

# **Sector S**

## **Air Transportation Facilities Fact Sheet**

Fact Sheets include a general discussion of the issues and pollutants specific to each industrial sector, including a summary of the data used to formulate the Multi-Sector General Permit. Fact Sheet topics include:

- Discharges Covered Under the Sector;
- Industry Profile;
- Associated Storm Water Pollutants;
- Pollution Control Options;
- Special Conditions;
- Storm Water Pollution Plan Requirements;
- Monitoring and Reporting Requirements; and
- Numeric Effluent Limitations, if any.

The Fact Sheet is not to be used as the basis for permit compliance. Sector-specific Permit Language, immediately following this Fact Sheet, provides specific detail for permit compliance.

*S. Storm Water Discharges Associated With Industrial Activity From Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities*

1. Discharges Covered Under This Section

The conditions in this section apply to airports, airport terminals, airline carriers, and establishments engaged in servicing, repairing, or maintaining aircraft and ground vehicles, equipment cleaning and maintenance (including vehicle and equipment rehabilitation mechanical repairs, painting, fueling, lubrication) or deicing/anti-icing operations which conduct the above described activities (facilities generally classified as SIC code 45). For the purpose of this final permit, 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. Both of these activities are covered under this permit.

When an industrial facility, described by the above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility (co-located industrial activities). The operator of the facility shall determine which other monitoring and pollution prevention

plan section(s) of this permit (if any) are applicable to the facility.

*a. Responsible Parties.* Airports typically operate under a single management organization known as the airport "authority" which in most cases is a public agency. Airline carriers and other fixed base operators (e.g., fueling companies and maintenance shops) that have contracts with the airport authority to conduct business on airport property are commonly referred to as "tenants" of the airport. Tenants may be of two types—those that are regulated as storm water dischargers associated with industrial activities under 40 CFR 122.26(b)(14) and those that are not. The operator and the tenants of the airport that conduct industrial activities as described above, or as described anywhere in 40 CFR 122.26(b)(14) and which have storm water discharges, are required to apply for coverage under an NPDES storm water permit for the discharges from their areas of operation. Where an airport has multiple operators (airport authority and tenants) that have storm water discharges associated with industrial activity, as described above, each operator is required to apply for coverage under an NPDES storm water permit. This may be done as separate operators or may be done as co-permittees. Regardless, each individual party, whether a co-permittee or a separate permittee, must submit a notice of intent (NOI) to be covered under today's permit. During implementation of the storm water pollution prevention plan, the airport authority should work cooperatively with tenants that are not required to have a NPDES permit for their storm water discharges. The airport authority may accomplish this through negotiated agreements, contractual requirements, or other means. Ultimately, the operator(s)/owner(s) (the airport authority) of the storm water outfalls from the airport is(are) responsible for compliance with all terms and conditions of this or other NPDES permits applicable to those outfalls. Storm water pollution prevention plans developed separately for areas of the airport facility occupied by tenants of the airport that are regulated under 40 CFR 122.26(b)(14) as a storm water discharge associated with industrial activity shall be integrated into the storm water pollution prevention plan for the entire airport facility.

The airport authority and tenants of the airport are encouraged to apply as co-permittees under today's permit, and to work in partnership in the development and implementation of a storm water pollution prevention plan.

2. Pollutants Found in Storm Water Discharges

In general, the quantitative data submitted thus far has not raised any particular areas of concern with respect to discharges of pollutants resulting from vehicle maintenance and/or deicing/anti-icing operations conducted at airport facilities. However, EPA believes that the part 2 sampling data does not provide justification that discharges resulting from deicing/anti-icing operations are not a significant source of pollutants. The sampling requirements for part 2 of the group application did not specify that facilities must sample storm water discharges from areas where deicing/anti-icing activities occur and/or during times when such operations were being conducted. As a result, only one facility indicated that the sampling data submitted was collected from areas where deicing activities were being conducted. After reviewing recent case studies on the effects of glycol discharges to receiving waters, EPA reports and the results of FAA surveys, EPA believes that additional information on the discharges of deicing/anti-icing chemicals to receiving waters as a result of aircraft and runway deicing/anti-icing operations is warranted and necessary.

Both ethylene and propylene glycols exert high oxygen demands when released into receiving waters. As such, this section requires that facilities report both the Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) of discharges sampled at facilities that use at least 100,000 gallons or more of glycol-based deicing/anti-icing chemicals. The concentration of nitrogen and possibly ammonia are the concern with respect to deicing/anti-icing operations where urea is used. Therefore, this section requires that facilities subject to the monitoring requirements in Part XI.S.5. of the permit also report the concentration of Total Kjeldahl Nitrogen (TKN) in discharges sampled.

The results of the storm water survey conducted by the FAA (June 1992) showed that 10 percent of the respondents who conduct deicing/anti-icing activities used more than 100,000 gallons of glycol-based deicing/anti-icing chemicals during winter seasons. In addition, those facilities using more than 100,000 gallons of glycol-based deicing/anti-icing chemicals accounted for 71 percent of the total amount of glycol-based deicing/anti-icing chemicals reported in the survey. In a similar survey conducted by the American Association of Airport

Executives, 4 percent of the airports conducting deicing/anti-icing activities used more than 100,000 gallons of ethylene glycol which represented approximately 76 percent of the total amount of ethylene glycol used by all airports surveyed.

