York and New Jersey

Dear Mr. Masters:

Pursuant to Administrative Law Judge Helene G. Goldberger's September 19, 2007 Summary Hearing Report and Order of Disposition, the Department has issued a modified State Pollution Discharge Elimination System (SPDES) permit (enclosed). The modification is effective beginning October 1, 2007 and the permit expires on May 31, 2011.

Please read all permit conditions carefully. All permit documents must be available upon request by the Department staff and must be distributed to and understood by personnel responsible for the proper operation of the facility and compliance with the discharge limits. Any violation of these permit conditions constitutes a violation of the Environmental Conservation Law.

If you have any other questions regarding this permit, you may contact the Division of Environmental Permits at the above address. Please refer to the above referenced numbers when you are corresponding with this office or when you are applying to renew or modify this permit.

Any questions regarding the annual pollutant discharge elimination fee should be addressed to the Regulatory Fee Determination Unit at 1-800-225-2566.

Sincerely,

Stephen A. Watts III
Environmental Program Specialist II
Division of Environmental Permits

cc: NYSDEC RWE
NYSDEC CO BWP
NYCDEP
Vichit Aramsombatdee, NYSDEC DOW
Gail Hintz, NYSDEC OGC
Michael Murphy, B & D
Gregory Nolan, NYS OAG
NYC Dept. of Health
IEC
EPA
Al Fuchs, NYSDEC DOW CO
Lawrence Levine, NRDC
Kathleen Miller, PANYNJ
File

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

State Pollutant Discharge Elimination System (SPDES)
DISCHARGE PERMIT

First3.99

Industrial Code:	**4581**	SPDES Number:	**NY- 000 8109**
Discharge Class (CL):	**01**	DEC Number:	**2-6308-00019/00016**
Toxic Class (TX):	**T**	Effective Date (EDP)	**June 1, 2006**
Major Drainage Basin:	**17**	Expiration Date (ExDP)	**May 31, 2011**
Sub Drainage Basin:	**01**	Modification Dates: (EDPM)	**October 1, 2007**
Water Index Number:	**LI 247**		
Compact Area:	**IEC**		

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et.seq.)(hereinafter referred to as "the Act").

PERMITTEE NAME AND ADDRESS

Name: **Port Authority of New York and New Jersey** Attention: **Matthew H. Masters**

Street: **Two Gateway Center, 14th Floor**

City: **Newark** State: **NJ** Zip Code: **07102**

is authorized to discharge from the facility described below:

FACILITY NAME AND ADDRESS

Name: **John F. Kennedy International Airport**

Location (C,T,V): **Jamaica (V)** County: **Queens**

Facility Address: **Building 14**

City: **Jamaica** State: **NY** Zip Code: **11430**

NYTM -E: NYTM - N:

From Outfall No.: **002** at Latitude: **40 ° 39 ′ 37 ″** & Longitude: **73 ° 48 ′ 41 ″**

into receiving waters known as: **Bergen Basin** Class: **I**

and; (list other Outfalls, Receiving Waters & Water Classifications)

Additional Outfalls listed on Page 2.

in accordance with: effluent limitations; monitoring and reporting requirements; other provisions and conditions set forth in this permit; and 6 NYCRR Part 750-1.2(a) and 750-2.

DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS

Mailing Name: **Port Authority of New York and New Jersey**

Street: **Two Gateway Center, 14th Floor**

City: **Newark** State: **NJ** Zip Code: **07102**

Responsible Official or Agent: **Matthew H. Masters** Phone: **(973) 565-7566**

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:

CO BWP - Permit Coordinator
RWE
RPA
EPA Region II - Jeffrey Gratz
IEC
SPDES Mailing List

Permit Administrator: John Cryan

Address: 1 Hunters Point Plaza
47-40 21st Street
Long Island City, New York 11101-5407

Signature: John J. Cryan Date: 09/27/07

ADDITIONAL OUTFALLS

Outfall No.	Latitude	Longitude	Receiving Water	Stream Class
003	40° 39' 38"	73° 48' 56"	Bergen Basin	I
004	40° 39' 39"	73° 49' 09"	Bergen Basin	I
004A	40° 39' 36"	73° 49' 24"	Unnamed Tidal Basin	I
004B	40° 39' 32"	73° 49' 26"	Unnamed Tidal Basin	I
005	40° 39' 27"	73° 49' 22'	Bergen Basin	I
005A	40° 39' 42"	73° 49' 41"	Bergen Basin	I
005B	40° 39' 43"	73° 49' 40"	Bergen Basin	I
005C			Bergen Basin	I
006	40° 39' 22"	73° 49' 24"	Bergen Basin	I
007	40° 39' 09"	73° 49' 21"	Bergen Basin	I
007A			Bergen Basin	I
008	40° 38' 46"	73° 49' 11"	Jamaica Bay	SB
009	40° 38' 41"	73° 48' 45"	Jamaica Bay	SB
010	40° 38' 32"	73° 48' 17"	Jamaica Bay	SB
KP-1			Jamaica Bay via Outfall 010	SB
KP-2			Jamaica Bay via Outfall 010	SB
KP-3			Jamaica Bay via Outfall 010	SB
KP-4/KP-5			Jamaica Bay via Outfall 010	SB
011	40° 38' 16"	73° 47' 49"	Jamaica Bay	SB
012	40° 38' 09"	73° 43' 55"	Jamaica Bay	SB
013	40° 38' 03"	73° 47' 22"	Jamaica Bay	SB
014	40° 37' 59"	73° 47' 17"	Jamaica Bay	SB
015	40° 37' 49	73° 46' 56"	Jamaica Bay	SB
016	40° 37' 36"	73° 47' 08"	Jamaica Bay	SB
017	40° 37' 30"	73° 46' 52"	Jamaica Bay	SB
017A	40° 38' 50"	73° 45' 17"	Thurston Bay	I
017B	40° 37' 30"	73° 46' 25"	Jamaica Bay	SB
019	40° 37' 38"	73° 46' 00"	Head of Bay	SB
020	40° 37' 45"	73° 45' 53"	Head of Bay	SB
021	40° 38' 48"	73° 45' 14"	Thurston Bay	I
022	40° 36' 51"	73° 45' 17"	Thurston Bay	I

PERMIT LIMITS, LEVELS AND MONITORING DEFINITIONS

OUTFALL	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
	This cell describes the type of wastewater authorized for discharge. Examples include process or sanitary wastewater, storm water, non-contact cooling water.	This cell lists classified waters of the state to which the listed outfall discharges.	The date this page starts in effect. (e.g. EDP or EDPM)	The date this page is no longer in effect. (e.g. ExDP)

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQ.	SAMPLE TYPE
e.g. pH, TRC, Temperature, D.O.	The minimum level that must be maintained at all instants in time.	The maximum level that may not be exceeded at any instant in time.	SU, °F, mg/l, etc.		

PARA-METER	EFFLUENT LIMIT	PRACTICAL QUANTITATION LIMIT (PQL)	ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE
	Limit types are defined below in Note 1. The effluent limit is developed based on the more stringent of technology-based limits, required under the Clean Water Act, or New York State water quality standards. The limit has been derived based on existing assumptions and rules. These assumptions include receiving water hardness, pH and temperature; rates of this and other discharges to the receiving stream; etc. If assumptions or rules change the limit may, after due process and modification of this permit, change.	For the purposes of compliance assessment, the analytical method specified in the permit shall be used to monitor the amount of the pollutant in the outfall to this level, provided that the laboratory analyst has complied with the specified quality assurance/quality control procedures in the relevant method. Monitoring results that are lower than this level must be reported, but shall not be used to determine compliance with the calculated limit. This PQL can be neither lowered nor raised without a modification of this permit.	Type I or Type II Action Levels are monitoring requirements, as defined below in Note 2, that trigger additional monitoring and permit review when exceeded.	This can include units of flow, pH, mass, Temperature, concentration. Examples include µg/l, lbs/d, etc.	Examples include Daily, 3/week, weekly, 2/month, monthly, quarterly, 2/yr and yearly.	Examples include grab, 24 hour composite and 3 grab samples collected over a 6 hour period.

Note I: DAILY DISCHARGE.: The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day.

DAILY MAX.: The highest allowable daily discharge. DAILY MIN.: The lowest allowable daily discharge.

MONTHLY AVG: The highest allowable average of daily discharges over a calendar month, calculated as the sum of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

7 DAY ARITHMETIC MEAN (7 day average): The highest allowable average of daily discharges over a calendar week.

30 DAY GEOMETRIC MEAN: The highest allowable geometric mean of daily discharges over a calendar month, calculated as the antilog of : the sum of the log of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

7 DAY GEOMETRIC MEAN: The highest allowable geometric mean of daily discharges over a calendar week.

RANGE: The minimum and maximum instantaneous measurements for the reporting period must remain between the two values shown.

Note 2: ACTION LEVELS: (This section does not apply to WET testing) Routine Action Level monitoring results, if not provided for on the Discharge Monitoring Report (DMR) form, shall be appended to the DMR for the period during which the sampling was conducted. If the additional monitoring requirement is triggered as noted below, the permittee shall undertake a short-term, high-intensity monitoring program for the parameter(s). Samples identical to those required for routine monitoring purposes shall be taken on each of at least three consecutive operating and discharging days and analyzed. Results shall be expressed in terms of both concentration and mass, and shall be submitted no later than the end of the third month following the month when the additional monitoring requirement was triggered. Results may be appended to the DMR or transmitted under separate cover to the same address. If levels higher than the Action Levels are confirmed, the permit may be reopened by the Department for consideration of revised Action Levels or effluent limits. The permittee is not authorized to discharge any of the listed parameters at levels which may cause or contribute to a violation of water quality standards. TYPE I : The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results in excess of the stated Action Level. TYPE II: The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results that show the stated action level exceeded for four of six consecutive samples, or for two of six consecutive samples by 20 % or more, or for any one sample by 50 % or more.

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
002	Storm Runoff from Landscaped Areas, Paved Parking, Hanger Areas, Roof Drains, Paved Aprons, Roads, and Parking Fields	Bergen Basin	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Calculated	
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	100			mg/l	Monthly	Grab	
$CBOD_5$	Monitor	Monitor			mg/l	Monthly	Grab	1, 2, 3
$CBOD_5$	Monitor	Monitor			lbs/day	Monthly	Calculated	1, 2, 3
Glycols	Monitor	Monitor			mg/l	Monthly	Grab	1, 2, 3
Nitrogen, Total	NA	Monitor			mg/l	Monthly	Grab	
Copper, Total	NA	Monitor			mg/l	Monthly	Grab	
WET - Acute Invertebrate			1.8		TU_a	Quarterly	Grab	4
WET - Acute Vertebrate			1.8		TU_a	Quarterly	Grab	4

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
004	Storm Runoff, Sump Water from Reclaim System, Groundwater from Recovery System, Tank Testing Water, Spill Response, and Hydrant Pit Water	Bergen Basin	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Calculated	7
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	45			mg/l	Monthly	Grab	
Benzene	NA	7			µg/l	Monthly	Grab	
Ethylbenzene	NA	5			µg/l	Monthly	Grab	
Methyl Tert Butyl Ether (MTBE)	NA	50			µg/l	Monthly	Grab	
Toluene	NA	5			µg/l	Monthly	Grab	6
Xylenes	NA	5			µg/l	Monthly	Grab	6
Nitrogen, Total	NA	Monitor			mg/l	Monthly	Grab	
Copper, Total	NA	Monitor			mg/l	Monthly	Grab	
WET - Acute Invertebrate			1.8		TU_a	Quarterly	Grab	4
WET - Acute Vertebrate			1.8		TU_a	Quarterly	Grab	4

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
005C	West Remediation Plant	Bergen Basin	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Calculated	
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	45			mg/l	Monthly	Grab	
Benzene	NA	7			µg/l	Monthly	Grab	
Ethylbenzene	NA	5			µg/l	Monthly	Grab	
Methyl Tert Butyl Ether (MTBE)	NA	50			µg/l	Monthly	Grab	
Toluene	NA	5			µg/l	Monthly	Grab	6
Xylenes	NA	5			µg/l	Monthly	Grab	6
Nitrogen, Total	NA	Monitor			mg/l	Monthly	Grab	
Copper, Total	NA	Monitor			mg/l	Monthly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
007A	East Remediation Plant	Bergen Basin	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Calculated	
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	45			mg/l	Monthly	Grab	
Benzene	NA	7			µg/l	Monthly	Grab	
Ethylbenzene	NA	5			µg/l	Monthly	Grab	
Methyl Tert Butyl Ether (MTBE)	NA	50			µg/l	Monthly	Grab	
Toluene	NA	5			µg/l	Monthly	Grab	6
Xylenes	NA	5			µg/l	Monthly	Grab	6
Nitrogen, Total	NA	Monitor			mg/l	Monthly	Grab	
Copper, Total	NA	Monitor			mg/l	Monthly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
010	Storm Runoff from Landscaped Areas, Paved Parking, Hanger, Terminals, and Other Buildings, Runways, Fuel Farm, Roof Drains, Paved Aprons, and Outfalls KP-I, KP-2, KP-3, KP-4, and KP-5, Discharge from Remediation Treatment Plant	Jamaica Bay	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Calculated	
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	100			mg/l	Monthly	Grab	
$CBOD_5$	Monitor	Monitor			mg/l	Monthly	Grab	I, 2, 3
$CBOD_5$	Monitor	Monitor			lbs/day	Monthly	Calculated	1, 2, 3
Glycols	Monitor	Monitor			mg/l	Monthly	Grab	1, 2, 3
Nitrogen, Total	NA	Monitor			mg/l	Monthly	Grab	
Temperature	NA	90			^oF	Monthly	Grab	
Chromium, Total	NA	Monitor			mg/l	Quarterly	Grab	
Copper, Total	NA	Monitor			mg/l	Quarterly	Grab	
Nickel, Total	NA	Monitor			mg/l	Quarterly	Grab	
Zinc, Total	NA	Monitor			mg/l	Quarterly	Grab	
Chlorine, Free Available	NA	Monitor			mg/l	Quarterly	Grab	
Benzene	NA	7			µg/l	Monthly	Grab	
Ethylbenzene	NA	5			µg/l	Monthly	Grab	
Methyl Tert Butyl Ether (MTBE)	NA	50			µg/l	Monthly	Grab	
Toluene	NA	5			µg/l	Monthly	Grab	6
Xylenes	NA	5			µg/l	Monthly	Grab	6
WET - Acute Invertebrate			1.8		TU_a	Quarterly	Grab	4
WET - Acute Vertebrate			1.8		TU_a	Quarterly	Grab	4

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
016	Storm Runoff from Landscaped Areas, Runways and Taxiways	Jamaica Bay	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Calculated	
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	100			mg/l	Monthly	Grab	
$CBOD_5$	Monitor	Monitor			mg/l	Monthly	Grab	1, 2, 3
$CBOD_5$	Monitor	monitor			lbs/day	Monthly	Calculated	1, 2, 3
Glycols	Monitor	Monitor			mg/l	Monthly	Grab	
Nitrogen, Total	Monitor	Monitor			mg/l	Monthly	Grab	
Copper, Total	Monitor	Monitor			mg/l	Monthly	Grab	
WET - Acute Invertebrate			1.8		TU_a	Quarterly	Grab	4
WET - Acute Vertebrate			1.8		TU_a	Quarterly	Grab	4

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
022	Storm Runoff from Landscaped Areas, Paved Parking, Hanger, Terminal Areas, Other Buildings, Runways, Taxiways, Roads, Roof Drains, Paved Aprons, and Parking Fields	Thurston Bay	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Calculated	
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	100			mg/l	Monthly	Grab	
$CBOD_5$	Monitor	Monitor			mg/l	Monthly	Grab	1, 2, 3
$CBOD_5$	Monitor	Monitor			lbs/day	Monthly	Calculated	1, 2, 3
Glycols	Monitor	Monitor			mg/l	Monthly	Grab	
Nitrogen, Total	Monitor	Monitor			mg/l	Monthly	Grab	
Copper, Total	Monitor	Monitor			mg/l	Monthly	Grab	
WET - Acute Invertebrate			1.8		TU_a	Quarterly	Grab	4
WET - Acute Vertebrate			1.8		TU_a	Quarterly	Grab	4

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
KP-1	Floor Drainage from High Pressure BFW Pump Area, and Liquid Fuel Skid Area	outfall 010	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	monitor	Monitor			gpd	Monthly	Instantaneous	
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	45			mg/l	Monthly	Grab	

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
KP-2	Storm Runoff from KIAC Natural Gas Compressor Skid Area	Outfall 010	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Instantaneous	
Oil & Grease	NA	15			mg/l	Monthly	Grab	
Solids, Total Suspended	NA	45			mg/l	Monthly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
KP-3	KIAC Waste Heat Steam and Generator Blowdown	Outfall 010	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Instantaneous	
Chromium, Total	NA	0.1			mg/l	Monthly	Grab	
Copper, Total	NA	0.07			mg/l	Monthly	Grab	
Nickel, Total	NA	0.08			mg/l	Monthly	Grab	
Temperature	NA	150			^{o}F	Monthly	Grab	
Solids, Total Suspended	NA	45			mg/l	Monthly	Grab	

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
KP-4	KIAC Cooling Tower Blowdown	Outfall 010	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Instantaneous	5
Chromium, Total	NA	0.2			mg/l	Monthly	Grab	
Copper, Total	NA	0.09			mg/l	Monthly	Grab	
Nickel, Total	NA	0.5			mg/l	Monthly	Grab	
Zinc, Total	NA	1.0			mg/l	Monthly	Grab	
Chlorine, Free Available	NA	0.5			mg/l	Monthly	Grab	
Temperature	NA	90			^{o}F	Monthly	Grab	
Solids, Total Suspended	NA	45			mg/l	Monthly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
KP-5	KIAC Cooling Tower Blowdown	Outfall 010	EDPM	EXDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.	TYPE I	TYPE II				
Flow	Monitor	Monitor			gpd	Monthly	Instantaneous	5
Chromium, Total	NA	0.2			mg/l	Monthly	Grab	
Copper, Total	NA	0.09			mg/l	Monthly	Grab	
Nickel, Total	NA	0.5			mg/l	Monthly	Grab	
Zinc, Total	NA	1.0			mg/l	Monthly	Grab	
Chlorine, Free Available	NA	0.5			mg/l	Monthly	Grab	
Temperature	NA	90			^{o}F	Monthly	Grab	
Solids, Total Suspended	NA	45			mg/l	Monthly	Grab	

PERMIT LIMITS, LEVELS AND MONITORING

NO MONITORING REQUIRED

OUTFALL NUMBER	WASTEWATER TYPE	OUTFALL NUMBER	WASTEWATER TYPE
003	Storm Runoff from Landscaped Areas, Roof Drains, Roads, Paved Parking and Fuel Farm	011	Storm Runoff from Landscaped Areas, Terminal Areas & Other Buildings, Runways, Roof Drains, Paved Aprons, and Taxiways
004A	Storm Runoff from Paved Parking	012	Storm Runoff from Landscaped Areas, Runways, Terminal Areas & Other Buildings, Roof Drains, Taxiways, Paved Aprons, and Roads
004B	Storm runoff from Paved Parking	013	Storm Runoff from Landscaped Areas, Runways, Terminal Areas & Other Buildings, Roof Drains, Taxiways, Paved Aprons, Roads, and Parking Fields
005	Storm Runoff from landscaped areas, Paved Parking, Terminal Areas & other buildings, roof drains, parking fields, west remediation site.	014	Storm Runoff from Landscaped Areas, Runways, and Taxiways
005A	Storm Runoff from Paved Parking	015	Storm Runoff from landscaped areas, runways and taxiways
005B	Storm Runoff from Paved Parking	017	Storm runoff form landscaped areas, runways and taxiways
006	Storm Runoff from Landscaped areas, hanger areas, roof drains and paved aprons.	017A	Storm Runoff from Landscaped Areas, Runways, and Taxiways
007	Storm runoff from landscaped areas, paved parking, roof drains, paved aprons, taxiways, roads, parking fields, and east remediation plant	017B	Storm Runoff from Landscaped Areas, Runways, and Taxiways
008	Storm Runoff from Landscaped Areas, Paved Parking, Hangers, Terminal Areas & Other Buildings , Runways, Taxiways, Roof Drains, Paved Aprons, and Roads	019	Storm Runoff from Landscaped Areas, Runways, and Taxiways
009	Storm Runoff from Landscapes Areas, Runways and Taxiways	020	Storm runoff from Landscaped Areas, Runways, and Taxiways
		021	Storm Runoff from Landscaped Areas, Runways, and Taxiways

PERMIT LIMITS, LEVELS AND MONITORING

FOOTNOTES:

1. The permittee shall submit a Summary of Sampling Events Report annually by June 15 of each year for the pervious deicing season. The following information for each sampling event shall be included in this report. A sampling event is further defined under Footnote 2.

   a. Date of each storm event, reported as MM/DD/YY.

   b. Time storm event began and ended, reported in standard time.

   c. Storm event duration, reported in number of hours or fractions thereof.

   d. Hours since last storm event, reported in hours.

   e. Time of sample collection, reported in standard time.

   f. Precipitation Amount at Time of Sampling, reported in inches.

   g. $CBOD_5$ in mg/l and lbs/day for each sampling event for outfalls 002, 010,016, and 022.

   h. Provide specific details of how the $CBOD_5$ pounds per day were calculated for reporting on the DMR for outfalls 002, 010, 016, and 022.