### 3. Special Conditions

*a. Prohibition of Non-storm Water Discharges.* In addition to the non-storm water prohibitions described under Part III.A.2, today's permit clarifies in Part XI.S.2.a (Prohibition of Non-storm Water Discharges) that non-storm water discharges, including discharges from aircraft, ground vehicle and equipment washwaters, dry weather discharges from airport deicing/anti-icing operations, and dry weather discharges resulting from runway maintenance are not authorized under this permit. Dry weather discharges are generated from processes other than those described in the definition of storm water. The definition of storm water includes storm water runoff, snow melt runoff, and surface runoff and drainage. There is no limit on the time between the snowfall and snow melt for the purpose of including a snow melt discharge in the definition of storm water. All other discharges not included in the definition of storm water constitute non-storm water discharges. Operators of non-storm water discharges must obtain coverage under a separate NPDES wastewater permit if such discharges are a point source discharge to waters of the U.S. or are discharged through a municipal separate storm sewer system. In a related requirement, the permittee is required to attach a copy of the NPDES permit issued for the discharge of non-storm water runoff or, if an NPDES permit has not yet been issued, a copy of the pending application to the plan. For facilities that discharge the waters mentioned above to a sanitary sewer system, the operator of the sanitary sewer system must be notified. A copy of the notification letter must be attached to the plan. If an industrial user permit has been issued under a pretreatment program, a copy of the permit must be attached to the plan as does any other permit to which the facility's discharge waters are subject. This will help to prevent confusion and help to ensure that non-storm water discharges are not inadvertently authorized by this permit.

*b. Releases of Reportable Quantities of Hazardous Substances and Oil.* Today's permit clarifies in Part XI.S.2.b (Releases of Reportable Quantities of Hazardous Substances and Oil) that each individual permittee is required to report spills equal to or exceeding the

RQ levels specified at 40 CFR 110, 117 and 302. If the airport authority is the sole permittee, then the sum total of all spills at the airport must be assessed against the RQ. If the airport authority is a co-permittee with other deicing/anti-icing operators at the airport, such as numerous different airlines, the assessed amount must be the summation of spills by each co-permittee. If separate, distinct individual permittees exist at the airport, then the amount spilled by each separate permittee must be the assessed amount for the RQ determination.

### 4. Storm Water Pollution Prevention Plan Requirements

*a. Contents of the Plan.* The pollution prevention plan requirements described below are in addition to those found under Part VI.C.

*(1) Description of Potential Pollutant Sources.* In addition to the common pollution prevention plan requirements discussed in Part VI.C.2.a. (Drainage), the site map developed for an entire airport shall identify the location of each tenant of the facility describe their activities.

In addition to the pollution prevention requirements discussed in Part VI.C.2. (Description of Potential Pollutant Sources), airport facilities, including areas operated by tenants of the facility that conduct industrial activities, must address the following specific operations and areas where the operations occur:

*Aircraft Deicing/Anti-icing*—Includes both deicing to remove frost, snow or ice, and anti-icing which prevents the accumulation of frost, snow or ice. Deicing/anti-icing of an airplane is accomplished through the application of a freezing point depressant fluid, commonly ethylene glycol or propylene glycol, to the exterior surface of an aircraft. Both ethylene and propylene glycol have high biochemical oxygen demands (BOD) when discharged to receiving waters. Environmental impacts on surface waters due to glycol discharges includes glycol odors and glycol contaminated surface water and ground water systems, diminished dissolved oxygen levels and fish kills.

The Federal Aviation Administration (FAA) recently conducted a survey which focused on aircraft and runway deicing/anti-icing operations at U.S. airports. Ninety-six airports responded to the survey and results are summarized in a final report dated June 1, 1992. In summary, 65 airports indicated the amounts of ethylene glycol used for aircraft deicing for the winter periods of 1989–90 and 1990–91 and the volumes used by each airport

ranged significantly, from a few gallons to 520,000 gallons. The average annual volume of ethylene glycol used by all respondents for the winter periods of 1989–90 and 1990–91 was approximately 2.16 million gallons.

The FAA survey summary reported that the majority of aircraft deicing operations occur on the apron adjacent to the passenger terminal and runoff generally drains to a nearby storm water inlet. In fact, 31 of the respondents to the FAA survey indicated that 75 percent or more of the spent deicing chemicals were discharged to a storm sewer system. In general, the remainder of spent chemical resulting from aircraft deicing operations drained to ditches or open areas.

All aspects of aircraft deicing/anti-icing operations, including quantities used and stored, as well as application, handling and storage procedures are required to be addressed under the conditions of this section.

*(b) Runway Deicing/Anti-icing*—Includes both deicing and anti-icing operations conducted on runways, taxiways and ramps. Runway deicing/anti-icing commonly involves either the application of chemical fluids such as ethylene glycol or solid constituents such as pelletized urea. Urea has a high nitrogen content, therefore degradation of urea in a receiving water causes an increase in nutrient loadings resulting in an accelerated growth of algae and eutrophic conditions. Under certain ambient conditions, the degradation of urea in receiving waters can also result in ammonia concentrations toxic to aquatic life.

The FAA's storm water survey reported that, of the facilities that indicated using urea for runway deicing/anti-icing for the winter periods of 1989–90 and 1990–91, the amount of urea used during a single winter period ranged from 100 pounds to 1,450,000 pounds (715 tons). With regard to disposal of spent deicing/anti-icing chemicals from runways, taxiways and ramps, 20 airports indicated that they discharged 50 percent or more of runoff from deicing areas directly to a storm sewer system. In response to questions concerning collection and treatment of spent deicing chemicals from runway deicing/anti-icing activities, only five facilities indicated that runoff from runway deicing/anti-icing operations was collected and treated.

All aspects of runway deicing/anti-icing operations, including types of deicing/anti-icing chemicals, quantities used and stored, as well as application, handling and storage procedures are required to be addressed under the conditions of this section.

(c) *Aircraft Servicing*—Typically conducted on the apron area adjacent to the passenger terminal, the servicing of aircraft could potentially contribute pollutants to storm water. As a result of spills or leaks during the servicing of aircraft, fluids such as engine oil, hydraulic fluid, fuel and lavatory waste could potentially enter the storm water system and/or be discharged to receiving waters. All spillage other than potable water should be prevented from entering the storm sewer system.

(d) *Aircraft, Ground Vehicle and Equipment Maintenance and Washing*—Maintenance activities included in this section include both minor and major operations conducted either on the apron adjacent to the passenger terminal, or at dedicated maintenance facilities. Potential pollutant sources from all types of maintenance activities include spills and leaks of engine oils, hydraulic fluids, transmission oil, radiator fluids, and chemical solvents used for parts cleaning. In addition, the disposal of waste parts, batteries, oil and fuel filters, and oily rags also have a potential for contaminating storm water runoff from maintenance areas unless proper management practices and operating procedures are implemented. The spent wash water from aircraft and ground vehicle washing activities could potentially be contaminated with surface dirt, metals, and fluids (fuel, hydraulic fluid, oil, lavatory waste).

(e) *Runway Maintenance*—Over time, materials such as tire rubber, oil and grease, paint chips, and jet fuel can build up on the surface of a runway causing a reduction in the friction of the pavement surface. When the friction level of a runway falls below a specific level, then maintenance must be performed. The Federal Aviation Administration (FAA) recommends several methods for removing rubber deposits and other contaminants from a runway surface including high pressure water, chemical solvents, high velocity particle impact, and mechanical grinding. If not properly managed, the materials removed from the runway surface could be discharged into nearby surface waters. Similarly, if chemical solvents are used in the maintenance operation, improper management practices could result in discharges of the chemical solvents in the storm water runoff from runway areas to nearby surface waters.

(2) *Measures and Controls*. In addition to the common pollution prevention plan requirements discussed in Part VI.C.3. (Measures and Controls), this section specifies that permittees must address particular Best Management Practices (BMP) for

specific areas and operations identified as potential sources of pollutants. This section further specifies that a schedule for implementation shall be provided for each BMP selected. The BMPs specified in this section are not intended to be the only alternative management practices considered by operators, simply the minimum to be considered. In most cases, the BMPs specified are common sense approaches that are already in practice at many airport facilities. As such, operators may only need to include the information in their storm water pollution prevention plan. Specific areas and industrial operations mentioned in this section and the corresponding BMPs for such areas are the following:

(a) *Aircraft, Ground Vehicle and Equipment Maintenance Areas (including aircraft service areas)*—The plan must describe measures that prevent or minimize the contamination of storm water runoff from all areas used for aircraft, ground vehicle and equipment maintenance and servicing. Management practices such as performing all maintenance activities indoors, maintaining an organized inventory of materials used, draining all parts of fluids prior to disposal, prohibiting the practice of hosing down the apron or hangar floor, using dry cleanup methods in the event of spills, and/or collecting the storm water runoff from maintenance and/or service areas and providing treatment, or recycling should be considered.

(b) *Aircraft, Ground Vehicle, and Equipment Cleaning Areas*—The plan must describe measures that prevent or minimize the contamination of the storm water runoff from all areas used for aircraft, ground vehicle, and equipment maintenance. Management practices such as performing all cleaning operations indoors, and/or collecting the storm water runoff from the area and providing treatment or recycling should be considered.

(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 plan must describe measures that prevent or minimize the contamination of storm water runoff from these areas. Management practices such as 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 should be considered.

(d) *Material Storage Areas*—Storage units 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 contamination of storm water, and plainly labeled (e.g., "used oil," "Contaminated Jet-A," etc.). The plan must describe measures that prevent or minimize contamination of the storm water runoff from storage areas. Management practices such as indoor storage of materials, centralized storage areas for waste materials, and/or installation of berms and dikes around storage areas should be considered for implementation.