2. During months when deicing substances are used, the monthly grab sample shall be collected:

   a. From a discharge resulting from a storm event that is greater than 0.1 inch and at least 72 hours from the previously measurable (greater than 0.1 inch) storm event; and

   b. When anti icing and deicing operations are in effect and/or when these operations have occurred within the last 72 hours with no other storm event having occurred between the current discharge being sampled and the deicing substances use; and

   c. Grab samples for storm runoff events shall be collected within 30 minutes, or as soon thereafter as practicable, after the initiation of the storm runoff discharge; and

   d. When temperatures are above freezing and/or non-freezing precipitation is occurring such that storm runoff discharges occur.

3. Discharge of deicing substances shall be permitted only during the cold weather months, and such times as required to dispose of accumulated snow piles. With the exception of the time required to dispose of accumulated snow piles, no discharge of deicing substances shall be allowed during the non deicing season.

4. Whole Effluent Toxicity Testing (WET):

   Testing Requirements - WET testing shall consist of Acute testing. WET testing shall be performed in accordance with 40 CFR Part 136 and TOGS 1.3.2 unless prior written approval has been obtained from the Department. The test species shall be *Mysidopsis bahia* (mysid shrimp - invertebrate) and *Cyprinodon variegatus* (sheepshead minnow - vertebrate). Artificial salt water shall be used for dilution. All tests conducted shall be static renewal. The appropriate dilution series bracketing the IWC and including one exposure group of 100% effluent shall be used to generate a definitive test endpoint, otherwise an immediate rerun of the test is required. WET testing shall be coordinated with the monitoring of chemical and physical parameters limited by this permit so that the resulting analyses are also representative of the sample used for WET testing. The ratio of critical receiving water flow to discharge flow (i.e. dilution ratio) is 5:1 for acute. Discharges which are disinfected using chlorine should be dechlorinated prior to WET testing or samples shall be taken immediately prior to the chlorination system.

   The samples shall be collected on a quarterly basis (total of 4 samples per outfall), except that the quarters shall be adjusted as necessary to assure at least 2 of the 4 sampling events occur during deicing / anti-icing events as defined under Footnote #1 and #2 above. This may result in two samples being collected within one quarter.

PERMIT LIMITS, LEVELS AND MONITORING FOOTNOTES, CONTINUED

Monitoring Period - WET testing shall be performed at the specified sample frequency for a period of one full year beginning on the Effective Date of modification to this Permit.

Reporting - Toxicity Units shall be calculated and reported on the DMR as follows: TUa = (100)/(48 hr LC50) or (100)/(48 hr EC50) (NOTE THAT Acute data is generated by both Acute and Chronic testing) and TUc = (100)/(NOEC) when Chronic testing has been performed or TUc = (TUa) x (20) when only Acute testing has been performed and is used to predict Chronic test results, where the 48 hr LC50 or 48 hr EC50 and NOEC are expressed in % effluent. This must be done for both species and using the Most Sensitive Endpoint (MSE) or the lowest NOEC and corresponding highest TUc. Report a TUa of 0.3 if there is no statistically significant toxicity in 100% effluent as compared to control.

The complete test report including all corresponding results, statistical analyses, reference toxicity data, daily average flow at the time of sampling and other appropriate supporting documentation, shall be submitted within 60 days following the end of each test period to the Toxicity Testing Unit. A summary page of the test results for the invertebrate and vertebrate species indicating TUa, 48 hr LC50 or 48 hr EC50 for Acute tests and/or TUc, NOEC, IC25, and most sensitive endpoints for Chronic tests, should also be included at the beginning of the test report.
WET Testing Action Level and Limit Exceedances - If an action level or limit is exceeded then the Department may require the permittee to conduct additional WET testing including Acute and/or Chronic tests. Additionally, the permittee may be required to perform a Toxicity Reduction Evaluation (TRE) in accordance with Department guidance. If such additional testing or performance of a TRE is necessary, the permittee shall be notified in writing by the Regional Water Engineer. The written notification shall include the reason(s) why such testing or a TRE is required. Additionally, if a permit limit is exceeded the permittee is in noncompliance.

5. At no time shall there be a simultaneous discharge from outfalls KP-4 and KP-5.

6. Interim limits for outfalls 004, 005C, 007C, and 010 for Xylenes and Toluene are in effect until facilities are designed and constructed to meet the Enforceable limits located on the "Permit Limits, Levels, and Monitoring" pages. The Schedule of Compliance located in this permit will define the schedule for accomplishing this. Listed below are the interim limits, which shall expire no later than March 1, 2009.

INTERIM LIMITS				
	FROM EDPM THROUGH MARCH 1, 2009		FROM EDPM THROUGH MARCH 1, 2008	
Parameter	Outfall 004	Outfall 010	Outfall 005C	Outfall 007A
Toluene	10 ug/l	10 ug/l	10 ug/l	10 ug/l
Xylene	30 ug/l	80 ug/l	50 ug/l	50 ug/l

7. No discharge from Outfall 004 that has not run through the treatment facility is authorized under this permit without:
   1) Prior written approval by the Department; or
   2) In the event a storm event occurs that exceeds a ½-inch storm and the first flush from the drainage areas is directed to the treatment facility.

The first flush from the drainage areas of Outfall 003 and Outfall 004 is monitored at the Bulk Fuel Farm wastewater treatment plant, which discharges to Outfall 004.

PERMIT LIMITS, LEVELS AND MONITORING - SPECIAL CONDITIONS

SPECIAL CONDITION 1: The deicing season coincides with the period when dissolved oxygen levels in the receiving water are expected to approach saturation levels in the range of 10 to 16 mg/l. The dissolved oxygen deficit associated with glycol use is expected to be compensated by the available dissolved oxygen (DO saturation minus DO standard), i.e. in the range of 6 - 12mg/l and 5 - 11 mg/l in the ambient waters for Class I and SB respectively, and therefore, the applicable DO standards (4.0 for Class I and 5.0 mg/l for Class SB waters) would be met. To verify the accuracy of this conclusion and to determine if any other water quality parameters are a concern, the permittee shall conduct a one time modeling study, augmented with ambient data in the receiving waters (Bergen Basin, Jamaica Bay and Thurston Basin), including samples of each outfall (at the JFK Airport), coinciding with deicing discharge event(s) for calibrating and verifying the water quality model. The modeling results will be shared with the DEC staff and, after approval of the model by DEC, the model will be used for dissolved oxygen projection purposes under maximum glycol and stormwater loading conditions (which include all applicable water quality parameters). The model must also be capable of projecting the toxic effects for the discharges from the permittee. The Model should also include the loadings from other sources where available such as: sewage treatment plants, combined sewer overflows and stormwater discharges within the Jamaica Bay Basin. The study must also provide data which will confirm that the outfalls selected for monitoring are representative of all outfalls. This will assist in facilitating the development of enforceable limits for the outfalls from the JFK airport to the receiving waters. The study must include analytical data from each outfalls which is representative of all pollutants being discharged. The following must be provided:

A) Within 2 months of the EDPM, the Permittee shall submit an approvable Water Quality Modeling Plan (WQMP) which will delineate the details of the Study indicated in the above paragraph. At a minimum, this plan shall include:

a) study protocols which include proposed sample locations, frequency of sampling, parameters to be sampled (which must at a minimum include ALL components of deicing materials used and any other possible contaminants which may flow through the outfalls), potential toxicity of discharged material (including mixing zones and dilution ratios for each outfall), modeling approach and all other pertinent information;

b) a schedule for conducting the study which will become enforceable under this permit once approved;

c) and the submission of an approvable Water Quality Modeling Report.

The Plan shall also meet the following requirements:

d) Provide a detailed approach as to how representative samples will be collected from each outfall. The detailed approach must address at a minimum the specific type of sample, (including: 1. whether it is practicable to collect composite samples at each outfall; and 2. why the selected sampling type (e.g., grab, composite or other) is adequately representative), frequency of sampling, timing of sampling with respect to discharge of deicing and anti-icing materials, sample location for ambient water samples, potential impacts from tides on sample, and any other information necessary to assess whether a representative sample is being collected.

e) The Plan shall require the completion of the requirements contained in the WQMP with an approvable Water Quality Modeling Report (WQMR) being submitted to the Department by September 30th following the second winter of sampling.

f) Sampling must be initiated during the first deicing season following the issuance of this permit modification, which includes all outfalls and ambient waters. Sampling shall also be conducted during second deicing season following the issuance of this permit modification

B) By June 15, following the first winter of sampling, an approvable Sampling Summary Report (SSR) summarizing all sampling results from the previous deicing season, as required by special condition 1, must be submitted to the Department. In addition, this report shall include a revised submittal of application Form NY-2C and the submittal of application Form 2F.

C) By June 15th, following the second deicing season, the permittee shall provide a Draft Water Quality Modeling Report to the Department, along with public noticing in a major metropolitan newspaper the availability of the draft report for public review and comment and the time and location of a public information session to be held concerning the draft report. DEC will simultaneously publish the notice in the Environmental Notice Bulletin. The notice must be published at least 30 days prior to the public information session. By August 1st of the same year, the permittee shall hold a public information session to present the report to the public and to solicit comments from the public. All comments should be received by no later than August 30th of the same year. The permittee should consider the public comments in modifying the report and prepare a Response to Comments. An approvable Water Quality Modeling Report, along with the Response to Comments, shall be submitted to the Department by September 30th of the same year. The WQMR must provide all supporting data and information used to reach the conclusions provided in the Report. If the report concludes that the $CBOD_5$, Glycol or any other parameters are currently being discharged at levels that do not meet Water Quality Standards or Guidelines Values, then the Report shall also include the following:

a) an approvable schedule for implementing additional measures from the BMPR, as defined under Special Conditions - Best Management Practices, section 2, which shall include measures to reduce discharge levels to that which will not contravene any Water Quality Standards

PERMIT LIMITS, LEVELS AND MONITORING - SPECIAL CONDITIONS, CONTINUED

or Guidance values; and

b) an approvable schedule to submit an approvable complete application for a permittee initiated modification to this permit which would propose permit limits for CBOD5, Glycol, any other parameter which discharges to levels which meet the applicable Water Quality Standards and Guidance values.

D) The Permittee shall provide to the Department quarterly reports which summarize their efforts toward meeting the requirements above. A quarterly meeting shall also be scheduled at the Department's Region 2 office to review the current status and to discuss future work elements. (A quarterly meeting may be cancelled through mutual agreement of the Permittee and the Department).

SPECIAL CONDITION 2: The permittee shall submit by June 15 of each year a approvable Deicing Summary Report (DSR) which provides the following:

1) A summary of the amount of deicing agents used, the quantity applied to each outfall drainage area on each deicing/anti-icing event ("deicing/anti-icing event" includes any continuous period of time over which deicing/anti-icing takes place, whether or not such time period coincides with a storm evnet) or on a daily basis, the steps taken over the last deicing season to minimize the discharge of the materials, the dates deicing/anti-icing materials were used and which drainage areas they were used in. This summary must provide a breakdown of the "type" of deicing/anti-icing agent, MSDS sheets for each agent, concentration, entity responsible for application, and location of application. Tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials shall provide all above information to the Permittee by the 15th of the month following the application of the material.;

NOTE: For the purposes of this permit, tenants of the airport facility include airline passenger or cargo companies, fixed based operators and other parties who have contracts with the airport authority to conduct business operations on airport property and whose operations result in stormwater discharges associated with industrial activity.

2) A summary of any new Best Management Practices initiated to reduce the discharge of deicing material and the effects these practices have on each individual drainage area and its associated outfall;

3) A schedule to implement BMPs which have been selected to reduce the discharge of deicing substances; and

4) The first annual report shall include an analysis of each drainage basin within JFK . This analysis shall include delineation of the drainage basins on drawings/plans with associated acreage, maximum amount of contaminants discharged to surface, travel time of contaminates to outfall, flow rates for a variety of storm intensities (from 0.1 inch to the 100 year storm event) and maximum loading rates from each outfall.

SPECIAL CONDITION 3: The Department reserves the right to initiate a modification to this permit in order to incorporate enforceable effluent limits, action levels and monitoring to outfalls at JFK based on the information provided in the reports being submitted pursuant to the requirements of this permit.

SPECIAL CONDITION 4: The discharge of any Long Island Well permitted construction dewatering not directly regulated by this permit shall follow the following process:

1) Upon Departmental receipt of a Long Island Well permit application from a tenant or fixed-base operator the Permittee will be notified of the request by the Department's Division of Environmental Permits. The Permittee will contact the tenant or fixed-base operator and then provide the Department with sufficient information to assure that water quality standards of the receiving waters will not be exceeded and issue approval to accept the discharge to their collection system.
2) Any such discharge shall not commence without written consent of the Department.
3) Any sampling data collected by the tenant or fixed-base operator for the Permittee must be submitted as an attachment to the monthly DMR.

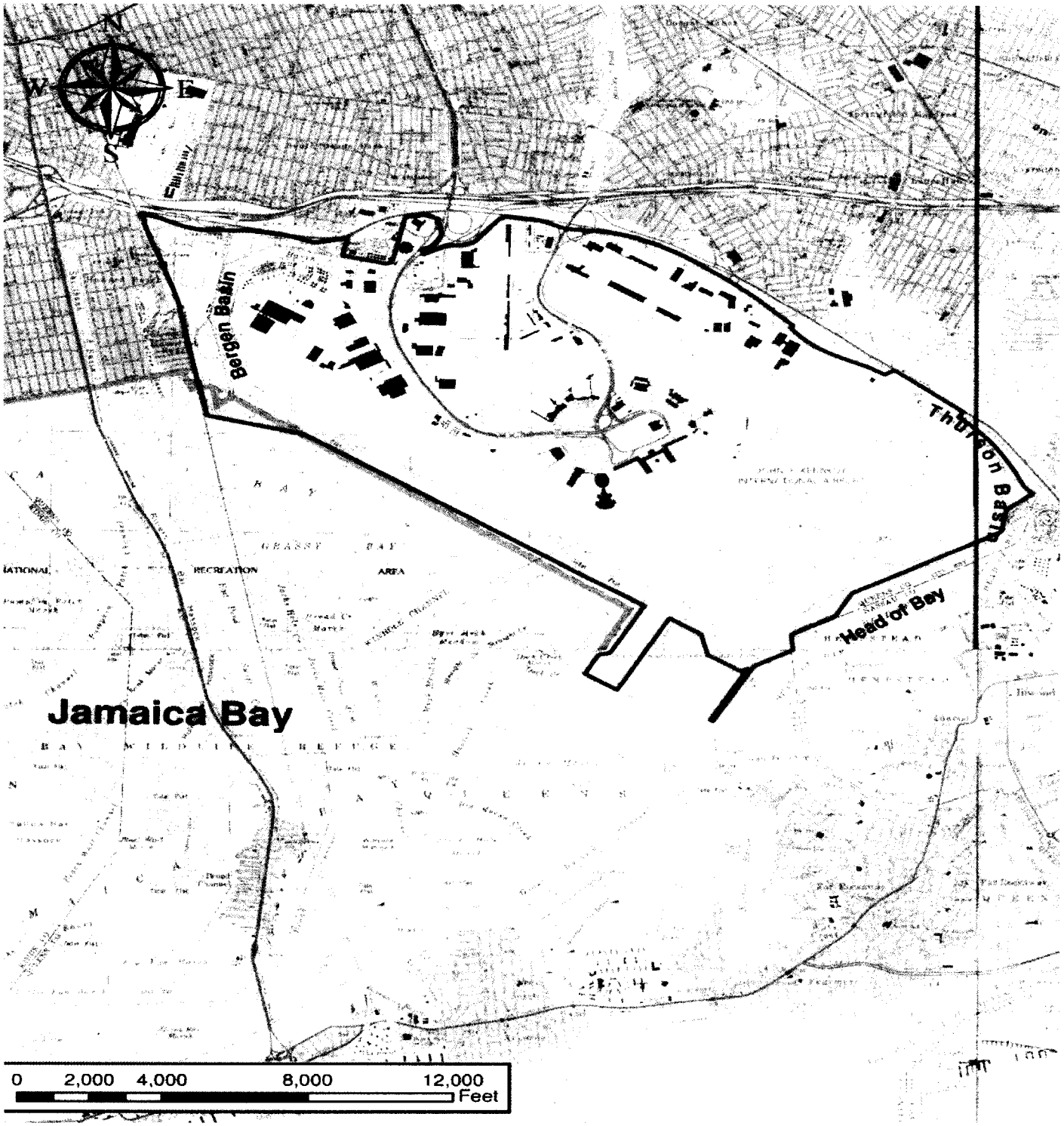
SPECIAL CONDITION 5: For the period beginning on the Effective Date of the Modification to this Permit and ending 1 year from that date, samples shall be collected for mercury analysis on a quarterly basis (total of four samples per outfall), except that the quarters shall be adjusted as necessary to assure at least 2 of the 4 sampling events occur during deicing/anti-icing events. These four samples shall be collected from Outfalls 002, 004, 010, 016, and 022. They shall be grab samples and shall be collected in accordance with Footnotes 1 and 2 above during the deicing season and in accordance with Footnotes 1, 2.a and 2.c during the non deicing season. Whenever a sample is collected from the respective outfalls for mercury analysis, an additional sample of that storm event's precipitation shall be collected for analysis in order to determine the extent of mercury that is contributed by precipitation. Analysis shall be by EPA Method 1631. By 15 months from the EDPM, the permittee shall submit a report summarizing all Mercury data it has obtained through the above analysis, and from any past analysis, and submit it to the Department for approval. This summary shall include a comparison of the outfall data to the precipitation data.

SPECIAL CONDITION 6: No discharge from Outfall 003 is authorized under this permit without:
1) Prior written approval by the Department; or
2) In the event a storm event occurs that exceeds a ½-inch storm and the first flush from the drainage areas is directed to the treatment facility which discharges through Outfall 004.

MONITORING LOCATIONS, CONTINUED

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:

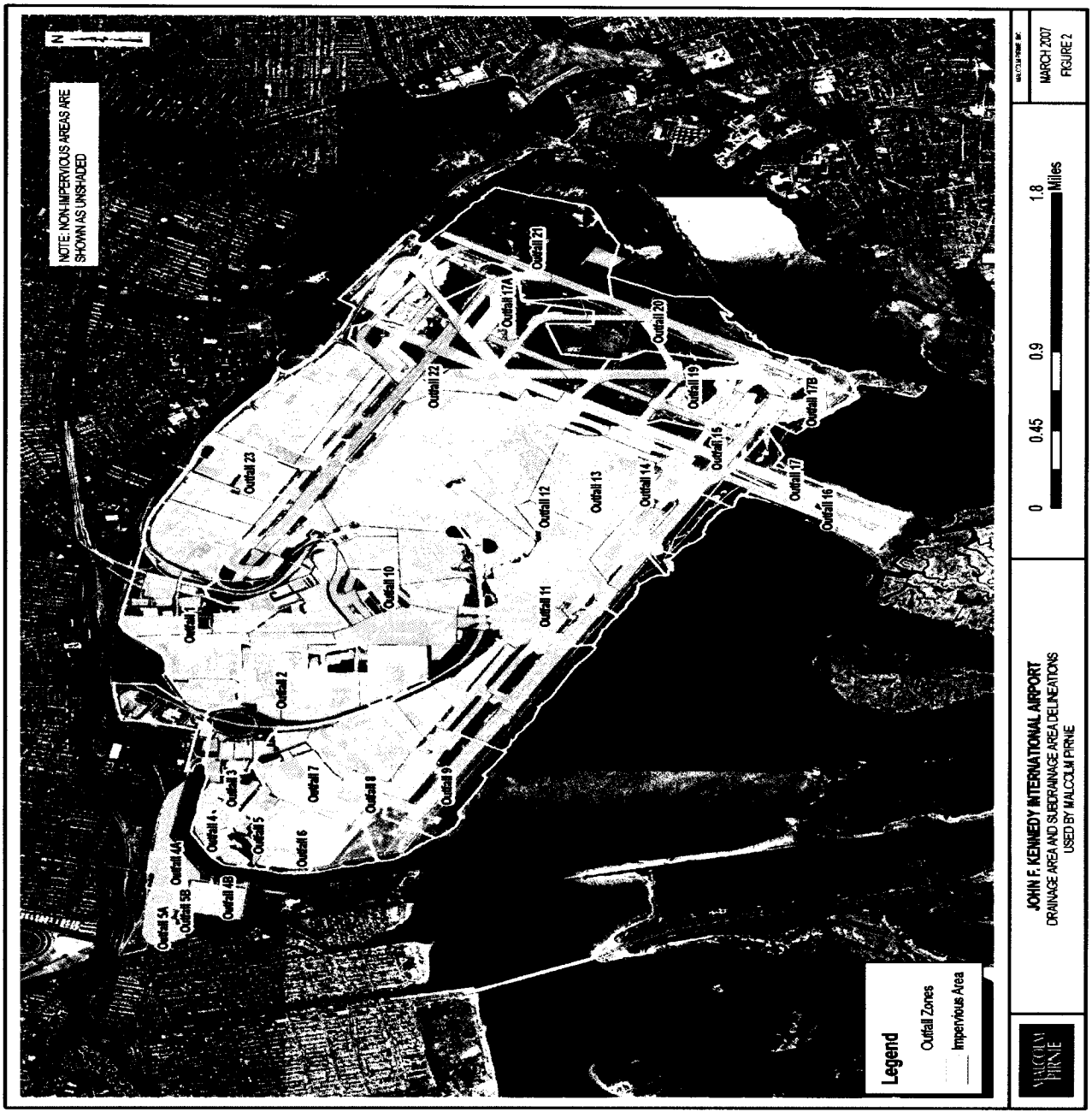
JFK OVERVIEW



MONITORING LOCATIONS, CONTINUED

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:

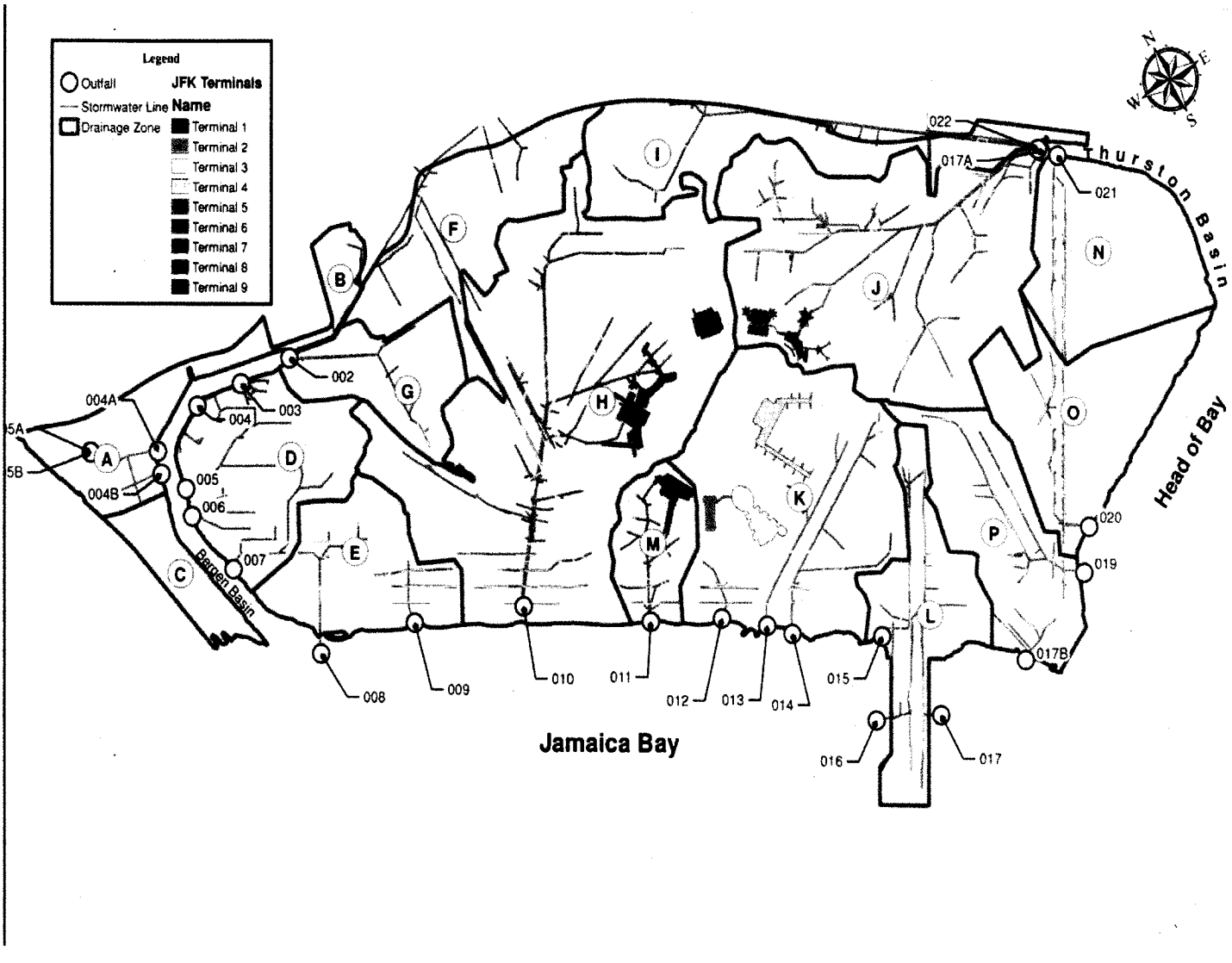
DRAINAGE AREA AND SUBDRAINAGE AREA DELINEATIONS



MONITORING LOCATIONS, CONTINUED

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:

STORMWATER DRAINAGE ZONES AND OUTFALL LOCATIONS



SCHEDULE OF COMPLIANCE

1. The permittee shall comply with the following schedule:

a) Toluene and Xylenes Interim Limits.

Action Code	Outfall Number(s)	Compliance Action	Due Date
	004 010	The Permittee shall submit an approvable Engineering Report that identifies the facilities necessary to achieve compliance with the technology based effluent limitation of 5 ug/l for Xylenes and 5 ug/l for Toluene.	7 months from EDPM
		The Permittee shall submit approvable design with final plans and specifications, as well as a schedule of construction, for the facilities described in the approved Engineering Report.	EDPM + 9 months
		The Permittee shall complete construction and have the facility operating to meet effluent limits by no later than:	EDPM + 18 months
	005C 007A	The Permittee shall submit an approvable engineering report and design, including plans and specifications that identifies the facilities necessary to achieve compliance with the technology based effluent limitation of 5 ug/l for Xylenes and 5 ug/l for Toluene..	EDMP + 3 months
		The Permittee shall complete construction and have the facility operating to meet effluent limits by no later than:	EDPM + 5 months

b) Water Quality Modeling, Deicing Summary Report, Wet Testing, Mercury Sampling, and Summary of Sampling Event.

Action Code	Outfall Number(s)	Compliance Action	Due Date
	All	Permittee shall submit an approvable Water Quality Modeling Plan as required by Special Condition 1.A.	EDPM + 2 Months
		The Permittee shall submit approvable WET Testing Reports as required by Footnote 4.	60 days following sampling date (Total of 4 reports)
		Permittee shall submit an approvable Sampling Summary Report as required by Special Condition 1.B.	June 15 following the first winter of sampling
		Permittee shall submit an approvable Mercury Summary Report as required by Special Condition 5.	EDPM + 15 Months
		Permittee shall submit a Deicing Summary Report as required by Special Condition 2.	June 15th of each year
		Permittee shall submit a Summary of Sampling Events Report as required by Footnote 1.	June 15th of each year
		Permittee shall submit a draft Water Quality Modeling Report as required by Special Condition #1.C.	No later than June 15th following the second deicing/anti-icing season
		Permittee shall submit an approvable Water Quality Modeling Report as required by Special Condition #1.C.	No later than September 30th, following the second deicing/anti-icing season
		Quarterly Status Reports as required by Special Condition 1.D.	January 15, April 15, July 15, and October 15 (ongoing until discontinued by DEC)

c) Best Management Practices

Action Code	Outfall Number(s)	Compliance Action	Due Date
	All	Permittee shall submit an approvable Best Management Practices Plan as required by Special Conditions - Best Management Practices, section 2.	EDPM + 6 months
		Permittee shall submit an approvable Best Management Practices Report as required by Special Conditions - Best Management Practices, section 2.	EDPM + 9 months

The above compliance actions are one time requirements. The permittee shall comply with the above compliance actions to the Department's satisfaction once. When this permit is administratively renewed by NYSDEC letter entitled "SPDES NOTICE/RENEWAL APPLICATION/PERMIT," the permittee is not required to repeat the submission(s) noted above. The above due dates are independent from the effective date of the permit stated in the letter of "SPDES NOTICE/RENEWAL APPLICATION/PERMIT."

2. The permittee shall submit a written notice of compliance or non-compliance with each of the above schedule dates no later than 14 days following each elapsed date, unless conditions require more immediate notice as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2. All such compliance or non-compliance notification shall be sent to the locations listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS. Each notice of non-compliance shall include the following information:
    1. A short description of the non-compliance;
    2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirements without further delay and to limit environmental impact associated with the non-compliance;
    3. A description or any factors which tend to explain or mitigate the non-compliance; and
    4. An estimate of the date the permittee will comply with the elapsed schedule requirement and an assessment of the probability that the permittee will meet the next scheduled requirement on time.

3. The permittee shall submit two copies of any document required by the above schedule of compliance to the Region 2 Water Engineer (address on final page of permit) and 2 copies to the NYSDEC, Wastewater Permits South Section Chief, 625 Broadway, Albany, NY 12233-3505.

SPECIAL CONDITIONS - BEST MANAGEMENT PRACTICES

1. **General** - The permittee shall develop, maintain, and implement a Best Management Practices (BMP) plan to prevent releases of significant amounts of pollutants , including deicing/anti-icing chemicals, to the waters of the State through plant site runoff; spillage and leaks; sludge or waste disposal; and stormwater discharges including, but not limited to, drainage from raw material storage. Tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials at the facility shall participate in the development of this plan. BMPs shall be developed for areas of the facility occupied by tenants of the airport and shall be integrated with the plan fo the entire airport. The BMP plan shall include all appropriate components of a Storm Water Pollution prevention Plan (SWPP). USEPA guidance for development of the stormwater elements of the BMP plan is available in the September 1992 Manual Storm Water management for Industrial Activities, EPA 832-R-92-006.

   The BMP plan shall be documented in narrative form and shall include the 13 minimum BMPs and any necessary plot plans, drawings, or maps. Other documents already prepared for the facility such as a Safety Manual or a Spill Prevention, Control and Countermeasure (SPCC) plan may be used as part of the plan and may be incorporated by reference. A copy of the current BMP plan shall be submitted to the Department as required in item (2.) below and a copy must be maintained at the facility and shall be available to authorized Department representatives upon request.

   The BMPs applicable to each area of the facility occupied by a particular tenant shall be consistent with an overall BMPP for the entire airport. The permittee shall maintain, update and assure the proper implementation of the overall BMPP.

2. **Compliance Deadlines** - The initial completed BMP plan shall be submitted for Department approval **WITHIN 6 MONTHS OF THE EFFECTIVE DATE OF MODIFICATION TO THIS PERMIT** to the Region 2 Water Engineer, 1Hunters point Plaza, 47-40 21st Street, Long Island City, New York 11101-5407. The BMP plan shall be implemented within 6 months of submission, unless a different time frame is approved by the Department. The BMP plan shall be reviewed and the facility inspected annually and the plan shall be modified whenever: (a) changes at the facility materially increase the potential for releases of pollutants, (b) actual releases indicate the plan is inadequate, or (c) a letter from the Department identifies inadequacies in the plan. The permittee shall certify in writing, as an attachment to the December Discharge Monitoring Report (DMR), that the annual review has been completed. All BMP plan revisions (with the exception of SWPPPs - see item (4.B.) below) must be submitted to the Regional Water Engineer within 30 days. Subsequent modifications to or renewal of this permit does not reset or revise these deadlines unless a new deadline is set explicitly by such permit modification or renewal.

   The permittee shall submit an approvable Best Management Practices Report (BMPR) within 9 months of the EDPM which provides an evaluation of all alternative BMPs available to reduce the discharge of deicing/anti-icing materials (as required by section 7 of this section) and a prioritization of those practices. This report shall also include an estimated cost to implement the practice along with the time required to implement

3. **Facility Review** - The permittee shall review and inspect all facility components or systems (including but not limited to material storage areas; in-plant transfer, process, and material handling areas; loading and unloading operations; storm water, erosion, and sediment control measures; process emergency control systems; and sludge and waste disposal areas) where materials or pollutants are used, manufactured, stored or handled to evaluate the potential for the release of pollutants to the waters of the State. Tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials at the facility shall participate in this facility review and inspection. Tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials shall also provide all necessary information to the permittee for the permittee to complete it's evaluation. In performing such an evaluation, the permittee shall consider such factors as the probability of equipment failure or improper operation, cross-contamination of storm water by process materials, settlement of facility air emissions, the effects of natural phenomena such as freezing temperatures and precipitation, fires, and the facility's history of spills and leaks. The relative toxicity of the pollutant shall be considered in determining the significance of potential releases. The review and inspection shall evaluate whether measures to reduce pollutant loadings identified in the BMP plan are adequate and properly implemented in accordance with the terms of this permit or whether additional control measures are needed.

   The review and inspection shall address all substances present at the facility that are identified in Tables 6-10 of SPDES application Form NY-2C (available at *http://www.dec.state.ny.us/website/dcs/permits/olpermits/form2c.pdf*) or that are required to be monitored for by the SPDES permit. A summary of the annual Component or Systems review and inspection shall be submitted to the Department by January 31 of each year.

SPECIAL CONDITIONS - BEST MANAGEMENT PRACTICES, CONTINUED

4. A. **13 Minimum BMPs** - Whenever the potential for a release of pollutants to State waters is determined to be present, the permittee shall identify BMPs that have been established to prevent or minimize such potential releases. Where BMPs are inadequate or absent, appropriate BMPs shall be established. In selecting appropriate BMPs, the permittee shall consider good industry practices and, where appropriate, structural measures such as secondary containment and erosion/sediment control devices and practices. USEPA guidance for development of stormwater elements of the BMP plan is available in the September 1992 manual *Storm Water Management for Industrial Activities,* EPA 832-R-92-006 (available from NTIS, 703-487-4650, order # PB 92235969). As a minimum, the plan shall include the following BMPs:

1. BMP Pollution Prevention Team
2. Reporting of BMP Incidents
3. Risk Identification & Assessment
4. Employee Training
5. Inspections and Records
6. Security
7. Preventive Maintenance
8. Good Housekeeping
9. Materials/Waste Handling, Storage, & Compatibility
10. Spill Prevention & Response
11. Erosion & Sediment Control
12. Management of Runoff
13. Street Sweeping

B. **Stormwater Pollution Prevention Plans (SWPPPs) Required for Discharges of Stormwater From Construction Activity to Surface Waters** - As part of BMP #11, a SWPPP shall be developed prior to the initiation of any site disturbance of one acre or more of uncontaminated area. Uncontaminated area means soils or groundwater which are free of contamination by any toxic or non-conventional pollutants identified in Tables 6-10 of SPDES application Form NY-2C. Disturbance of any size contaminated area(s) and the resulting discharge of contaminated stormwater is not authorized by this permit unless the discharge is under State or Federal oversight as part of a remedial program or after review by the Regional Water Engineer; nor is such discharge authorized by any SPDES general permit for stormwater discharges. SWPPPs are not required for discharges of stormwater from construction activity to groundwaters.