(e) *Airport Fuel System and Fueling Areas*—The plan must describe measures that prevent or minimize the discharge of fuels to the storm sewer resulting from fuel servicing activities or other operations conducted in support of the airport fuel system. Where the discharge of fuels into the storm sewer cannot be prevented, the plan shall indicate measures that will be employed to prevent or minimize the discharge of the contaminated runoff into receiving surface waters.

Where above ground storage timers are present, pollution prevention plan requirements shall be consistent with requirements established in 40 CFR 112.7 guidelines for the preparation and implementation of a spill prevention control and countermeasure (SPCC) plan. Where a SPCC plan already exists, the storm water pollution prevention plan may incorporate requirements into the PPP by reference.

(f) *Source Reduction*—This section specifies that facilities which conduct aircraft and/or runway (including taxiways and ramps) deicing/anti-icing operations shall evaluate present operating procedures to consider alternative practices which would reduce the overall amount of deicing/anti-icing chemical used and/or lessen the environmental impact of the pollutant source.

With regard to runway deicing operations, operators should begin by evaluating present chemical application rates to ensure against excessive over application. Devices which meter the amount of chemical being applied to runways help to prevent over application. Operators should also emphasize anti-icing operations which would preclude the need to deice; less chemical is required to prevent the formation of ice on a runway than is required to remove ice from a runway. To further assist in implementing anti-icing procedures, operators should also consider installing runway ice detection systems (RID) otherwise known as "pavement sensors" which monitor runway temperatures. Pavement sensors provide an indication of when runway

temperatures are approaching freezing conditions, thus alerting operators of the need to conduct anti-icing operations. Deicing/anti-icing chemicals applied during extremely cold, dry conditions, are often ineffective since they do not adhere to the ice surface and may be scattered as a result of windy conditions or aircraft movement. In an effort to improve the efficiency of the application, operators should consider pre-wetting the deicing chemical to improve the adhesion to the iced surface.

With regard to substitute deicing/chemicals for runway use, operators should consider using chemicals which have less of an environmental impact on receiving waters. Potassium acetate, has a lower oxygen demand than glycol, is nontoxic to aquatic habitat or humans, and was approved by the FAA for runway deicing operations in November, 1991 (AC No. 150/5200-30A CHG 1).

In considering alternative management practices for aircraft deicing/operations, operators should evaluate present application rates to ensure against excessive over application. In addition, operators may consider pretreating aircraft with hot water or forced air prior to the application of chemical deicer. The goal of this management practice is to reduce the amount of chemical deicer used during the operation. This management practice alone is not sufficient since discharges of small concentrations of glycol can have significant effects on receiving waters. It is, however, an effective measure to reduce the amount of glycol needed per operation.

*(g) Management of Runoff*—A number of reports including EPA's Guidance For Issuing NPDES Storm Water Permits For Airports, September 28, 1991 and Federal Aviation Administration (FAA) Advisory Circular (AC 150-5320-15) indicate that the most common location for deicing/anti-icing aircraft at U.S. airports is along the apron areas where mobile deicing vehicles operate from gate to gate. In a recent FAA survey of deicing/anti-icing operations at U.S. airports (June 1992), the majority of respondents indicated that spent deicer chemicals from aircraft deicing/anti-icing operations either drain to the storm sewer system, open areas, or are left to evaporate on the ramp.

This section specifies that operators shall provide a narrative description of BMPs to control or manage storm water runoff from areas where deicing/anti-icing operations occur in an effort to minimize or reduce the amount of pollutants being discharged from the site. For example, when deicing/anti-

icing operations are conducted on aircraft during periods of dry weather, operators should ensure that storm water inlets are blocked to prevent the discharge of deicing/anti-icing chemicals to the storm sewer system. Mechanical vacuum systems or other similar devices can then be used to collect the spent deicing chemical from the apron surface for proper disposal to prevent those materials from later becoming a source of storm water contamination. Establishing a centralized deicing station would also provide better control over aircraft deicing/anti-icing operations in that it enables operators to readily collect spent deicing/anti-icing chemicals.

Once spent deicer/anti-icer chemicals are collected, operators can then select from various methods of disposal such as:

*(i) Disposal to Sanitary Sewage Facility*—Because glycols are readily biodegradable, runoff can be treated along with sanitary sewage. The receiving treatment plant would, however, have to have the capacity to handle the hydraulic load as well as the additional biochemical oxygen demand associated with the deicing/anti-icing chemical. Measurements have shown that the average oxygen demand for glycol is between 400,000 and 600,000 mg O<sub>2</sub>/L even if diluted per fluid manufacturers specifications (FAA AC 150-5320-15 CHG 1, 1991). To lessen both the increased hydraulic and pollutant loads due to runoff from airport deicing/anti-icing operations, retention basins may be located at the airport facility.