The SWPPP shall conform to the *New York Standards and Specifications for Erosion and Sediment Control* and *New York State Stormwater Management Design Manual,* unless a variance has been obtained from the Regional Water Engineer, and to any local requirements. The permittee shall submit a copy of the SWPPP and any amendments thereto to the local governing body and any other authorized agency having jurisdiction or regulatory control over the construction activity **at least 30 days prior to soil disturbance**. The SWPPP shall also be submitted to the Regional Water Engineer if contamination, as defined above, is involved and the permittee must obtain a determination of any SPDES permit modifications and/or additional treatment which may be required prior to soil disturbance. Otherwise, the SWPPP shall be submitted to the Department only upon request. When a SWPPP is required, a properly completed *Notice of Intent* (NOI) form shall be submitted (available at *www.dec.state.ny.us/website/dow/toolbox/swforms.html*) prior to soil disturbance. Note that submission of a NOI is required for informational purposes; the permittee is not eligible for and will not obtain coverage under any SPDES general permit for stormwater discharges, nor are any additional permit fees incurred. SWPPPs must be developed and submitted for subsequent site disturbances in accordance with the above requirements. The permittee is responsible for ensuring that the provisions of each SWPPP is properly implemented.

5. **Required Sampling For "Hot Spot" Identification** - Development of the BMP plan shall include sampling of waste stream segments for the purpose of pollutant "hot spot" identification. The economic achievability of effluent limits will not be considered until plant site "hot spot" sources have been identified, contained, removed or minimized through the imposition of site specific BMPs or application of internal facility treatment technology. For the purposes of this permit condition a "hot spot" is a segment of an industrial facility (including but not limited to soil, equipment, material storage areas, sewer lines etc.) which contributes elevated levels of problem pollutants to the wastewater and/or stormwater collection system of that facility. For the purposes of this definition, problem pollutants are substances for which treatment to meet a water quality or technology requirement may, considering the results of waste stream segment sampling, be deemed unreasonable. For the purposes of this definition, an elevated level is a concentration or mass loading of the pollutant in question which is sufficiently higher than the concentration of that same pollutant at the compliance monitoring location so as to allow for an economically justifiable removal and/or isolation of the segment and/or B.A.T. treatment of wastewaters emanating from the segment.

SPECIAL CONDITIONS - BEST MANAGEMENT PRACTICES, CONTINUED

6. **Facilities with Petroleum and/or Chemical Bulk Storage (PBS and CBS) Areas** - Compliance must be maintained with all applicable regulations including those involving releases, registration, handling and storage (6NYCRR 595-599 and 612-614). Stormwater discharges from handling and storage areas should be eliminated where practical.

A. Spill Cleanup - All spilled or leaked substances must be removed from secondary containment systems as soon as practical and for CBS storage areas within 24 hours, unless written authorization is received from the Department. The containment system must be thoroughly cleaned to remove any residual contamination which could cause contamination of stormwater and the resulting discharge of pollutants to waters of the State. Following spill cleanup the affected area must be completely flushed with clean water three times and the water removed after each flushing for proper disposal in an on-site or off-site wastewater treatment plant designed to treat such water and permitted to discharge such wastewater. Alternately, the permittee may test the first batch of stormwater following the spill cleanup to determine discharge acceptability. If the water contains no pollutants it may be discharged. Otherwise it must be disposed of as noted above. See *Discharge Monitoring* below for the list of parameters to be sampled for.

B. Discharge Operation - Stormwater must be removed before it compromises the required containment system capacity. Each discharge may only proceed with the prior approval of the permittee staff person responsible for ensuring SPDES permit compliance. Bulk storage secondary containment drainage systems must be locked in a closed position except when the operator is in the process of draining accumulated stormwater. Transfer area secondary containment drainage systems must be locked in a closed position during all transfers and must not be reopened unless the transfer area is clean of contaminants. Stormwater discharges from secondary containment systems should be avoided during periods of precipitation. A logbook shall be maintained on site noting the date, time and personnel supervising each discharge.

C. Discharge Screening - Prior to each discharge from a secondary containment system the stormwater must be screened for contamination*. All stormwater must be inspected for visible evidence of contamination. Additional screening methods shall be developed by the permittee as part of the overall BMP Plan, e.g. the use of volatile gas meters to detect the presence of gross levels of gasoline or volatile organic compounds. If the screening indicates contamination, the permittee must collect and analyze a representative sample** of the stormwater. If the water contains no pollutants it may be discharged. Otherwise it must either be disposed of in an on site or off site wastewater treatment plant designed to treat and permitted to discharge such wastewater or the Regional Water Engineer can be contacted to determine if it may be discharged without treatment.

D. Discharge Monitoring - Unless the discharge from any bulk storage containment system outlet is identified in the SPDES permit as an outfall with explicit effluent and monitoring requirements, the permittee shall monitor the outlet as follows:

(I) *Bulk Storage Secondary Containment Systems:*

(a) The volume of each discharge from each outlet must be monitored. Discharge volume may be calculated by measuring the depth of water within the containment area times the wetted area converted to gallons or by other suitable methods. A representative sample shall be collected of the first discharge* following any cleaned up spill or leak. The sample must be analyzed for pH, the substance(s) stored within the containment area and any other pollutants the permittee knows or has reason to believe are present**.

(b) Every fourth discharge* from each outlet must be sampled for pH, the substance(s) stored within the containment area and any other pollutants the permittee knows or has reason to believe are present**.

(ii) *Transfer Area Secondary Containment Systems:*

The first discharge* following any spill or leak must be sampled for flow, pH, the substance(s) transferred in that area and any other pollutants the permittee knows or has reason to believe are present**.

E. Discharge Reporting - Any results of monitoring required above, excluding screening data, must be submitted to the Department by appending them to the corresponding DMR. Failure to perform the required discharge monitoring and reporting shall constitute a violation of the terms of the SPDES permit.

F. Prohibited Discharges - **In all cases, any discharge which contains a visible sheen, foam, or odor, or may cause or contribute to a violation of water quality is prohibited.** The following discharges are prohibited unless specifically authorized elsewhere in this SPDES permit: spills or leaks, tank bottoms, maintenance wastewaters, wash waters where detergents or other chemicals have been used, tank hydrotest and ballast waters, contained fire fighting runoff, fire training water contaminated by contact with pollutants or containing foam or fire retardant additives, and unnecessary discharges of water or wastewater into secondary containment systems.

SPECIAL CONDITIONS - BEST MANAGEMENT PRACTICES, CONTINUED

* Discharge includes stormwater discharges and snow and ice removal. If applicable, a representative sample of snow and/or ice should be collected and allowed to melt prior to assessment.

** If the stored substance is gasoline or aviation fuel then sample for oil & grease, benzene, ethylbenzene, naphthalene, toluene and total xylenes (EPA method 602). If the stored substance is kerosene, diesel fuel, fuel oil, or lubricating oil then sample for oil & grease and polynuclear aromatic hydrocarbons (EPA method 610). If the substance(s) are listed in Tables 6-8 of SPDES application form NY-2C then sampling is required. If the substance(s) are listed in NY-2C Tables 9-10 sampling for appropriate indicator parameters may be required, e.g. BOD5 or toxicity testing. Contact the facility inspector for further guidance. In all cases flow and pH monitoring is required.

7. **Airports:**

For all airports, the following must be addressed in the BMP Plan which includes the components of a Storm Water Pollution Prevention Plan. The requirements listed under this section apply to stormwater discharges associated with industrial activity from air transportation facilities including air transportation (scheduled and non-scheduled); air courier services; airports; flying fields (except those maintained by aviation clubs); air terminal services including air traffic control (except government); aircraft storage at airports; aircraft upholstery repair; airfreight handling at airports; airport hangar rental; airport leasing, if operating airport; airport terminal services; hangar operation; airport, aircraft service and maintenance including aircraft cleaning and janitorial service; aircraft servicing /repairing except on a factory basis); vehicle maintenance shops; material handling facilities; equipment clearing operations; and airport/aircraft deicing and anti-icing. [Note: For the purpose of this section, the term "deicing" is defined as the process to remove frost, snow, or ice and "anti-icing" is the process which prevents the accumulation of frost, snow, or ice.] Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, or deicing/anti-icing operations are addressed under this section. Tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials shall provide all necessary information to the permittee for the permittee to complete all requirements under this section "7. Airports".

Additional Requirement for the BMP Plan: BMPs shall be developed for areas of the facility occupied by tenants of the airport and shall be integrated with the plan for the entire airport. For the purposes of this permit, tenants of the airport facility include airline passenger or cargo companies, fixed based operators and other parties who have contracts with the airport authority to conduct business operations on airport property and whose operations result in stormwater discharges associated with industrial activity. The BMP plan shall include, at a minimum, the following items.

A. Site description

(I) Site map - The site map shall identify where any of the following activities may be exposed to precipitation/surface runoff: aircraft and runway deicing/anti-icing operations; fueling stations; aircraft, ground vehicle and equipment maintenance/cleaning areas; and storage areas for aircraft, ground vehicles and equipment awaiting maintenance.

(ii) Summary of potential pollutant sources - A narrative description of the potential pollutant sources from the following activities: aircraft, runway, ground vehicle and equipment maintenance and cleaning; aircraft and runway deicing/anti-icing operations (including apron and centralized aircraft deicing/anti-icing stations, runways, taxiways and ramps). Facilities which conduct deicing/anti-icing operations shall maintain a record of the types (including the Material Safety Data Sheets (MSDS)) and monthly quantities of deicing/anti-icing chemicals used, either as measured amounts, or in the absence of metering, as estimated amounts. This includes all deicing/anti-icing chemicals, not just glycols and urea (e.g., potassium acetate). Tenants and fixed-base operators who conduct deicing/anti-icing operations shall provide the above information to the airport authority for inclusion in the BMP for the entire facility.

B. Stormwater controls

(I) Good housekeeping

(a) Aircraft, ground vehicle and equipment maintenance areas - The permittee must describe and implement measures that prevent or minimize the contamination of stormwater runoff from all areas used for aircraft, ground vehicle and equipment maintenance (including the maintenance conducted on the terminal apron and in dedicated hangars). The following practices (or their equivalents) shall be considered: performing maintenance activities indoors; maintaining an organized inventory of materials used in the maintenance areas ; draining all parts of fluids prior to disposal; preventing the practice of hosing down the apron or hangar floor; using dry cleanup methods ; and collecting the stormwater runoff from the maintenance area and providing treatment or recycling.

SPECIAL CONDITIONS - BEST MANAGEMENT PRACTICES, CONTINUED

(b) Aircraft, ground vehicle and equipment cleaning areas - Permittees shall ensure that cleaning of equipment is conducted in designated areas only and clearly identify these areas on the ground and delineate them on the site map. The permittee must describe and implement measures that prevent or minimize the contamination of the stormwater runoff from cleaning areas .

(c). Aircraft, ground vehicle and equipment storage areas - The storage of aircraft, ground vehicles and equipment awaiting maintenance must be confined to designated areas (delineated on the site map). The following BMPs (or their equivalents) shall be considered: indoor storage of aircraft and ground vehicles; the use of drip pans for the collection of fluid leaks; and perimeter drains, dikes or berms surrounding storage areas.

(d) Material storage areas - Storage vessels of all materials (e.g., used oils, hydraulic fluids, spent solvents, and waste aircraft fuel) must be maintained in good condition, so as to prevent or minimize contamination of stormwater, and plainly labeled (e.g., "used oil," "Contaminated Jet A," etc.). The permittee must describe and implement measures that prevent or minimize contamination of precipitation/runoff from storage areas. The following BMPs or their equivalents shall be considered: indoor storage of materials centralized storage areas for waste materials; and installation of berms/dikes around storage areas.

(e) Airport fuel system and fueling areas - The permittee must describe and implement measures that prevent or minimize the discharge of fuels to the storm sewer/surface waters resulting from fuel servicing activities or other operations conducted in support of the airport fuel system. The following BMPs (or their equivalents) shall be considered: implementing spill and overflow practices (e.g., placing absorptive materials beneath aircraft during fueling operations); using dry cleanup methods; and collecting the stormwater runoff.

(ii) Source reduction - The permittee shall consider alternatives to the use of urea and glycol-based airfield deicing/anti-icing chemicals to reduce the aggregate amount of airfield deicing/anti-icing. The permittee shall require the tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials to consider alternatives to the use of urea and glycol-based deicing/anti-icing chemicals to reduce the aggregate amount of deicing/anti-icing 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.

(a) Runway deicing operations - The Permittee shall evaluate present application rates to ensure against excessive over application by analyzing application rates and adjusting as necessary, consistent with considerations of flight safety. Also the following BMP options shall be considered (or their equivalents): metered application of chemicals; prewetting dry chemical constituents prior to application; installation of runway ice detection systems; implementing anti-icing operations as a preventive measure against ice buildup.

(b) Aircraft deicing/anti-icing operations - The Permittee shall require tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials to determine whether excessive application of deicing/anti-icing chemicals occurs, and adjust as necessary, consistent with considerations of flight safety. This evaluation should be carried out by the personnel most familiar with the particular aircraft and flight operations in question (versus an outside entity such as the airport authority). The use of alternative deicing/anti-icing agents as well as containment measures for all applied chemicals shall be considered. Also, the following BMP options (or their equivalents) shall be considered 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; and thermal blankets for MD-80s and DC-9s. The use of ice-detection systems and airport traffic flow strategies and departure slot allocation systems shall also be considered.

(iii) Management of runoff - Where deicing/anti-icing operations occur, the permittee, tenants and/or other entities who apply or otherwise use deicing and/or anti-icing materials shall describe and implement a program to control or manage contaminated runoff to reduce the amount of pollutants being discharged from the site. The following BMPs (or their equivalents) shall be considered: establishing a dedicated deicing facility with a runoff collection/recovery system; using vacuum/collection trucks; storing contaminated stormwater/deicing fluids in tanks and releasing controlled amounts to

SPECIAL CONDITIONS - BEST MANAGEMENT PRACTICES, CONTINUED

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. The plan shall consider the recovery of deicing/anti-icing materials when these materials are applied during nonprecipitation events (e.g., covering storm sewer inlets, using booms, installing absorptive interceptors in the drains, etc.) to prevent these materials from later becoming a source of stormwater contamination. Used deicing fluid should be recycled whenever possible.

(iv) Routine facility inspections - The inspection frequency shall be specified in the plan. At a minimum, inspections shall be conducted once per month during deicing/anti-icing season (e.g., October through April for most airports). If deicing occurs before or after this period, the inspections shall be expanded 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, the inspection frequency shall be increased to weekly until such time as the chemical spills/discharges or impacts are reduced to acceptable levels.

(v) Comprehensive site compliance evaluation - The annual site compliance evaluations shall be conducted by qualified facility personnel during periods of actual deicing operations, if possible. If not practicable during active deicing or if the weather is too inclement, the evaluations shall be conducted when deicing operations are likely to occur and the materials and equipment for deicing are in place.

DISCHARGE NOTIFICATION REQUIREMENTS

(a) Except as provided in (c) of these Discharge Notification Act requirements, the permittee shall install and maintain identification signs at all outfalls to surface waters listed in this permit. Such signs shall be installed within 90 days of the Effective Date of this Modification.

(b) Subsequent modifications to or renewal of this permit does not reset or revise the deadline set forth in (a) above, unless a new deadline is set explicitly by such permit modification or renewal.

(c) The Discharge Notification Requirements described herein do not apply to outfalls from which the discharge is composed exclusively of storm water, or discharges to ground water.

(d) The sign(s) shall be conspicuous, legible and in as close proximity to the point of discharge as is reasonably possible while ensuring the maximum visibility from the surface water and shore. The signs shall be installed in such a manner to pose minimal hazard to navigation, bathing or other water related activities. If the public has access to the water from the land in the vicinity of the outfall, an identical sign shall be posted to be visible from the direction approaching the surface water.

The signs shall have **minimum** dimensions of eighteen inches by twenty four inches (18" x 24") and shall have white letters on a green background and contain the following information:

N.Y.S. PERMITTED DISCHARGE POINT

SPDES PERMIT No.: NY_____

OUTFALL No. :____

For information about this permitted discharge contact:

Permittee Name: _____

Permittee Contact: _____

Permittee Phone: ( ) - ### - ####

OR:

NYSDEC Division of Water Regional Office Address :

NYSDEC Division of Water Regional Phone: ( ) - ### -####

(e) For each discharge required to have a sign in accordance with a), the permittee shall, concurrent with the installation of the sign, provide a repository of copies of the Discharge Monitoring Reports (DMRs), as required by the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of this permit. This repository shall be open to the public, at a minimum, during normal daytime business hours. The repository may be at the business office repository of the permittee or at an off-premises location of its choice (such location shall be the village, town, city or county clerk's office, the local library or other location as approved by the Department). In accordance with the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of your permit, each DMR shall be maintained on record for a period of five years.

(f) The permittee shall periodically inspect the outfall identification signs in order to ensure that they are maintained, are still visible and contain information that is current and factually correct.

RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

a) The permittee shall also refer to 6 NYCRR Part 750-1.2(a) and 750-2 for additional information concerning monitoring and reporting requirements and conditions.

b) The monitoring information required by this permit shall be summarized, signed and retained for a period of at least five years from the date of the sampling for subsequent inspection by the Department or its designated agent. **Also, monitoring information required by this permit shall be summarized and reported by submitting;**

[X] (if box is checked) completed and signed Discharge Monitoring Report (DMR) forms for each __1__ month reporting period to the locations specified below. Blank forms are available at the Department's Albany office listed below. The first reporting period begins on the effective date of this permit and the reports will be due no later than the 28th day of the month following the end of each reporting period.

[ ] (if box is checked) an annual report to the Regional Water Engineer at the address specified below. The annual report is due by February 1 and must summarize information for January to December of the previous year in a format acceptable to the Department.

[ ] (if box is checked) a monthly "Wastewater Facility Operation Report..." (form 92-15-7) to the:
[ ] Regional Water Engineer and/or [ ] County Health Department or Environmental Control Agency specified below

Send the **original** (top sheet) of each DMR page to:

Department of Environmental Conservation
Division of Water
Bureau of Water Compliance Programs
625 Broadway
Albany, New York 12233-3506

Phone: (518) 402-8177

Send the **first copy** (second sheet) of each DMR page to:

Department of Environmental Conservation
Region 2 Water Engineer
1 Hunters Point Plaza
47-40 21st Street
Long Island City, New York 11101-5407

Phone: (718) 482-4900

c) Noncompliance with the provisions of this permit shall be reported to the Department as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2.

d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

e) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculations and recording of the data on the Discharge Monitoring Reports.

f) Calculation for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

g) Unless otherwise specified, all information recorded on the Discharge Monitoring Report shall be based upon measurements and sampling carried out during the most recently completed reporting period.

h) Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section five hundred two of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be sent to the Environmental Laboratory Accreditation Program, New York State Health Department Center for Laboratories and Research, Division of Environmental Sciences, The Nelson A. Rockefeller Empire State Plaza, Albany, New York 12201.

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 1 — AIRCRAFT DEICING

PURPOSE:
Prevent or reduce the discharge of pollutants to soil, groundwater and/or stormwater from aircraft deicing and anti-icing procedures. The level of biochemical oxygen demand (BOD) associated with the discharge of deicing compounds into receiving waters, such as Thurston and Bergen Basins and Jamaica Bay, can result in a decrease in the available oxygen which can impact aquatic life.