*(ii) Retention and Detention Ponds*—Conversion of suitable unused airport land into retention or detention basins allows for collection of large volumes of glycol waste from pavement surface runoff. The design capacity for such basins should at least handle surface runoffs for winter months noting the decreased microbial activity during the winter season which is needed for biodegradation, plus additional capacity for runoff during thawing periods. Continuous aeration would supply required oxygen and allow for faster biodegradation and release of glycol waste, which may reduce capacity requirements. Metering the discharge of flow from an onsite basin allows the operator to better control the rate of flow during peak flight hours and to avoid BOD shock loadings to a sanitary treatment facility or a surface water.

*(iii) Recycling*—Glycol recycling provides operators with a chemical cost savings since recaptured glycol can be sold or reused for other non-aircraft applications (FAA AC 150-5320-15,

February 1991). Studies indicate that collected deicing chemicals which have glycol concentrations ranging from 15 to 25 percent can be cost effectively recycled. The optimal conditions for collecting the highest concentration of glycol in spent deicing fluid is directly from the apron or centralized deicing station when deicing operations are conducted during dry weather or light precipitation events. Deicing/anti-icing chemicals discharged to retention basins which are then allowed to mix with additional surface runoff typically result in glycol concentrations well below the acceptable range for recycling. There are, however, methods of physical separation presently available which increase the concentration of glycol and allow operators to recover a relatively reusable product.

*(h) Inspections*—In addition to the common pollution prevention plan requirements discussed in Part VI.C.3.d (Inspections), qualified personnel shall inspect equipment and areas involved in deicing/anti-icing operations on a weekly basis during periods when deicing/anti-icing operations are being conducted.

*(i) Pollution Prevention Training*—Pollution Prevention training programs shall inform management and personnel responsible for implementing activities identified in the storm water pollution prevention plan of the components and goals of the plan. Training should address topics such as spill response, good housekeeping, material management practices and deicing/anti-icing procedures. The pollution prevention plan shall identify periodic dates for such training. EPA recommends that facilities conduct training annually at a minimum. However, more frequent training may be necessary at facilities with high turnover of employees or where employee participation is essential to the storm water pollution prevention plan.

*(3) Comprehensive Site Compliance Evaluation*. The storm water pollution prevention plan must describe the scope and content of comprehensive site evaluation that qualified personnel will conduct to: (1) Confirm the accuracy of the description of potential pollution sources contained in the plan, (2) determine the effectiveness of the plan, and (3) assess compliance with the terms and conditions of the permit. Comprehensive site compliance evaluations must be conducted at least annually. The individual or individuals who will conduct the evaluations must be identified in the plan and should be members of the pollution prevention team. Evaluation reports must be

retained for a period of at least 3 years following the date of evaluation.

Based on the results of each evaluation, the description of potential pollution sources, and measures and controls, the plan must be revised as appropriate within 2 weeks after each inspection. Changes in the measures and controls must be implemented on the site in a timely manner, and no later than 12 weeks after completion of the inspection.

#### 5. Numeric Effluent Limitation

There are no additional numerical limitations beyond those in Part V.B. of this permit.

#### 6. Monitoring and Reporting Requirements

In general, the quantitative data submitted with part 2 of the group application was inadequate to clearly identify particular areas of concern with respect to discharges of pollutants resulting from vehicle maintenance and/or deicing/anti-icing operations conducted at airport facilities. EPA believes that the part 2 sampling data does not provide justification that discharges resulting from deicing/anti-icing operations are not a significant source of pollutants. The sampling requirements for part 2 of the group application did not specify that facilities must sample storm water discharges from areas where deicing/anti-icing activities occur and/or during times when such operations were being conducted. As a result, only one facility indicated that the sampling data submitted was collected from areas where deicing/anti-icing activities were being conducted. After reviewing recent case studies on the effects of glycol discharges to receiving waters, EPA reports, and the results of FAA surveys, EPA believes that additional information on the impacts of discharges of deicing/anti-icing chemicals to receiving waters resulting from aircraft and runway deicing/anti-icing operations is warranted and necessary.

Both ethylene and propylene glycols exert high oxygen demands when released into receiving waters. As such, this section requires that facilities report both the Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) of discharges sampled at facilities that use at least 100,000 gallons or more of glycol-based deicing/anti-icing chemicals. The concentration of nitrogen and possibly ammonia are the concern with respect to deicing/anti-icing operations where urea is used. Therefore, this section requires that facilities subject to the monitoring

requirements in Part XI.S.5. of the permit also report the concentration of Total Kjeldahl Nitrogen (TKN) in discharges sampled.

The results of the storm water survey conducted by FAA (June 1992) showed that 10 percent of the respondents who conduct deicing activities used more than 100,000 gallons of glycol-based deicing chemicals during winter seasons. In addition, those facilities using more than 100,000 gallons of glycol-based deicing chemicals accounted for 71 percent of the total amount of glycol-based deiced chemicals reported by all respondents in the survey. In a similar survey conducted by the American Association of Airport Executives, 4 percent of the airports conducting deicing activities used more than 100,000 gallons of ethylene glycol which represented approximately 76 percent of the total amount of ethylene glycol used by all airports surveyed.