APPROACH TO EXISTING FACILITY ACTIVITIES:
Operational Considerations

- Perform training for all personnel involved with deicing operations. The training should, at a minimum, include source reduction techniques, best management practices, good housekeeping and should educate tenants about the environmental impacts of use and over-spraying.
- Depending on weather conditions, apply only enough fluid to surfaces to ensure the safe operation of the aircraft. Excess fluid dripped to the ground enters directly into the storm drain.
- Depending on weather conditions use a range of propylene glycol/water blends (i.e., warmer temperatures, use a 30/70 glycol/water blend, colder temperatures/inclement weather use a 55/45 mix) to minimize the discharge of contaminants.
- In place of deicing at the gate use the new Radiant Deicing Facility (proximate to Terminal 1).
- Identify the number of flights affected by Irregular Operations Networks (IROPs) during giving inclement weather events to more effectively schedule aircraft departures to eliminate or greatly reduce the need for secondary application of deicing.
- Assess useful life of existing deicing trucks. Upgrade the deicing trucks to include more efficient nozzles, heated deicing agent, blending capabilities, and air.
- Once approved by the FAA consider using alternative low environmental-impact deicing/anti-icing compounds now under development.
- Transfer deicing agents only in paved areas.
- The use of ethylene glycol is strongly discouraged and urea is strictly prohibited at JFK airport.
- Only materials approved by Port Authority may be used for runway and taxiway deicing.
- Record quantities of all deicing material used during deicing months to the Port Authority monthly.

TARGETED ACTIVITIES

- Aircraft deicing
- Aircraft anti-icing

TARGETED POLLUTANTS

- Propylene glycol
- Ethylene Glycol (strongly discouraged)
- Urea (strictly prohibited)

KEY APPROACHES

- Apply only required amounts of fluid
- Educate personnel about the use of deicing agents.
- Use a range of glycol/water blends
- Use Radiant Deicing Facility.
- Upgrade existing truck fleet
- Implement forthcoming recommendations of FAA
- Report propylene and/or ethylene glycol (strongly discouraged) releases to appropriate regulatory agencies

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Parts 595-599 Chemical Bulk Storage Regulations
- 6 NYCRR Parts 370-374 New York State Hazardous Waste Regulations
- 6 NYCRR Part 360 Solid Waste Regulations
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for StormWater Discharges
- 40 CFR 302 Designation of Reportable Quantities and Notification Requirements for Hazardous Substances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- 40 CFR 372 Toxic Chemical Release Reporting: Community Right-to-Know
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 2 AIRCRAFT, VEHICLE AND EQUIPMENT FUELING

PURPOSE:

Prevent or reduce the discharge of pollutants to stormwater, groundwater, soil, and air from aircraft, vehicle, and equipment fueling.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

General

- Install shear valves or "breakaway" hose connections at all fuel dispensing stations and on all fuel dispensing equipment that will provide emergency shutdown of flow should the fueling connection be broken through movement.
- Periodically check hoses associated with fuel dispensing for leaks and tears.
- Automatic shut-off mechanisms should be in place on fuel tankers. These valves should remain in the closed position unless manually opened during fueling.
- Use absorbent materials and spot cleaning for small spills; do not hose down the area unless the storm drains in close proximity are blocked and drainage is collected by vacuum vehicle and disposed of through a permitted connection to an approved treatment facility.
- Avoid mobile fueling of equipment wherever feasible; fuel mobile equipment at designated fueling areas.
- Use drain blockers (e.g., pigs/mats) at catch basins or install gate valves at catch basins for use during fueling activity.
- Collect and properly dispose of any fuel spilled or leaked. Vacuum equipment/vehicles are recommended for collection.
- Always dispose of materials in an approved manner. Never discharge materials to a catch basin.
- Employ secondary containment or cover when transferring fuel from a tank truck to a vehicle or equipment fuel tank.
- Manage the disposal of water that collects in fuel tanks and fueling hydrant sumps according to state and federal regulations**.**
- Inspect, clean and maintain sumps and oil/water separators at appropriate intervals.

Motor Vehicle/ Equipment

- Ensure that motor vehicle fuel composition meets seasonal requirements for oxygen content and volatility.
- Operate appropriate vapor recovery equipment at gasoline dispensing sites.
- Install berms or curbing to divert stormwater runoff away from fueling area to avoid contact with contaminated surfaces.

TARGETED ACTIVITIES

- Aircraft fueling
- Motor vehicle fueling
- Equipment fueling

TARGETED POLLUTANTS

- Fuel Vapors
- Petroleum Hydrocarbons

KEY APPROACHES

- Install berms or curbing around fueling areas
- Use absorbent materials and/or vacuum equipment for spills
- Install proper equipment for fuel dispensing and tank monitoring to prevent spills, leaks and overflows
- Install vapor recovery systems at fuel dispensers and tanks
- Install canopies

BMP 2 AIRCRAFT, VEHICLE AND EQUIPMENT FUELING

Operational Considerations *(Continued.)*

- Provide appropriate monitoring for tanks containing fuel, such as:
  - Level indicators and gauges
  - Overfill protection with alarms
  - Interstitial leak detection for double-walled tanks
  - Routine inspection/lockout for drainage valves for tank containment areas.
- Test spill prevention/overfill protection equipment annually.
- Fuel pumps intended for vehicular use should be posted with signs stating "No Topping Off" to prevent overflow.

Aircraft

- Tanker trucks (aviation fueling vehicles) should be equipped with spill response kits.
- Periodically inspect valves on mobile aircraft fuelers and on aircraft wing tips.

Contingency Response

- Conduct proper spill reporting to the appropriate regulatory agencies.
- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may likely occur. Furnish all maintenance vehicles with adequate supplies of spill response materials and appropriate spill response procedures.
- Develop and implement a Spill Prevention Control and Countermeasure Plan (SPCC), required in 40 CFR 112.3(a), (b).
- Train Employees in emergency procedures and evacuation methods.

Inspection and Testing

- Record all maintenance activities and inspections relating to fueling equipment and containers in a log book.
- Underground fuel storage tanks should be tested as required by federal and state laws.
- Provide the appropriate level of employee training in the following areas; spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Develop regular maintenance and inspection programs for oil/water separators.
- Characterize wastes collected from oil/water separators. Dispose of these wastes properly and provide appropriate employee training.
- Inspect Stage II vapor recovery systems daily for integrity and efficiency.

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- Design fueling areas to prevent the run-on of stormwater and the runoff of spills by employing the following approaches (where authorized by the Port Authority):
  - Cover the fueling area if possible.
  - Use a perimeter drain or slope the fueling area to a dead-end sump or oil/water separator.
  - Pave the fueling area with concrete rather than asphalt.
  - Pave the fueling area with concrete rather than asphalt.
  - Where covering is infeasible and the fuel dispensing area has an asphalt pavement surface, consider applying a suitable sealant that protects the asphalt from spilled fuels.
- If a dead-end sump is not used to collect spills, install an appropriately sized oil/water separator.

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 2 AIRCRAFT, VEHICLE AND EQUIPMENT FUELING

APPROACH TO SPILLS AT EXISTING FACILITIES

- Prevent spills from entering storm drains, floor drains, other receiving waters, and soil, through use of absorbent pigs, booms, or other means.
- Minimize immediate fire and safety hazards.
- Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police.
- Tenants and contractors shall be required to complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill leak, and recommended remedial action.
- Communicate spill events to others by using the radio network or series of alarms where appropriate.
- Remove and dispose contaminated soil/material.
- Remove and recover free product in surface or groundwaters.
- Repair or replace leaking equipment.
- Perform other actions which regulatory agencies may require.
- Install Stage I and Stage II vapor recovery systems on gasoline dispensing equipment.
- Install shear valves on all fuel dispensing equipment.
- Design facilities to include secondary containment where required and/or appropriate.
- Upgrade or replace existing fuel storage tanks to have leak detection, spill containment, and overfill prevention before December 22, 1998.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR 608, 611 Oil Spill Prevention and Compensation Act
- 6 NYCRR 595-597 Chemical Bulk Storage
- 6 NYCRR Part 360 Solid Waste Regulations
- 6 NYCRR 360-14 Waste Oil Regulations
- 6 NYCRR Parts 612-614 Petroleum Bulk Storage
- 6 NYCRR Part 371 Hazardous Waste Regulations
- 29 CFR 1910 (Subparts G, H, I, J, and K,) Hazardous Materials, Environmental Controls, and Personnel Protection.
- 29 CFR 1910.1200 OSHA Hazard Communication Standard
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 260-262, 268, and 270-272 Hazardous Waste Management
- 40 CFR 264-265 Preparedness, Prevention and Contingency Plan (PPCP)
- 40 CFR 302 Designation, Reportable Quantities and Notification Requirements for Hazardous Substances under CERCLA
- 40 CFR 372 Toxic Chemical Release Reporting: Community Right-to-Know
- 40 CFR 413, 433, and 469 NPDES Toxic Organic Management Plan (NPDESTOMP)
- 40 CFR 761 Toxic Substances
- 40 CFR 33 Oil Pollution Act of 1990
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 3 AIRCRAFT, VEHICLE AND EQUIPMENT MAINTENANCE

PURPOSE:

Prevent or reduce the discharge of pollutants to surface water, groundwater, Publicly Owned Treatment Works (POTW), soil and air from aircraft, vehicle, and equipment maintenance and repair, including ground vehicle and floor washdowns.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Minimum maintenance activities, including preflight checks and emergency repairs, shall employ the following to the extent practicable. All other maintenance shall be performed indoors or at designated airport facilities.

Good Housekeeping

- Use drip pans.
- Use absorbent materials at potential problem areas. Collect/remove absorbent materials from area after use and dispose of them in an appropriate manner.
- Drain and crush oil filters (and oil containers) before recycling or disposal. Store crushed oil filters and empty lubricant containers in a leak-proof container covered if outdoors.
- Label storm drain inlets to indicate they are to receive no wastes. Do not hose down work areas to the storm or sanitary drainage system or use concrete cleaning products unless the storm drain inlet is blocked and wash water is collected and properly disposed of through a permitted sewer connection. As an alternative, use mops, dry sweeping compound, or contract professional cleaning services.
- Confirm that third party cleaning contractors are informed of BMPs and appropriate disposal practices.
- Drain and properly dispose of all fluids and remove batteries from salvage aircraft, vehicles, and equipment
- Recycle or properly dispose of the following: greases, oils, antifreeze, brake fluid, solvents or other cleaning solutions, hydraulic fluid, batteries, transmission fluid, and filters.
- Use biodegradable products and substitute materials with less hazardous properties where feasible.
- Tenants are required to use drip pans when performing maintenance such as adding oil or changing oil at the ramps.

TARGETED ACTIVITIES

- Aircraft Maintenance
- Ground Vehicle Maintenance
- Equipment Maintenance
- Ground Transportation

TARGETED POLLUTANTS

- Oils & greases
- Petroleum hydrocarbons
- Propylene glycol
- Halogenated solvents
- Non-halogenated solvents

KEY APPROACHES

- Perform maintenance indoors, if possible
- Cap floor drains in areas where maintenance occurs
- Consider off-site maintenance by contractors
- Initiate employee spill prevention and response training

BMP 3 AIRCRAFT, VEHICLE AND EQUIPMENT MAINTENANCE

Maintenance

- Maintain clean equipment by eliminating excessive amounts of external oil and grease buildup. Use water-based cleaning agents or non-chlorinated solvents to clean equipment.
- Activities such as painting and stripping, battery charging, and welding may require air permitting; check with local and state agencies for applicability.

Operational Considerations (continued)

Physical Site Usage

- Conduct maintenance activities indoors or at designated airport locations.
- Use designated washing, steam cleaning, and degreasing areas to clean equipment.
- Store mechanical parts and equipment that may yield even small amounts of contaminants (i.e., oil or grease) under cover and away from drains.

Structural Control

- Maintenance and cleaning areas should be equipped with runoff controls that prevent discharge to storm and sanitary sewers.

Inspection and Testing

- Provide the appropriate level of employee training in the following areas: spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Provide employee stormwater quality awareness training.
- Develop regular maintenance and inspection programs for oil/water separators.
- Characterize wastes collected from oil/water separators. Dispose of these wastes properly and provide appropriate employee training.
- Additional training procedures and requirements are identified in BMP 15: Stormwater Pollution Prevention Education.

Contingency Response

- Maintain adequate supplies of spill response equipment and materials (i.e. Speedy Dry, spill mats) in accessible locations near areas where spills may be likely to occur. Furnish all maintenance vehicles with adequate supplies of spill response materials and appropriate spill response procedures.

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- Provide indoor maintenance areas when implementing BMPs at existing facilities and future upgrades to other facilities.
- Do not install floor drains in areas where maintenance is to be performed.

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 3 AIRCRAFT, VEHICLE AND EQUIPMENT MAINTENANCE

APPROACH TO SPILLS AT EXISTING FACILITIES

- Prevent spills from entering storm drains, floor drains, other receiving waters, and soil, through use of absorbent pigs, booms, drain covers, or other appropriate means.
- Minimize immediate fire and safety hazards.
- Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police.
- Tenants and contractors shall complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill leak, and recommended remedial action.
- Communicate spill events to others by using the radio network or series of alarms where appropriate.

APPROACH TO SPILLS AT EXISTING FACILITIES (Continued)

- Remove and dispose contaminated soil/material.
- Remove and recover free product in surface or groundwater.
- Repair or replace leaking equipment.
- Perform other actions which regulatory agencies may require.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR 608, 611 Oil Spill Prevention and Compensation Act
- 6 NYCRR 595-597 Chemical Bulk Storage Regulations
- 6 NYCRR Part 360 Solid Waste Regulations
- 6 NYCRR 360-14 Waste Oil Regulations
- 6 NYCRR Parts 612-614 Petroleum Bulk Storage Regulations
- 6 NYCRR Part 371 Hazardous Waste Regulations
- 29 CFR 1910 (Subparts G, H, I, J, and K,) Hazardous Materials, Environmental Controls, and Personnel Protection.
- 29 CFR 1910.1200 OSHA Hazard Communication Standard
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 260-262, 268, and 270-272 Hazardous Waste Management
- 40 CFR 264-265 Preparedness, Prevention and Contingency Plan (PPCP)
- 40 CFR 302 Designation, Reportable Quantities and Notification Requirements for Hazardous Substances under CERCLA
- 40 CFR 372 Toxic Chemical Release Reporting: Community Right-to-Know
- 40 CFR 413, 433, and 469 NPDES Toxic Organic Management Plan (NPDESTOMP)
- 40 CFR 761 Toxic Substances
- 40 CFR 33 Oil Pollution Act of 1990
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 4 — AIRCRAFT, VEHICLE AND EQUIPMENT WASHING, STEAM CLEANING AND DEGREASING

PURPOSE:

Prevent or reduce the discharge of pollutants to soil, groundwater, and stormwater drains from aircraft, vehicle, and equipment washing, and equipment degreasing.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Note: Aircraft, vehicle, and equipment washing, steam cleaning, and degreasing are prohibited at JFK with the following exceptions:

- Vehicles, aircraft, and equipment are washed indoors only and any wastewater generated is discharged to the sanitary sewer.
- Washing is discouraged at JFK's outdoor areas not connected to sanitary sewers.
- Vehicles washed at the designated Allied Building Lot outdoor area, requires that storm drains are covered prior to the commencement of the washing cycle. All wastewater must be captured and taken off site for disposal. No vehicle wash water from the designated outdoor area is allowed to enter either the sanitary sewer or the storm drains.
- For cleaning activities allowed at JFK, refer to the following operational, contingency and training approaches.

Operational Considerations

Implement the following to the maximum extent practical.

Good Housekeeping

- Use "dry" washing and surface preparation techniques where feasible. Several products are available to clean even the largest aircraft. Remove all materials (i.e., drippings and residue) using vacuum methods. Dispose of properly.
- Provide secondary containment for containers of washing and steam cleaning additives.
- Use biodegradable phosphate-free detergents.
- Keep washing area clean and free of waste.
- Include proper signage indicating that the discharge of waste oils into the drains is strictly prohibited.
- Discharge wash water to an approved treatment facility (sanitary sewer system) through a permitted connection.
- Ensure that wash water discharged to the sanitary sewer meets the pretreatment standards of the local POTW which treats the water.

Physical Site Usage

- Consider off-site commercial washing and steam cleaning where feasible. Using appropriate off-site facilities that will decrease the waste generated on-site.

TARGETED ACTIVITIES

- Aircraft washing
- Vehicle washing
- Equipment washing
- Equipment degreasing

TARGETED POLLUTANTS

- Oil and grease
- Solvents
- Vehicle fluids
- Cleaning solutions

KEY APPROACHES

- Use designated areas
- Use dry washing techniques
- Recycle wash water or discharge appropriately
- Reclaim/Recover wash water
- Cover catch basins
- Provide training

BMP 4 AIRCRAFT, VEHICLE AND EQUIPMENT WASHING

Physical Site Usage (Continued)

- Do not contract with auto dealers or other cleaning companies that use wet operations discharging to the storm drain system or receiving waters.
- Always use facility-designated indoor wash areas, or the JFK designated outdoor wash area, to prevent contamination of stormwater by contact with wastes.

Maintenance

- Inspect, clean, and maintain oil/water separators that are connected to indoor floor drains and receive discharges of washwater.

Contingency Response

- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.

Inspection and Training

- Provide the appropriate level of employee training in the following areas: spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Develop regular maintenance and inspection programs for oil/water separators.
- Characterize wastes derived from oil/water separators.
- Additional training procedures and requirements are identified in BMP 15: Stormwater Pollution Prevention Education.

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- Consider off-site commercial washing where feasible. Using appropriate off-site facilities that will decrease the waste generated on-site.

APPROACH TO SPILLS AT EXISTING FACILITIES

- Prevent spills from entering storm drains, floor drains, other receiving waters, and soil, through use of absorbent pigs, booms, or other means.
- Minimize immediate fire and safety hazards.
- Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police.
- Tenants and contractors shall complete a PANYNJ Spill Report Form and submit it to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill leak, and recommended remedial action.
- Communicate spill events to others by using the radio network or series of alarms where appropriate.
- Remove and dispose contaminated soil/material.
- Remove and recover free product in surface waters or groundwaters.
- Repair or replace leaking equipment.

Perform other actions which regulatory agencies may require.

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 4	AIRCRAFT, VEHICLE AND EQUIPMENT WASHING

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Part 360 Solid Waste Regulations
- 6 NYCRR Parts 370-373 Hazardous Waste Regulations
- New York State Environmental Conservation Law
- 40 CFR 112 Oil Pollution Prevention for Spill Prevention Control and Countermeasure (SPCC) Plan
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 5 BUILDING CLEANING AND MAINTENANCE

PURPOSE:

Comply with state and federal regulations regarding safe work practices for equipment which may be used in building cleaning and maintenance. Prevent or reduce the discharge of pollutants to soil, surface water (via storm sewer and the local Publicly Owned Treatment Works (POTW) and groundwater. Sources of pollutant discharges include equipment blowdown, waste handling and disposal, and other discharges. Prevent air emissions from building maintenance, cleaning and HVAC operations.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Pesticides

- Develop integrated pest management programs where appropriate.
- Minimize use of pesticides and fertilizers. Use pesticides and fertilizers according to directions. Seek less harmful/toxic pesticides and fertilizers to replace ones currently used.
- Use only certified pesticides applicators. All Port Authority Maintenance personnel using pesticides and fertilizers have successfully completed training and are certified by the NYSDEC.
- Have pesticide product information available at facility; make information available to tenants and employees.
- Maintain a schedule for pesticide application and a record of pesticide usage.
- When performing self-application,
  - make sure employees are certified pesticide applicators
  - have effective backflow prevention devices for application equipment
  - provide proper personnel protection equipment to persons handling, loading, mixing, and applying pesticides
  - store pesticides in their original containers with legible labels.
  - send annual report to NYSDEC detailing pesticide application.