*a. Annual Loading Estimates.* All facilities that use more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis shall prepare estimates of annual pollutant loadings resulting from discharges of spent deicing/anti-icing chemicals from the facility. The loading estimates shall reflect the amounts of deicing/anti-icing chemicals discharged to separate storm sewer systems or surface waters, prior to and after implementation of the facility's storm water pollution prevention plan. The purpose of these estimates is to calculate the net reduction in deicing/anti-icing chemical loadings to receiving streams. Such estimates shall be reviewed and certified by an environmental professional (engineer, scientist, etc.) with experience in storm water pollution prevention. The environmental professional need not be certified or registered, however, experience with development of storm water pollution prevention plans and with airport operations is critical to prepare accurate estimates. By means of the certification, the environmental professional, having examined the facility's deicing/anti-icing procedures and proposed control measures described in the storm water pollution prevention plan, shall attest that the loading estimates have been accurately prepared.

*b. Analytical Monitoring Requirements.* EPA believes that airports may reduce the level of pollutants in storm water runoff from their sites through the development and proper implementation of the storm water pollution prevention plan

requirements discussed in today's permit. In order to provide a tool for evaluating the effectiveness of the pollution prevention plan and to characterize the discharge for potential environmental impacts, the permit requires airport facilities that use 100,000 gallons or more of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis to collect and analyze samples of their storm water discharges from areas where deicing/anti-icing activities occur for the pollutants listed in Table S-1. Airport facilities which use less than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or less than 100 tons of urea on an average annual basis are not required to monitor discharges resulting from deicing/anti-icing activities.

In determining if an airport is subject to the monitoring requirements, airport authorities must determine the "average annual usage rate" of deicing/anti-icing chemicals at their particular facility. The "average annual usage rate" is determined by averaging the total amounts of deicing/anti-icing chemicals used at the facility for the three previous calendar years. The total amount of deicing/anti-icing chemicals used at an airport facility is the cumulative amount used by the airport authority and each tenant of the airport facility. EPA recognizes that glycol-based deicing/anti-icing chemicals are often diluted with water prior to deicing aircraft. In some cases, deicing/anti-icing chemicals may constitute only 50 percent of the applied volume of liquid to aircraft. Therefore, in determining the fluid amounts of deicing/anti-icing chemicals used at a facility, operators should use the pre-dilution volume.

At a minimum, storm water discharges from airport facilities that use 100,000 gallons or more of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average basis must be monitored four times during the second year of permit coverage when deicing/anti-icing activities are occurring and from outfalls that receive storm water runoff from those areas. At the end of the second year of permit coverage, a facility must calculate the average concentration for all grab samples analyzed for each parameter listed in Table S-1 on an outfall-by-outfall basis. If more than four different events are sampled during a monitoring period, then the average concentration for each parameter shall be determined using all grab samples analyzed.

TABLE S-1.—INDUSTRY MONITORING REQUIREMENTS

Parameter	Cut-off concentration
Biochemical Oxygen Demand (BOD <sub>5</sub> ).	30 mg/L
Chemical Oxygen Demand (COD).	120 mg/L
Ammonia .....	19 mg/L
pH .....	6.0 to 9 s.u.

If the average concentration for all grab samples analyzed for a parameter is less than or equal to the value listed in Table S-1, then the permittee is not required to conduct quantitative analysis for that parameter during the fourth year of the permit. If, however, the average concentration for all grab samples analyzed for a parameter is greater than the cut-off concentration listed in Table S-1, then the permittee is required to conduct monitoring four times for that parameter while deicing/

anti-icing operations are occurring in the fourth year of the permit. Monitoring is not required during the first, third, and fifth year of the permit. The exclusion from monitoring in the fourth year of the permit is conditional on the facility maintaining industrial operations and BMPs that will ensure a quality of storm water discharges consistent with the average concentrations recorded during the second year of the permit.

TABLE S-2.—SCHEDULE OF MONITORING

2nd Year of Permit Coverage .....	<ul style="list-style-type: none"> <li>• Collect a minimum of four samples during months of deicing/anti-icing (December–February)</li> <li>• Conduct monitoring for four separate events during months of deicing/anti-icing (December–February)</li> <li>• Calculate the average concentration on an outfall by outfall basis, for all parameters analyzed during this period</li> <li>• If average concentration is greater than the value listed in Table S-1, then sampling is required during the fourth year of the permit</li> <li>• If average concentration is less than or equal to the value listed in Table S-1, then no further sampling is required for that parameter</li> </ul>
4th Year of Permit Coverage .....	<ul style="list-style-type: none"> <li>• Conduct monitoring four times, on an outfall by outfall basis, during the months of deicing/anti-icing (December–February) for any parameter where the average concentration in year 2 of the permit is greater than the value listed in Table S-1</li> <li>• If industrial activities or the pollution prevention plan have been altered such that storm water discharges may be adversely affected, monitoring is required for all parameters of concern during the months of deicing/anti-icing (December–February)</li> </ul>

In cases where the average concentration for all grabs analyzed for a parameter exceeds the cut-off concentration, EPA expects permittees to place special emphasis on methods for reducing the presence of those parameters in storm water discharges. Quarterly monitoring in the fourth year of the permit will reassess the effectiveness of the adjusted pollution prevention plan.