Stationary Combustion Installations

- Perform annual boiler inspections and tune-ups.
- Operate boilers and other stationary combustion installations within their permissible limits and maintain a log of boiler operation and maintenance.
- If possible, do not allow discharges of boiler blowdown to the sanitary sewer and never discharge blowdown to the storm sewer system. Properly dispose blowdown with other oily wastewaters.
- Check that fuel composition meets NYSDEC requirements for sulfur.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Part 368 Recycling Emblems
- 6 NYCRR Parts 325 and 326 Pesticide Storage, Handling, and Disposal
- NYS Environmental Conservation Law, Article 33

TARGETED ACTIVITIES

- Maintenance of stationary combustion installations (boilers)
- Equipment blowdown
- Pesticide application
- Liquid waste storage
- Solid waste disposal
- Hazardous waste storage
- Painting/stripping
- Floor washdowns
- Transformer inspection
- Use of man lifts, platforms, etc.
- Hazardous Waste Storage

TARGETED POLLUTANTS

- Oils & greases
- Petroleum hydrocarbons
- Propylene glycol
- Halogenated solvents
- Non-halogenated solvents

KEY APPROACHES

- Perform maintenance indoors, if possible
- Cap floor drains in areas where maintenance occurs
- Consider off-site maintenance by contractors
- Initiate employee spill prevention and response training

BMP 5 BUILDING CLEANING AND MAINTENANCE

RELEVANT RULES AND REGULATIONS (Continued):

- 6 NYCRR Parts 370-374 New York State Hazardous Waste Management Regulations
- 6 NYCRR Part 360 New York State Solid Waste Disposal Regulations
- 6 NYCRR Part 376 New York State Land Disposal Restrictions
- 29 CFR 1910 Subpart N-Material Handling and Storage
- 29 CFR 1910.1200 OSHA Hazard Communication Standard
- 40 CFR 112 Oil Pollution Prevention for Spill Prevention and Control and Countermeasure (SPCC) Plans
- 40 CFR 122 National Pollutant Discharge Elimination System (NPDES) Regulation
- 40 CFR 260-262, 268, and 270-272 Hazardous Waste Management
- 40 CFR 302 Designation, Reportable Quantities and Notification Requirements for Hazardous Substances under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- 40 CFR 372 Toxic Chemical Release Reporting: Community Right to Know
- 40 CFR 761 Toxic Substances
- 40 171–173, 175 and 177 Department of Transportation Regulations
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharge
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 6 CHEMICAL AND PETROLEUM STORAGE AND HANDLING

PURPOSE:

Ensure compliance with state and federal regulations regarding registration, handling, and storage of chemicals. Prevent or reduce discharge of pollutants to storm sewer, Publicly Owned Treatment Works (POTW), or air by minimizing storage of materials on site, storing materials in designated areas, installing secondary containment and conducting regular inspections of storage areas. Storage of chemicals and petroleum products can pose the following risks: stormwater pollution, injury to workers or visitors, groundwater pollution, soil contamination, air pollution.

APPROACH TO STORAGE AT EXISTING FACILITIES:

Operational Considerations

Monitoring

- Perform inventory monitoring of all chemicals delivered to and stored on site; report inventories on annual basis, whenever required by state or local agencies.
- Maintain inventories in as small a quantity as practical.
- Perform weekly inspection of tanks and containers for leaks.
- Perform annual testing of all valves, hoses, and other miscellaneous equipment.
- Perform monthly inspection of release/leak detection system.
- Prepare monthly inspection report to address compliance related requirements.

Storage

- Designate areas for chemical storage of containers (may not be possible for tanks).
- Store all chemical and petroleum products in a covered area.
- Store containers within secondary containment, such as within berms or dikes.
- Keep all chemicals in original containers.
- Keep all containers closed when not in use to prevent spills and air emissions.
- Maintain legible labels on all containers and tanks. Label all fillports of petroleum tanks with symbols and colors that are consistent with the American Petroleum Institute Standards.
- Comply with fire codes for storage of ignitable, flammable, or reactive liquids.
- To the extent practical, minimize storage and handling.

Training

- Train employees in storage procedures.
- Train employees in spill prevention and clean-up procedures.

TARGETED ACTIVITIES

- Underground Storage
- Aboveground Storage
- Material Handling

TARGETED POLLUTANTS

- Oils & greases
- Petroleum hydrocarbons
- Lubricants
- Paints
- Battery Acid
- Solvents

KEY APPROACHES

- Perform routine inspections and maintenance
- Initiate employee spill prevention and response training

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 6 CHEMICAL AND PETROLEUM STORAGE AND HANDLING

Compliance

- Comply with all applicable state and federal regulations applying to tanks including requirements for:
  - registration of aboveground storage tanks (ASTs) and underground storage tanks (USTs)
  - inspection of storage tanks
  - preparation of Spill Prevention Report for facilities with chemical storage tanks
  - preparation of Spill Prevention Control and Countermeasure Plan for aboveground petroleum storage greater than 600 gallons in one container or 1320 gallons total, or for facilities with more than 40,000 gallons of underground storage
  - labeling
  - inventory monitoring and associated record keeping
  - UST tightness testing, AST inspections and associated record keeping
  - tank closure
  - Major On-Shore Storage Facilities (>400,000 gallons on-site petroleum storage) must maintain sufficient records to substantiate average daily throughput and quantity of monthly fuel transfers
  - pay monthly license fee
  - When taking tanks temporarily out-of-service, follow state and federal standards for temporary closure.
  - When placing tanks permanently out-of-service, follow state and federal standards for permanent closure; report change in service to NYSDEC.

APPROACH TO SPILLS AT EXISTING FACILITIES:

- Prevent spills from entering storms drains, floor drains, other receiving waters, and soil, through use of absorbent pigs, booms, or other means.
- Minimize immediate fire and safety hazards.
- Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police.
- Tenants and contractors shall complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill leak, and recommended remedial action.
- Communicate spill events to others by using the radio network or series of alarms where appropriate.
- Remove and dispose of contaminated soil/material.
- Remove and recover free product in surface or ground waters.
- Repair or replace leaking equipment.
- Perform other actions which regulatory agencies may require.

Contingency Response

- Develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan, if required under guidelines set forth in 40 CFR, Section 112.3(a), (b).
- Develop and implement a Spill Prevention Report (SPR), if required under the guidelines set forth in 6 NYCRR Parts 595-599.
- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spill may be likely to occur.

BMP 6 CHEMICAL AND PETROLEUM STORAGE AND HANDLING

APPROACH TO SPILLS AT EXISTING FACILITIES (cont.):

Inspection and Training

- Inspect containers frequently for leaks and proper closure seal.
- Develop employee training programs which emphasize the proper storage and handling procedures for chemical and petroleum products.
- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education, right-to-know awareness training, and hazardous materials management.

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- Existing underground chemical and petroleum storage tanks should be upgraded with leak detection, spill containment, and overfill protection before December 22, 1998, the federal regulatory deadline.
- Incorporate adequate chemical and petroleum storage facilities into future buildings.
- Design facilities which have sheltered (covered) material storage areas.
- Construct secondary containment in proposed aboveground chemical and petroleum storage areas.
- Do not construct floor drains in areas where chemicals will be stored.
- When determining the size the layout of the chemical storage room, consider fire codes for reactive, flammable, and ignitable materials.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Parts 595-599 Chemical Bulk Storage Regulations
- 6 NYCRR Parts 610, 612-614 Petroleum Bulk Storage Regulations
- 6 NYCRR Parts 608, 611 Oil Spill Prevention and Compensation Act
- New York State Environmental Conservation Law Articles 37 & 40
- New York State Uniform Fire Prevention and Building Code
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 401 Effluent Limitation Guidelines
- 40 CFR 302 Designation, Reportable Quantities and Notification Requirements for Hazardous Substances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
- 40 CFR 280-281 Underground Storage Tanks
- 40 CFR 372 Chemical Release Reporting: Community Right-to-Know
- 29 CFR 1910.1200 OSHA Hazard Communication Standard
- 49 CFR 171-173, 175 and 177 Department of Transportation Regulations

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 7 — ELIMINATION OF NON-STORM WATER DISCHARGES TO STORM DRAINS

PURPOSE:

Existing discharges: Eliminate non-stormwater discharges to the stormwater collection system. Non-stormwater discharges can be classified as follows: washwater, deicing fluids, and spillage, process wastewater, treated cooling water, and sanitary wastewater (through a pipe).

Prevention of illicit connections: Physical connections to the storm drain system from sanitary sewers, floor drains, industrial process discharge lines, and wash racks that are not expressly permitted by local, New York State and Federal governing agencies.

APPROACH TO EXISTING FACILITY ACTIVITIES:

General

The following techniques may be used to identify activity-based non-stormwater discharges to the stormwater collection system:

- Perform frequent activity inspections to identify non-stormwater discharges - stagger inspection times to cover all work periods.
- Perform visual inspections of discharge points to the storm drain system - observe uncharacteristic volumes, colors, turbidity, odors, deposition, staining, floatables, and foaming characteristics of any flow.

Operational Considerations

- Use dry cleaning and surface preparation techniques where feasible.
- Limit the availability of outdoor water supplies (hose bibs).
- Post signs at outdoor water sources stating the appropriate uses and discouraging uses which would introduce pollutants to the storm drain system/receiving waters.
- Mark storm drains for easy identification and prevention of illicit discharges

Required Plan and/or Permits

- Owners and operators of facilities that store, process, or refine oil or oil products may be required by federal law (40 CFR 112) to develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan. In addition, owners or operators of a hazardous bulk storage facility (defined by NYSDEC Chemical Bulk Storage Regulations) are required to prepare and maintain a Spill Prevention Report (SPR). See BMP-8, "Spills Management," for additional information.

TARGETED ACTIVITIES

- All maintenance
- All fueling
- All washing
- Equipment blowdown
- Cargo handling
- All storage
- Painting/stripping
- Aircraft deicing/anti-icing
- Aircraft lavatory service
- Fire fighting equipment testing
- Potable water system flush
- Equipment leaks
- Runway rubber removal

TARGETED POLLUTANTS

- Oil and grease
- Vehicle fluids
- Fuel
- Solvents/cleaning solution
- Deicing/anti-icing fluid
- Battery acid
- Pesticides/herbicides/
- Fertilizers
- Paint
- Aircraft fire fighting foam
- Metals
- Dumpster wastes
- Landscape waste
- Lavatory chemical wastes
- Potable water system chemicals

KEY APPROACHES

- Perform inspections and enforcement
- Provide training for employees
- Promote education of vendor/public

BMP 7 — ELIMINATION OF NON-STORM WATER DISCHARGES TO STORM DRAINS

***Required Plan and/or Permits (*Continued)**

Discharges of stormwater and groundwater associated with construction activities (if one acre or more is impacted by construction) to waters of the state require coverage under a State Pollutant Discharge Elimination System (SPDES) Permit from the NYSDEC. The Port Authority holds an individual industrial SPDES permit for JFK International Airport and its outfalls NY 000 8109.

Tenant Construction - Stormwater Construction Requirements

Tenants who engage in construction activities involving soil disturbances of one (1) or more acres, except when the construction activity is in a combined sewer drainage area, must follow the SPDES Permit "Special Conditions - Best Management Practices", Item 4, Part B, "Stormwater Pollution Prevention Plans (SWPPPs) Required for Discharges of Stormwater From Construction Activity to Surface Waters", which requires that a Notice of Intent (NOI) and SWPPP be prepared and submitted to the NYSDEC. The tenant performing the disturbance will submit the NOI and SWPPP to the Port Authority for review and approval as part of the Tenant Alteration Agreement (TAA) process prior to submittal to the NYSDEC by the Port Authority. After submittal, a pre-construction meeting will be held with the NYSDEC, Port Authority, tenant and contractor.

The tenant will be responsible for ensuring the provisions of the SWPPP are properly implemented. Submission of the NOI is required for informational purposes; projects at the airport are not eligible for and will not obtain coverage under any general permit for stormwater discharges.

Port Authority Construction - Stormwater Construction Requirements

Port Authority construction activities involving soil disturbances of one (1) or more acres, except when the construction activity is in a combined sewer drainage area, must follow the SPDES Permit "Special Conditions - Best Management Practices", Item 4, Part B, "Stormwater Pollution Prevention Plans (SWPPPs) Required for Discharges of Stormwater From Construction Activity to Surface Waters", which requires that a Notice of Intent (NOI) and SWPPP be prepared and submitted to the NYSDEC.

The Port Authority will be responsible for ensuring the provisions of the SWPPP are properly implemented. Submission of the NOI is required for informational purposes; projects at the airport are not eligible for and will not obtain coverage under any general permit for stormwater discharges.

Contingency Response

- Follow spill notification and reporting procedures as described in BMP-8, “Spills Management.” Follow contingency plans for spill containment as described in facility’s SPCC or SPR, if applicable.
- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spill may be likely to occur.

Inspection and Training

- Inspect waste containers frequently for leaks and proper closure seals. Keep dumpsters covered and plug any holes to prevent leaks from waste materials or run-through of liquid wastes and/or rainwater.
- Develop employee training programs which emphasize the proper storage and disposal procedures for operations-derived wastes, particularly waste waters. (See BMP 13, “Waste Management”)
- Provide the appropriate level of employee training in the following areas: spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management.

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- Provide marking on storm drains for easy identification and prevention of illicit discharges.
- Perform inspections during the design review and project construction phases to ensure drainage, wastewater, and water supply connections are correct (no cross connections or illicit hookups).
- Develop a set of as-built drawings for all projects. Keep a set of the drawings at the facility.
- Design projects to include adequate waste repositories at locations near waste origin points.
- Provide adequate and appropriately designed facilities for functions such as painting, mechanical maintenance, chemical/fuel storage and delivery, material handling, waste handling and storage, lavatory service, and food preparation.

APPROACH TO SPILLS AT EXISTING FACILITIES:

- Prevent spills from entering storm drains, floor drains, other receiving waters, and soil, through use of absorbent pigs, booms, or other means.
- Minimize immediate fire and safety hazards.
- Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police.
- Tenants and contractors shall complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill leak, and recommended remedial action.
- Communicate spill events to others by using the radio network or series of alarms where appropriate.
- Remove and dispose contaminated soil/material.
- Remove and recover free product in surface or ground waters.
- Repair or replace leaking equipment.
- Perform other actions which regulatory agencies may require.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Parts 612-614 Petroleum Bulk Storage Regulations
- 6 NYCRR Parts 595-599 Chemical Bulk Storage Regulations
- New York State Environmental Conservation Law, Title 8, Article 17
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 8 SPILLS MANAGEMENT

PURPOSE:

Prevent or reduce the discharge of pollutants to soil, groundwater, stormwater, surface water or air resulting from spills. Develop spill prevention plans to contain accidental and continuous releases of petroleum products or hazardous substances. Identify proper reporting procedures to implement in the event of a spill.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Post a summary of the plan at appropriate site locations, identifying the spill cleanup coordinators, location of cleanup equipment, and phone numbers of regulatory agencies to be contacted in the event of a spill.
- Maintain an inventory of appropriate cleanup materials on-site and strategically deploy cleanup materials based on the type and quantities of chemicals present.
- Make absorbents readily available in fueling areas.
- A spill clean-up contractor should be under contract with the tenant and available immediately during emergency situations.

Required Plans

Owners and operators of facilities that store, process, or refine oil or oil products may be required by federal law (40 CFR 112) to develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan. In addition, owners or operators of a hazardous bulk storage facility (defined by NYSDEC Chemical Bulk Storage Regulations) are required to prepare and maintain a Spill Prevention Report (SPR). SPCC and SPR plans should include the following information:

A description of the facility including the owner's name and address, the nature of the facility activity, and the general types and quantities of chemicals stored at the facility.

- A site plan showing the location of storage areas for chemicals, the location of storm drains, site drainage patterns, fire water source locations, and the location and description of any devices used to contain spills such as positive shut-off control valves.
- Notification procedures to be implemented in the event of a spill, such as key company personnel and local, state, and federal agencies.
- Instructions regarding cleanup procedures.
- Designated personnel with overall spill response cleanup responsibility.

Spill prevention plans should be periodically updated as physical changes are made to the facility (e.g. layout, number of tanks, types of processes).

TARGETED ACTIVITIES

- Aircraft/vehicle/ equipment maintenance
- Aircraft/vehicle/ equipment fueling
- Aircraft/vehicle/ equipment washing
- Cargo handling
- Fuel/chemical handling & storage
- Equipment degreasing

TARGETED POLLUTANTS

- Fuel
- Vehicle fluids/oils
- Solvents/cleaning solutions
- Pesticides/herbicides/fertilizers
- Battery acid
- Ethylene and propylene glycol

KEY APPROACHES

- Develop/implement SPCC, if required
- SPCC implementation training
- Immediate containment/ cleanup of spills
- Availability of spill response equipment/ materials
- Required agency notification

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 8 SPILLS MANAGEMENT

Notification Requirements

- Notify all applicable local, state and federal agencies in the event of a spill, including the following:
  - Local Fire Department : *911*
  - NYSDEC Spills Hotline ***:*** *1-800-457-7362*
  - National Response Center - if spill exceeds the reportable quantity (RQ): 1-800-424-8802
  - NYCDEP Spill Hotline: *1-718-595-4646*
  - US Coast Guard - if spill is near or has potential to enter navigable waters of the US including surface waters and adjoining shorelines: *1-718-354-4109*
  - PA Central Police Desk: *1-718-533-3900*
  - PA Operations: *1-718-533-3700*
  - PA Environmental: *1-718-533-3531*

  Note: reporting to the PA does not preclude the requirement to contact other agencies.
- Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police.
- Tenants and contractors shall complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill leak, and recommended remedial action.

Contingency Response

- Implement spill containment and cleanup procedures immediately, as described in SPCC Plan and/or SPR.
- Maintain contract with spill clean-up contractor for immediate mobilization during emergency situations.
- Contact clean-up contractors as identified in spill prevention plans.
- Perform follow-up reporting procedures as required by regulatory agencies or as identified in the facility's SPCC Plan and/or SPR.
- For continuous releases (e.g., ethylene glycol), provide required telephone and written notifications to appropriate state and local agencies.
- Properly dispose any materials that have been contaminated as a result of a spill.

Inspection and Training

- Provide appropriate training for key personnel, with additional training for first responder level personnel (29 CFR 1910.120). All employees should have basic knowledge of spill control procedures.

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- Design bulk storage facilities which utilize effective spill prevention and containment technology.
- Locate bulk storage facilities in areas which minimize potential discharge to soil, groundwater, surface water, storm water or sanitary systems.

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 8	SPILLS MANAGEMENT

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plan)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- Article 12, New York State Navigation Law
- 6 NYCRR Parts 612-614 Petroleum Bulk Storage Regulations
- 6 NYCRR Parts 595-599 Chemical Bulk Storage Regulations
- 6 NYCRR Parts 608, 611 Oil Spill Prevention and Compensation Act
- 40 CFR 372 Toxic Chemical Release Reporting: Community Rights to Know
- 40 CFR 302 Resignation, Reportable Quantities and Notification Requirements for Hazardous Substance
- Under CERCLA

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 9 LAVATORY SERVICE OPERATIONS

PURPOSE:

Eliminate discharges to the storm drain system associated with ground servicing of aircraft lavatory facilities. The sanitary sewage and associated rinse waters produced during the servicing of aircraft lavatory facilities must be discharged to a wastewater treatment facility under appropriate permitting. Trucks or trailers equipped with bulk storage tanks are typically used to service lavatory facilities. Non-stormwater discharges and residuals associated with servicing these facilities can be classified as follows:

- Discharges and residuals associated with diluting and mixing the surfactants and disinfectants used for servicing lavatory facilities.
- Discharges and residuals associated with transferring materials from the aircraft.
- Discharges and residuals associated with transporting and disposing materials to the sanitary sewer system.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Do not discharge lavatory waste to sanitary sewer connections other than triturator facilities. Other industrial-type connections may be equipped with bypass gates which, if improperly maintained or defective may discharge to the stormwater collection system.
- Drain the aircraft connecting hose as completely as possible into the storage tank after servicing an aircraft.
- Properly secure all hoses, valves, and equipment when transporting waste to eliminate leakage and spills.
- Use only surfactants and disinfectants approved for discharge to the sanitary sewer system. Do not discharge or rinse other unapproved chemicals or materials into the triturator facility.
- If possible, perform surfactant/disinfectant mixing and transfers in the triturator area or under cover. This will allow the rinsing of minor spills and splashes to enter the sanitary sewer system.
- Do not perform lavatory truck cleanout/back flushing at any location other than triturator facilities.
- Utilize buckets or pans to capture drippage from aircraft lavatory access fittings. Immediately dump the drippage into the bulk storage tank on the service cart or truck.
- Carefully handle chemicals and chemical concentrates. Immediately collect dry chemicals or absorb liquid chemicals for proper disposal. Do not hose down spills unless the discharge enters the sanitary sewer system through a permitted connection (triturator facility).
- Practice good housekeeping techniques at the triturator facility. Immediately clean spills.
- Personnel are instructed to position a "Waste Catch Bucket" under the lavatory service panel.

TARGETED ACTIVITIES

- Aircraft Lavatory Service
- Lavatory Truck Cleanout

TARGETED POLLUTANTS

- Lavatory Chemicals
- Lavatory Waste
- Lavatory Truck Wash Water

KEY APPROACHES

- Do not discharge lavatory waste to sanitary sewer connections other than triturator facilities
- Utilize buckets or pans to capture drippage from aircraft lavatory access fittings
- Do not perform lavatory truck cleanout at any location other than triturator facilities
- Carry absorbent and other containment equipment on the lavatory service equipment

BMP 9 LAVATORY SERVICE OPERATIONS

Contingency Response

- Carry absorbent and other containment equipment on the lavatory service equipment.
- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.

Inspection and Training

- Perform regular inspections of the hose and fittings used for transferring lavatory waste. Keep the equipment in good working order. Replace worn equipment before leaks develop. Notify appropriate ground service personnel if it is noticed that the aircraft lavatory fittings require maintenance.
- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education, right-to-know awareness training, and hazardous materials management.

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- If possible, design triturator facilities to be covered, with low roll-over type berming.
- Include a source of water at the triturator for clean up of lavatory service equipment.
- Coordinate permitting of the triturator sanitary sewer connection through the local storm water and sanitary sewering agencies.
- Triturator facilities should not be located near storm drains.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies,
- procedures and tenant agreements
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 10 — OIL/WATER SEPARATORS

PURPOSE:

Oil/water separators are baffled chambers designed to remove petroleum compounds and greases from storm water. Oil/water separators also remove floatable debris and settled solids (sediment).

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Separators must be inspected and cleaned frequently of accumulated oil, grease, floating debris and sediments to be effective storm water quality controls.
- Oil absorbent pads are to be replaced as needed but should always be replaced prior to the wet season.
- The effluent shutoff valve should be closed during cleaning operations.
- Any standing water removed during the cleaning operation must be disposed of in accordance with federal, state, and local requirements.
- Any standing water removed during the cleaning operation must be replaced with clean water to prevent oil carry-over through the outlet.

Contingency Response

- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.

Inspection and Training

- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Perform and document in a log book all inspections and maintenance operations.
- Develop a written operating, sampling, and reporting procedure under local storm water authority guidelines.
- Train appropriate employees to implement these procedures.

TARGETED ACTIVITIES

- Aircraft/vehicle/
- equipment maintenance
- Aircraft/vehicle/
- equipment fueling
- Aircraft/vehicle/
- equipment washing
- Equipment maintenance/ Degreasing
- Fuel/chemical storage
- Cargo handling

TARGETED POLLUTANTS

- Oil and grease
- Fuel
- Floatables
- Sediment

KEY APPROACHES

- Frequently inspect and clean separators
- Replace absorbent pads as needed

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 10 — OIL/WATER SEPARATORS

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades:

Oil/water separators are typically used in areas where the concentrations of petroleum hydrocarbons, floatables, or sediment may be abnormally high and source control techniques are not very effective. There are two types of oil/water separators: the American Petroleum Institute (API) separator and the coalescing plate separator (CPS). Design, sizing, and placement of oil/water separators is dependent on several factors including: tributary area, type of activity, pollutant type and concentration, and water temperature. General sizing guidelines for API separators include the following:

- Horizontal velocity: 3 feet per minute.
- Depth of 3 to 8 feet.
- Depth-to-width ratio of 0.3 to 0.5.
- Width of 6 to 16 feet.
- Baffle height-to-depth ratios of 0.85 for top baffles and 0.15 for bottom baffles.

CPS separator sizing is more complex. Sizing calculations require the inclusion of information such as packing plate surface areas and plate angles. CPS separators can, due to their packed plate design, remove the same quantities of oils and greases while occupying less space than API separators.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Parts 608, 611 Oil Spill Prevention on Compensation Act
- 6 NYCRR Part 360-14 Waste Oil Regulations
- 6 NYCRR Parts 612-614 Petroleum Bulk Storage Regulations
- 40 CFR 40 Effluent Limitation Guidelines
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 11 — OUTDOOR HANDLING OF MATERIAL

PURPOSE:

Prevent or reduce the discharge of pollutants to soil, groundwater, surface water or stormwater from loading and unloading of material and cargo.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Good Housekeeping

- Use seals or door skirts between vehicles and structures to prevent material exposure to rainfall.
- Contain and adsorb leaks during transfers and spillage from hose disconnections; dispose of residue properly.
- Avoid transferring materials in close proximity to storm drain inlets.
- Use drip pans under hoses.
- Transfer liquids only in paved areas. Portland cement paving should be used if the liquid is asphalt reactive.
- Provide contractors and haulers with copies of pertinent GEPs. Require contractor/hauler adherence to GEP specifications.
- Consider contracting maintenance operations for material handling equipment. Designate an appropriate area for contractors to perform maintenance activities. Verify proper waste disposal practices of contractors.

Physical Site Usage

- Protect all loading/unloading activities from rainfall, run-on and wind dispersal to the maximum extent practical. Viable options include conducting loading/unloading under existing cover, or moving indoors.
- Position tank trucks or delivery vehicles so that possible spills or leaks can be contained.

Structural Controls

- Cover loading/unloading areas/docks to reduce exposure of materials to rain. Construct roofing structure over material handling area, or move indoors.

Maintenance

- Conduct berm repair and patching.
- Inspect, clean and maintain oil/water separators.

Contingency Response

- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.
- Include spill kits on appropriate material handling vehicles and equipment.

TARGETED ACTIVITIES

- Cargo handling
- Fuel storage
- Chemical storage
- Equipment storage

TARGETED POLLUTANTS

- Fuel
- Pesticides/ herbicides/ fertilizers
- Oil and grease
- Solvents/cleaning solutions
- Battery acid

KEY APPROACHES

- Conduct loading/ unloading under cover
- Transfer materials in paved areas, away from storm drain inlets
- Contain and absorb leaks/spills that occur during material transfer

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 11	OUTDOOR HANDLING OF MATERIAL

Inspection and Training

- Conduct regular inspections and make repairs as necessary. Document inspections.
- Check loading/unloading equipment (valves, pumps, flanges, and connections) regularly for leaks. Document inspections.
- Develop and implement a written operations plan which describes loading/unloading procedures.
- Provide proper training for material handling equipment operators. Include periodic refresher training.
- Provide the appropriate level of employee training in the following areas: spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, and hazardous materials management. Include periodic refresher training.

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- Design loading/unloading areas to prevent stormwater run-on through the use of the following practices:
  - Grading or berming.
  - Positioning roof downspout to direct stormwater away from loading/ unloading areas.
- Design facilities so that materials which may contribute pollutants to stormwater may be stored indoors or under cover.
- Incorporate oil/water separators into exposed loading dock designs.

APPROACH TO SPILLS AT EXISTING FACILITIES:

- Prevent spills from entering storm drains, floor drains, other receiving waters, and soil, through use of absorbent pigs, booms, or other means.
- Minimize immediate fire and safety hazards. If appropriate, sound alarms.
- Tenants and contractors shall report any discharge of petroleum greater than 5 gallons to NYSDEC within 2 hours of discovery, and notify NYSDEC and/or the National Response Center for releases of a reportable quantity of a hazardous substance. Tenants and contractors are required to notify PANYNJ Police of any spill events; spills should be reported to the Manager, Environmental Services and PANYNJ Police.
- Tenants and contractors shall complete a PANYNJ Spill Report Form and submit to the PANYNJ within one business day identifying the event date/time, location, type of spill, response, gallons spilled, cause/reason for spill leak, and recommended remedial action.
- Remove and dispose contaminated soil/ material.
- Communicate spill events to others by using the radio network or series of alarms where appropriate.
- Remove and recover free product in surface or ground waters.
- Repair or replace leaking equipment.
- Perform other actions which regulatory agencies may require.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Parts 6085611 Oil Spill Prevention and Compensation Act
- 6 NYCRR Parts 612-614 Petroleum Bulk Storage Regulations

- 6 NYCRR Parts 595-599 Chemical Bulk Storage Regulations
- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges

BMP 12 OUTDOOR MATERIAL AND EQUIPMENT STORAGE

PURPOSE:

Prevent or reduce the discharge of pollutants to soil, groundwater, surface water, or stormwater from outdoor storage areas for significant material (e.g., fuels, chemicals, bagged material on pallets, soils or asphalt material bulk storage, deicing compounds, and equipment etc.).

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

Good Housekeeping

- Avoid dispensing from drums positioned horizontally in cradles. Dispense materials from upright drums equipped with hand pumps if possible. Always use drip pans and self-closing spigots, if dispensing from horizontally positioned drums.
- Store drums and containers on pallets or other structures to keep the container out of contact with stormwater.
- Use drum lids to prevent rainfall from washing materials and drippage from the top of containers to the storm drain system.
- Discharge collected storm water from secondary containment areas according to guidelines developed by the federal government and applicable state and local regulations.
- Store all materials in their original containers or containers approved for that use.
- Ensure that all containers are appropriately sealed. Store empty containers indoors or under cover or move them off-site.
- Properly label all chemical containers with information, including their contents, hazards, spill response and First-aid procedures, manufacturer's name and address, and storage requirements. See local and New York State requirements for labeling. Maintain copies of MSDS on file for any materials stored and/or handled by the applicator.

Physical Site Usage

- Protect all significant materials from rainfall, run-on, runoff and wind dispersal to the maximum extent practical. Viable options are:
  - Store material indoors.
  - Cover the storage area with a roof.
  - Cover the material with a temporary covering made of polyethylene, polypropylene, or hypalon.
- Minimize stormwater run-on by enclosing the area, building a berm around the area, store indoors, or completely cover.

TARGETED ACTIVITIES

- Aircraft/vehicle/ equipment maintenance
- Aircraft/vehicle fueling
- Fuel/chemical/ equipment storage
- Cargo handling
- Soil stockpiling

TARGETED POLLUTANTS

- Fuel
- Solvents/cleaning solutions
- Deicing/anti-icing fluids

KEY APPROACHES

- Store materials indoors or under cover
- Store drums/ containers on pallets
- Provide berming or secondary containment
- Develop/implement an SPCC, if required
- Perform and document periodic inspections

Physical Site Usage (Continued)

- Reduce the quantities of significant materials stored outside (i.e., chemicals) to the minimum volume required based on variables such as release potential, usage, and shelf life.
- Make use of existing overhangs to the extent practicable.

Structural Controls

- Provide berming or secondarily contain storage tankers, ASTs, drums and containers.
- Install, maintain, and replace catch basin filter inserts consistent with manufacturers specifications.

Maintenance

- Inspect, clean and maintain sumps, on a regular basis.
- Periodically inspect all equipment stored outdoors, including trash compactors, vehicles, etc. If leaks are noted, repair immediately. If repairs are not possible, confine and contain the leak, ensuring that it does not enter any storm drains until clean up or reports can be completed.

Contingency Response

- Develop and implement a Spill Prevention Control and Countermeasures (SPCC) Plan, if required under guidelines set forth in 40 CFR, Section 112.3(a), and (b), submit to NYSDEC for approach.
- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.
- Post appropriate signs at all chemical storage locations in clearly visible locations noting the materials stored, emergency contacts, and spill cleanup procedures.

Inspection and Training

- Perform and document periodic inspections in a logbook. Inspection items should include the following:
  - External corrosion and structural failure.
  - Spills and overfills due to operator failure.
  - Failure of piping system (pipes, pumps, flanges, couplings, hoses, and valves).
  - Leaks or spills during pumping of liquids or gases.
  - Loose fittings, poor welds, and improper or poorly fitted gaskets.
  - Tank foundations and storage area coatings.
- Provide the appropriate level of employee training in spill response and prevention, stormwater pollution prevention, right-to-know awareness, and hazardous material management.

RELEVANT RULES AND REGULATIONS

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 40 CFR 110.3 Discharge of Oil

RELEVANT RULES AND REGULATIONS (Continued)

- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance

Port Authority of New York and New Jersey John F. Kennedy International Airport	
BMP 12	**OUTDOOR MATERIAL AND EQUIPMENT STORAGE**

- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 401 Effluent Limitation Guidelines
- 6 NYCRR Parts 595-599 Chemical Bulk Storage Regulations
- 6 NYCRR Parts 612-614 Petroleum Bulk Storage Regulations
- 6 NYCRR Part 360 Solid Waste Disposal Regulations
- 6 NYCRR Parts 370-374 New York State Hazardous Waste Management Regulations

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 13 — WASTE MANAGEMENT

PURPOSE:

Minimize waste production and increase awareness in waste management options. Prevent or reduce discharge of pollutants to soil, groundwater, surface water and stormwater. Comply with state and federal regulations pertaining to the generation and disposal of solid and hazardous waste.

APPROACH TO EXISTING FACILITY ACTIVITIES:

General

In general, the following is an appropriate hierarchy for waste generation and disposal:

REDUCE•REUSE•RECYCLE•DISPOSE

Reduce: Evaluate areas where operations can be altered to minimize the production of waste. Examples: a) Amount of wastewater generated during vehicle washing can be minimized by installation of a washwater recovery and recycling system; b) At times, the amount of packaging can be minimized.
Reuse: Some materials can be reused several times before disposal. Examples: a) Packing material can often be reused; b) Installation of a solvent recovery system will allow solvent to be used several times before being spent.
Recycle: Identify operations that generate cardboard, wood pallets, used oil, metals, plastic and glass. If possible, source separate and send to appropriate recycling facility.
Dispose: This is the last option for material that no longer appears to have any reuse capabilities and is a material that cannot be recycled. This material (e.g. food waste, aircraft cabin waste) should be sent to a licensed disposal facility.

In order to apply the waste management hierarchy, identify all waste streams, including aircraft waste and note the most common method of disposition of each waste type. Consider developing a waste minimization plan for the facility based on the waste management hierarchy. The plan should define strategies for waste minimization based on the analysis of facility waste streams. The plan should be made available to all employees.

Operational Considerations

Tracking

- Characterize waste streams, and evaluate the process generating the waste. Do not mix wastes that have not been characterized as hazardous or non-hazardous.
- Determine whether waste is considered to be hazardous or non-hazardous. This determination can be made by acknowledgment of the process generating the waste and the type of waste material (ignitable, reactive, corrosive, RCRA listed waste, etc.) or by chemical analysis.
- Avoid mixing hazardous and non-hazardous wastes to minimize the quantity that must be disposed in accordance with hazardous waste regulations.

TARGETED ACTIVITIES

- Aircraft cabin cleaning
- Maintenance activities
- Building Cleaning
- Solid waste storage
- Liquid waste storage
- Hazardous waste storage
- Solid waste disposal
- Hazardous waste disposal
- Used oil disposal
- Transformer inspection
- Oil and grease
- Vehicle fluids
- Recyclables
- Solvents/cleaning solutions
- Hazardous wastes
- Aircraft lavatory wastes
- Used paints
- Metals
- Dumpster wastes
- Sediment
- Landscape waste

KEY APPROACHES

- Streamline operations to minimize waste generation
- Provide sheltered waste storage
- Recycle
- Use only licensed firms for waste carting and disposal
- Maintain records of waste generation and disposal
- Obtain appropriate registrations (state and federal) for hazardous waste generation
- Provide employee training in waste handling, storage and disposal

BMP 13 WASTE MANAGEMENT

Operational Considerations (Continued)

Tracking (Continued)

- Track waste generated. Maintain list of and amount of material disposed.
  - If more than 100 kilograms of hazardous waste (or 1 kilogram of acutely hazardous waste) are generated or disposed in one month, the facility must register with EPA as a hazardous waste generator and must follow all hazardous waste management procedures required by NYSDEC for either Small Quantity Generators (SOGs) or Large Quantity Generators (LQGs).
  - Prioritize the waste streams using: manifests, bills of lading, biennial reports, permits, environmental audits, SARA Title III reports, emission reports, Material Safety Data Sheets (MSDS), NPDES discharge monitoring reports.
  - Prepare inventory reports.
  - Record data on chemical spills.
  - Characterize emissions.
  - Include shelf life expiration on inventories.
  - Maintain documentation of hazardous waste disposal manifests, exception reports, and land ban certificates for a minimum of three years.

Storage

- Segregate incompatible wastes. Identify and mark proper storage areas for each type of waste stream (e.g. used oil, general trash, spent solvent, etc.)
- Use only dumpsters with plugged drain holes to prevent leaks from waste materials or run-through of liquid wastes and/or rainwater.
- Cover dumpsters and keep them closed and locked to reception of unsolicited waste and to minimize accumulation of wastewater.
- Locate waste storage areas (including drums, debris piles, etc.) beneath cover, if possible, or enclose or berm the waste storage area to prevent run-on or runoff contact with surface water.
- Perform regular housekeeping activities in waste storage areas and surroundings.
- Avoid waste handling and storage in areas of storm drain inlets/catch basins.
- Label hazardous waste containers with the date accumulation began and the type of waste stored in the container.
- Label all used oil containers with the words “used oil.”
- Store containers of used oil and liquid hazardous waste in secondary containment.