EPA realizes that if a facility is inactive and unstaffed it may be difficult to collect storm water discharge samples when a qualifying event occurs. Today's final permit has been revised so that inactive, unstaffed facilities can exercise a waiver of the requirement to conduct quarterly chemical sampling.

*c. Alternative Certification.* The alternative certification provision discussed in other industry sectors described in Part VIII of this fact sheet are not applicable to discharges resulting from deicing/anti-icing operations. As structured, today's permit only requires monitoring from airports that use more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons of urea. In addition, airports that use less than the stated thresholds of deicing/anti-icing chemicals are not required to submit an alternative certification.

*d. Reporting Requirements.* Permittees are required to submit all monitoring

results obtained during the second and fourth year of permit coverage no later than the 31st day of March following the monitoring period. For each outfall, one signed Discharge Monitoring Report form must be submitted to the Director per storm event sampled. For facilities conducting monitoring beyond the minimum requirements an additional Discharge Monitoring Report Form must be filed for each analysis.

*e. Sample Type.* A minimum of one grab and one flow-weighted composite sample shall be taken from each outfall that collects runoff from areas where deicing/anti-icing activities occur. The required 72-hour storm event interval is waived where the preceding measurable storm event did not result in a measurable discharge from the facility. The required 72-hour storm event interval may also be waived where the permittee documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted. The grab sample is intended to provide information on the maximum expected concentrations of BOD<sub>5</sub>, COD, and ammonia as a result of deicing/anti-icing chemicals discharged during the precipitation event. The composite sample is intended to provide a measure of the BOD<sub>5</sub>, COD, ammonia loadings for the entire precipitation event as a result of the discharge of deicing/anti-

icing chemicals. It will also provide site-specific information necessary for calculating the estimates of the annual pollutant loadings also required by this permit. The recommended methodology for performing grab and composite sampling is described at 40 CFR 122.21(g)(7). The permittee has the option to submit site-specific deicing/anti-icing discharge monitoring protocol and methodology, better suited to the particular facility, to the Director for approval.

*f. Representative Discharge.* When a facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may test the effluent of one of such outfalls and report that the quantitative data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluent. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the

drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan.

## **Sector S**

# **Air Transportation Facilities Permit Language**

The Permit Language section contains sector-specific requirements for each industrial sector, including:

- Discharges covered under the sector;
- Special Conditions
- Storm Water Pollution Prevention Plan Requirements;
- Numeric Effluent Limitations, if any; and
- Monitoring and Reporting Requirements.

Further guidance and discussion can be found in the Fact Sheet associated with this sector.

prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility (co-located industrial activities). The operator of the facility shall determine which other monitoring and pollution prevention plan section(s) of this permit (if any) are applicable to the facility.

## 2. Special Conditions

(a) *Prohibition of Non-storm Water Discharges.* In addition to those discharges prohibited under Part III.A.2, non-storm water discharges including aircraft, ground vehicle, runway and equipment washwaters, and dry weather discharges of deicing/anti-icing chemicals are not authorized by this permit. Dry weather discharges are those discharges generated by processes other than those included in the definition of storm water. The definition of storm water includes storm water runoff, snow melt runoff, and surface runoff and drainage. All other discharges constitute non-storm water discharges. Operators of non-storm water discharges must obtain coverage under a separate National Pollutant Discharge Elimination System (NPDES) permit if discharged to waters of the United States or through a municipal separate storm sewer system.

(b) *Releases of Reportable Quantities of Hazardous Substances and Oil.* Each individual permittee is required to report spills equal to or exceeding the reportable quantity levels specified at 40 CFR 110, 117, and 302 as described at Part VI.B.2. If an airport authority is the sole permittee, then the sum total of all spills at the airport must be assessed against the RQ. If the airport authority is a co-permittee with other deicing/anti-icing operators at the airport, such as numerous different airlines, the assessed amount must be the summation of spills by each co-permittee. If separate, distinct individual permittees exist at the airport, then the amount spilled by each separate permittee must be the assessed amount for the RQ determination.

## 3. Storm Water Pollution Prevention Plan Requirements

Storm water pollution prevention plans developed for areas of the facility occupied by tenants of the airport shall be integrated with the plan for the entire airport. For the purposes of today's permit, tenants of the airport facility include airline companies, fixed based operators and other parties which have

contracts with the airport authority to conduct business operations on airport property which result in storm water discharges associated with industrial activity as described in paragraph 1 of this section. Plans should be developed in accordance with Part IV. Storm Water Pollution Prevention Plans).

(a) *Contents of Plan.* Each plan shall include, at a minimum, the following items:

(1) *Pollution Prevention Team.* Each plan shall identify a specific individual or individuals as member(s) of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan and assisting the facility management in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.