Disposal

- Maintain a list of disposal contractor names and phone numbers.
- Source separate recyclables and recycle materials whenever possible. If the facility’s waste hauler source separates for the facility, the facility should request written confirmation that this occurs.
- Verify proper waste disposal practices (including recycling) of contractors.
- Schedule waste pickup as frequently as necessary to keep storage of waste to a minimum and to avoid overloaded/overfilled disposal containers.
- For hazardous waste, use only licensed haulers and disposal facilities.
- A manifest must accompany hazardous waste shipments by LQGs and SQGs.
- Label hazardous waste containers being shipped off-site with shipper’s name, manifest number and emergency phone number.
- Properly dispose of landscape waste, washwater, sweepings, and sediments. Speak to your solid waste disposal company for wastes they will and won’t accept as well as waste segregation requirements.
- Properly dispose of PCB waste as a hazardous waste**.**

BMP 13 WASTE MANAGEMENT

Wastewater Discharges

- Clean any catch basins that receive stormwater runoff from maintenance areas on a regular basis. Use a vacuum truck to remove accumulated materials. Do not flush any wastes into receiving waters. See BMP-8.
- Prevent leaks from dumpsters and compactors from entering storm drains.
- For equipment that does not blowdown continuously, collect blowdown in a container and properly dispose with other oily waste waters; do not dispose into storm drain or floor drains.
- Avoid discharges of wastewater into floor drains, by sealing floor drains in areas were industrial wastewater is likely to be discharged.
- Ensure that equipment that blows down continuously is not discharging to the storm sewer; if equipment discharges to sanitary sewer, check with POTW for permissible discharge limits.
- Clearly mark storm drains for easy identification and prevention of illicit discharges.

Miscellaneous

- Maintain a minimal inventory of required chemicals to reduce the magnitude of potential spills and limit waste generation.
- Find substitutes for harmful chemicals - properly dispose of unusable chemical inventory.
- Encourage employees to recommend areas where operations can be altered to minimize waste generation.

Contingency Response

- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.
- Equip waste transport vehicles with spill containment equipment.
- Collect outdoor washdown water and properly dispose of it through a permitted connection to an approved treatment facility. Approval from treatment facility required for discharge.
- Report all spills to the appropriate regulatory agencies.

Inspection and Training

- Provide the appropriate level of employee training in the following areas; spill response and prevention, stormwater pollution prevention education, right-to-know awareness training, waste minimization techniques, and hazardous materials management. Include periodic refresher training.
- Perform and document in a log book periodic inspections of hazardous and non-hazardous waste storage areas. Inspection items should include the following:
  - –Check for external corrosion and structural failure.
  - –Check for spills and overfills due to operator failure.
  - –Check for failure of piping system (pipes, pumps, flanges, couplings, hoses, and valves).

APPROACH TO FUTURE FACILITY DESIGNS AND UPGRADES:

- Perform inspections during the design review and project construction phases to ensure drainage, wastewater, and water supply connections are correct (no cross connections or illicit hookups).
- Develop a set of as-built drawings for all projects. Keep a set of the drawings at the facility.
- Design projects to include adequate waste storage areas at locations near waste generation points.
- Provide adequate and appropriately designed facilities for functions such as steam cleaning, degreasing, painting, mechanical maintenance, chemical/fuel storage and delivery, material handling, waste handling and storage, lavatory service, and food preparation.

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 13	WASTE MANAGEMENT

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Part 368 Recycling Emblems
- 6 NYCRR Parts 325 and 326 Pesticide Storage, Handling, and Disposal
- NYS Environmental Conservation Law, Article 33
- 6 NYCRR Parts 370-374 New York State Hazardous Waste Management Regulations
- 6 NYCRR Part 360 New York State Solid Waste Disposal Regulations
- 6 NYCRR Part 376 New York State Land Disposal Restrictions
- 29 CFR 1910 (Subparts G, H, I, J and K) Hazardous Materials, Environmental Controls, and Personnel Protection
- 29 CFR 1910 Subpart N- Material handling and Storage
- 29 CFR 1910.1200 OSHA Hazard Communication Standard
- 40 CFR 112 Oil Pollution Prevention for Spill Prevention and Control and Countermeasure (SPCC) Plans
- 40 CFR 122 National Pollutant Discharge Elimination System (NPDES) Regulation
- 40 CFR 260-262, 268, and 270-272 Hazardous Waste Management
- 40 CFR 302 Designation, Reportable Quantities and Notification Requirements for Hazardous Substances under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- 40 CFR 372 Toxic Chemical Release Reporting: Community Right to Know
- 40 CFR 761 Toxic Substances
- 40 CFR 171-173, 175 and 177 Department of Transportation Regulations
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 401 Effluent Limitation Guidelines

BMP 14 — FIRE FIGHTING FOAM DISCHARGE

PURPOSE:

Eliminate discharges to the storm drain system associated with flushing or testing of fire fighting foam systems.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- Fire fighting foam testing operations include run-up of equipment and brief discharge of fire fighting suppressant.
- Perform fire fighting foam testing operations only in areas designated by the Port Authority as appropriate for such activities.
- Properly dispose of, or recycle, foam discharge. Discharge is collected, drummed and transported to an approved and permitted facility.
- Clean and maintain collection vault, as necessary

Contingency Response

- Maintain adequate supplies of spill response equipment and materials in accessible locations near area of activity

Inspection and Training

- Inspect testing facility weekly or monthly, depending on frequency of use.
- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see BMP-15 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.

LIMITATIONS:

- Some wastewater agencies may require pretreatment and monitoring of this type of discharge to the sanitary sewer.

TARGETED ACTIVITIES

- Fire Fighting Equipment Testing

TARGETED POLLUTANTS

- Volatile organic compounds

KEY APPROACHES

- Perform testing operations in designated areas
- Properly dispose or recycle, foam discharge
- Service sump regularly

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 14	FIRE FIGHTING FOAM DISCHARGE

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Design testing facility with the following characteristics:
  -Located away from storm drain inlets, drainage facilities or water bodies.
  -Paved with concrete or asphalt, or stabilized with an aggregate base.
  -Bermed to contain foam and to prevent run-on.
  -Configure discharge area with a sump to allow collection and disposal of foam.

- Discharge foam waste to a sanitary sewer. Foam waste shall not be discharged to storm drains or water bodies.

RELEVANT RULES AND REGULATIONS:

- 40 CFR 122-124 NPDES Regulations for Storm water Discharges
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 15 — STORM WATER POLLUTION PREVENTION EDUCATION

PURPOSE:

Prevent or reduce the discharge of pollutants to storm water from activities through implementing an education program targeting employees, vendors, and the public.

APPROACH TO FUTURE FACILITIES AND UPGRADES:

Design of New Facilities and Existing Facility Upgrades

- Work early on with design and construction engineers and local storm water authorities to incorporate proactive storm water management features into projects such as decreased impervious areas, infiltration BMPs, biofilters, oil/water separators, etc.
- Inform all construction contractors of their responsibility to comply with adopted BMPs and with regulations prohibiting cross connections between sanitary sewers and storm drains. Provide contractors and subcontractors with copies of relevant BMPs during specification and bidding phases.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Contingency Response

- Provide adequate implementation training for facilities with a Spill Prevention Control and Countermeasure (SPCC) Plan, if required developed under guidelines set forth in 40 CFR, Section 112.3(a), (b).
- Adequately train employees in the use of spill response equipment and materials.

Inspection and Training

- Perform and document in a log book frequent inspections of work areas, waste storage facilities, maintenance areas, and contractor projects to examine compliance with BMPs. Follow up with additional training or enforcement as required. Incorporate inspection findings into subsequent training efforts.

- Design storm water pollution education programs to contain the following elements:
  - Promote the proper storage, use, and disposal of landscape maintenance chemicals and other potentially harmful chemicals.
  - Promote the use of safer alternative products such as: short-lived pesticides, non-chlorinated solvents, water-based paints, non-aerosol products.
  - Encourage the use of “dry" washing processes for aircraft, vehicles, and equipment.

TARGETED ACTIVITIES

- All Maintenance
- All Fueling
- All Washing
- Equipment Cleaning
- Cargo Handling
- All Storage
- Painting/Stripping
- Floor Washdowns
- Aircraft Deicing/Anti-Icing
- Garbage Collection
- Aircraft Lavatory Service
- Fire Fighting Equipment Testing
- Potable Water System Flushing
- Runway Rubber Removal

TARGETED POLLUTANTS

- Oil and Grease
- Vehicle Fluids
- Fuel
- Solvents/Cleaning Solutions
- Deicing/Anti-Icing Flui
- Battery Acid
- Pesticides/Herbicides/ Fertilizers
- Paint
- Aircraft Fire Fighting Foam
- Metals
- Dumpster Wastes
- Sediment
- Landscape Waste
- Floatables
- Lavatory Chemical Wastes
- Potable Water System Chemicals
- Rubber Particles

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 15	STORM WATER POLLUTION PREVENTION EDUCATION

Inspection and Training (Continued)

- Design storm water pollution education programs to contain the following elements:
  - -Encourage efficient and safe housekeeping practices in industrial activity areas.
  - Increase awareness of the detrimental environmental impacts that result when fuel, antifreeze, pesticides, lubricants, detergents, paints and other wastes are dumped onto the ground or into storm drains.
  - Promote source reduction and recycling of waste materials.
  - Increase awareness of possible penalties and fines associated with discharge of pollutants into storm drains.
  - Increase awareness of what is and what is not allowed to enter storm drains. Provide a mechanism for violations to be reported.

KEY APPROACHES

- Perform inspections and enforcement
- Provide training for employees
- Promote education of vendors/public

REQUIREMENTS:

- Capital and O&M costs are minimal for educational programs.
- Educational programs need to be ongoing. Information and training must be disseminated at regular intervals.

LIMITATIONS:

- The success of educational programs is difficult to measure. Acceptance and awareness are critical factors.

RELEVANT RULES AND REGULATIONS:

- 40 CFR 110.3 Discharge of Oil
- 40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for Storm Water Discharges
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 16 STREET SWEEPING & STORMWATER FACILITY MAINTENANCE

PURPOSE:

The solids and floatable control aspect of the SWPPP focuses on using preventive measures to reduce the amount of solids and floatable materials entering the storm system. Many solids on the street come from pavement, tire and vehicle equipment wear, and often contain heavy metals and petroleum products. Solids are also produce by erosion along roads.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Street sweeping

The Port Authority will perform landside roadway sweeping on all airport roadways and curbed streets daily from Spring through Fall. The Port Authority will strive to sweep all roadways at least three times a week. All aeronautical areas and roadways will be swept a minimum once a week. Port Authority employees will inspect the stability of shoulders, embankments, ditches and soils along the streets at least twice a year. Eroding sites will be repaired. Roadway and curbed street sweeping will be performed as necessary during winter months.

Stormwater Facility Maintenance

The Port Authority is required to maintain all stormwater facilities to ensure that they are properly functioning and operating at the designed efficiency. A catch basin is a vault or a chamber that is usually associated with the storm drain inlet along the street. The catch basin usually has the capability to trap debris and some sediment before they travel farther into the storm system. If catch basins are not cleaned periodically, they may fill up with debris and st functioning properly. To mitigate that possibility, the Port Authority inspects the catch basins periodically and they are cleaned as necessary. All sediment and debris from roadway runoff and removed and the vault is vacuumed out

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- NYS Environmental Conservation Law, Article 33
- 40 CFR 112 Oil Pollution Prevention for Spill Prevention and Control and Countermeasure (SPCC) Plans
- 40 CFR 122 National Pollutant Discharge Elimination System (NPDES) Regulation
- 40 CFR 171-173, 175 and 177 Department of Transportation Regulations
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 17

Security

PURPOSE:

Toughened security began before the new Aviation Security and Transportation Act of 2001 became law on November 19, 2001. However, heightened procedures have been implemented for extra precaution. Criminal background checks on all airport employees have begun and must be completed by year-end. Carry-on bags are searched more carefully, and passengers' names are crossed-checked with lists of people the Federal government deems suspicious.

In addition, the Port Authority of New York and New Jersey recently announced additional implementation of airport security measures that will require all current and prospective employees who have access to secure areas of airports to undergo fingerprinting and criminal history background checks.

The Port Authority also will implement these additional measures the airport:

- Advancing Perimeter Security Improvements: The Port Authority is testing the deployment of a combination of advanced security technologies-such as ground-based radar and state-of-the-art motion sensors-to bolster surveillance of airport perimeters that will improve detection of unauthorized intrusions.
- Improving Access Control: The Port Authority is pilot testing new centralized access control systems at airport security doors and gates that use biometric technology to scan fingerprints.
- Making Greater Use of Closed Circuit TV: High resolution, low light or infrared closed circuit television cameras will supplement the perimeter and access control systems to help law enforcement personnel determine the nature of an intrusion or an alarm.
- Supporting Airline Initiatives Using Biometrics: A number of airlines will begin to enroll passengers in biometrics based identification programs that will serve to focus security resources more efficiently by speeding the process and enhancing customer service for known, trusted, travelers while at the same time cutting down on identity fraud and illicit use of travel documents. If approved by the federal Transportation Security Administration (TSA), the program, called “Fast Flow," is expected to be widely implemented by many airlines. The Port Authority will assist participating airlines, evaluate the results and explore the possibility of implementing this technology more broadly at PANYNJ airports.
- The Port Authority is working to coordinate efforts between the TSA and the Airlines to install new checkpoints by November 2007. These reconfigured checkpoints will have new X-Ray and screening equipment, video screens to tell passengers what to expect and privacy areas for secondary screening.
- The Port Authority is working closely with Boeing, which has been hired by the TSA in install a mix of Explosive Detection Systems and Explosive Trace Detection equipment in terminals. The goal is to screen 100% of checked baggage for explosives by the end of 2007.
- New hardened barriers are being installed at aeronautical access gates.

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 18 RUBBER REMOVAL

PURPOSE:

Eliminate discharges to the storm drain system associated with rubber removal activities. Prevent the discharge of pollutants to soil, groundwater, stormwater, surface water or air.

APPROACH TO EXISTING FACILITY ACTIVITIES:

Implement the following good housekeeping practices and BMPs to prevent and/or reduce stormwater pollution from runway rubber removal operations.

High Pressure Water

The Port Authority's contractor will remove rubber from the runways using high-pressure water. Mobile high-pressure water (no greater than 25,000 psi) is used in a self-contained, truck mounted cleaning system. The equipment is equipped with spray nozzles attached to a spray bar or rotating spray bar. The cleaning system is followed by a vacuum truck to collect the residue. All resulting residue and debris is disposed of at a location off airport property in compliance with all local, State and Federal regulations. The Port Authority has reserved the right to request verification of proper disposal of all material collected and taken off site in accordance with all local, State, and Federal Regulations.

Chemical Pretreatment

If deemed necessary by the Manager of Airport Maintenances Services or appointed representative, chemical pretreatment may be used. Pretreatment chemical for removal shall only be Hurrisafe 8035 HK288A or an Port Authority approved equivalent. The chemical cannot contain any of the following caustic materials: Sodium Hydroxide, Potassium Hydroxide, Terpenes and D-Limonene. The chemical must certify to USEPA 796.3200 as "Readily Biodegradable", and not be harmful to aquatic life, be non-corrosive to aircraft metals or other metal surfaces, and not emit hazardous fumes or odors. Testing per ASTM-F-519 and/or ASTM-F-483 for Hydrogen Embrittlement and Immersion Corrosion may be required at the option of the Port Authority. The chemical shall effect 100% rubber removal.

Inspection and Training

- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education, right-to-know awareness training, and hazardous materials management.
- Train appropriate employees to implement these procedures.

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- NYS Environmental Conservation Law, Article 33
- 40 CFR 112 Oil Pollution Prevention for Spill Prevention and Control and Countermeasure (SPCC) Plans
- 40 CFR 122 National Pollutant Discharge Elimination System (NPDES) Regulation
- 40 CFR 171-173, 175 and 177 Department of Transportation Regulations
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges
- 40 CFR 401 Effluent Limitation Guidelines

Port Authority of New York and New Jersey
John F. Kennedy International Airport

BMP 19 — Runway and Taxiway Anti-icing

PURPOSE:

Prevent or reduce the discharge of pollutants to soil, groundwater and/or stormwater from runway and taxiway deicing and anti-icing procedures. The level of biochemical oxygen demand (BOD) associated with the discharge of deicing compounds into receiving waters, such as Thurston and Bergen Basins and Jamaica Bay, can result in a decrease in the available oxygen which can impact aquatic life.

APPROACH TO EXISTING FACILITY ACTIVITIES:
Operational Considerations

- Perform training for all personnel involved with deicing operations. The training should, at a minimum, include source reduction techniques, best management practices and good housekeeping.
- Depending on weather conditions, apply only enough solid and fluid materials to surfaces to ensure the safety of the runway/taxiway. Excess fluid dripped to the ground may enter directly into the storm drain.
- Utilize state-of-the art multi-function equipment (broom, plow, blower) to mechanically remove snow/ice from pavement. Ensure that staff are adequately trained annually in the use of the equipment.
- Check inclement weather forecasts to limit the frequency of propylene glycol, sodium acetate and potassium acetate to the runways/taxiways.
- The use of ethylene glycol is strongly discouraged and the use of urea is strictly prohibited at JFK Airport.
- Wash sand used for deicing purposes to the edge of the pavement and collect by sweepers if applicable once the pavement is dried.
- Only materials approved by Port Authority may be used for runway and taxiway deicing.
- Record quantities of all deicing material used daily or by storm event during deicing.
- Maintain proper function of in-pavement temperature sensors to determine the concentrations and amount of deicing chemical to be applied to the runway/taxiway.
- Pilots shall transmit information on runway take-off and landing conditions back to the PANYNJ.

TARGETED ACTIVITIES

- Runway anti-icing
- Taxiway anti-icing

TARGETED POLLUTANTS

- Propylene glycol
- Potassium acetate
- Sodium acetate
- Ethylene Glycol (strongly discouraged)
- Urea (strictly prohibited)

KEY APPROACHES

- Apply only required amounts of fluid and solid material
- Educate personnel about the use of deicing agents.
- Report propylene and/or ethylene glycol (strongly discouraged) releases to appropriate regulatory agencies

RELEVANT RULES AND REGULATIONS:

- The Port Authority of New York and New Jersey Rules and Regulations as well as other applicable policies, procedures and tenant agreements
- 6 NYCRR Parts 595-599 Chemical Bulk Storage Regulations
- 6 NYCRR Parts 370-374 New York State Hazardous Waste Regulations
- 6 NYCRR Part 360 Solid Waste Regulations
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 122-124 NPDES Regulations for StormWater Discharges
- 40 CFR 302 Designation of Reportable Quantities and Notification Requirements for Hazardous Substances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- 40 CFR 372 Toxic Chemical Release Reporting: Community Right-to-Know
- 40 CFR 401 Effluent Limitation Guidelines