(2) *Description of Potential Pollutant Sources.* Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials which may potentially be significant pollutant sources. Each plan shall include, at a minimum:

(a) *Drainage.*

(i) A site map indicating an outline of the drainage area of each storm water outfall within the facility boundaries, each existing structural control measure to reduce pollutants in storm water runoff, surface water bodies, locations where significant materials are exposed to precipitation, locations where major spills or leaks identified under paragraph XI.S.3.a.(2)(c) (Spills and Leaks) of this section have occurred, and the locations of the following activities where such activities are exposed to precipitation: aircraft and runway deicing/anti-icing operations; fueling stations; aircraft, ground vehicle and equipment maintenance and/or cleaning areas; storage areas for aircraft, ground vehicles and equipment awaiting maintenance; loading/unloading areas; locations used for the treatment, storage or disposal of wastes, liquid storage tanks, processing areas and storage areas. The map must indicate the outfall locations and the types of discharges contained in the drainage areas of the outfalls.

(ii) For each area of the facility that generates storm water discharges

### *S. Storm Water Discharges Associated With Industrial Activity From Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities*

#### 1. Discharges Covered Under This Section

The requirements listed under this section shall apply to storm water discharges from establishments and/or facilities including airports, air terminals, air carriers, flying fields, and establishments engaged in servicing or maintaining airports and/or aircraft (generally classified under Standard Industrial Classification (SIC) code 45) which have vehicle maintenance shops, material handling facilities, equipment cleaning operations or airport and/or aircraft deicing/anti-icing operations. For the purpose of this permit, 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.

(a) *Coverage.* Only those portions of the facility or establishment 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.

When an industrial facility, described by the above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution

associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow, and an identification of the types of pollutants which are likely to be present in storm water discharges associated with industrial activity. Factors to consider include the toxicity of chemical; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

(iii) The site map developed for the entire airport shall indicate the location of each tenant of the facility that conducts industrial activities as described in Part XI.S.1.a., and incorporate information from the tenants site map (including a description of industrial activities, significant materials exposed, and existing management practices).

(b) *Inventory of Exposed Materials*—An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the date of the submission of a Notice of Intent (NOI) to be covered under this permit and the present; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the date of the submission of a Notice of Intent (NOI) to be covered under this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment of storm water runoff.

(c) *Spills and Leaks*—A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the date of the submission of a Notice of Intent (NOI) to be covered under this permit. Such list shall be updated as appropriate during the term of the permit.

(d) *Sampling Data*—A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.

(e) *Risk Identification and 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); outdoor storage activities; loading and unloading operations; and onsite waste disposal. The description shall specifically list any significant potential source of pollutants at the facility and for each potential source, any pollutant or pollutant parameter [e.g., biochemical oxygen demand (BOD<sub>5</sub>), oil and grease, etc.] of concern shall be identified.

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. Tenants and fixed-base operators who conduct deicing/anti-icing operations shall provide the above information to the airport authority for inclusion in the storm water pollution prevention plan for the entire facility.

(3) *Measures and Controls*. Operators covered by this permit shall develop a description of storm water management controls appropriate for their areas of operation, and implement such controls. The priority in selecting controls shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:

(a) *Good Housekeeping*—Good housekeeping requires the maintenance of areas which may contribute pollutants to storm water discharges in a clean, orderly manner.

(i) *Aircraft, Ground Vehicle and Equipment Maintenance Areas*—Permittees should ensure the maintenance of equipment is conducted in designated areas only and clearly identify these areas on the ground and delineate them on the site map. The plan must describe measures that prevent or minimize the contamination of the storm water runoff from all areas used for aircraft, ground vehicle and equipment maintenance (including the maintenance conducted on the terminal apron and in dedicated hangars). Management practices or equivalent measures such as 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/or collecting the storm water runoff from the maintenance area and providing treatment or recycling should be considered.

(ii) *Aircraft, Ground Vehicle and Equipment Cleaning Areas*—Permittees should 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 plan must describe measures that prevent or minimize the contamination of the storm water runoff from all areas used for aircraft, ground vehicle and equipment cleaning. Management practices such as performing cleaning operations indoors, and/or collecting the storm water runoff from the cleaning area and providing treatment or recycling should be considered.

(iii) *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 plan must describe measures that prevent or minimize the contamination of the storm water runoff from these areas. Management practices such as 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 should be considered.

(iv) *Material Storage Areas*—Storage units 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 storm water, and plainly labeled (e.g., "used oil," "Contaminated Jet A," etc.). The plan must describe measures that prevent or minimize contamination of the storm water runoff from storage areas. Management practices or equivalent measures such as indoor storage of materials, centralized storage areas for waste materials, and/or installation of berming and diking around storage areas should be considered for implementation.

(v) *Airport Fuel System and Fueling Areas*—The plan must describe measures that prevent or minimize the discharge of fuels to the storm sewer resulting from fuel servicing activities or other operations conducted in support of the airport fuel system. Where the discharge of fuels into the storm sewer cannot be prevented, the plan shall indicate measures that will be employed to prevent or minimize the discharge of the contaminated runoff into receiving

surface waters. Management practices or equivalent measures such as implementing spill and overflow practices (e.g., placing sorptive materials beneath aircraft during fueling operations), using dry cleanup methods, and/or collecting the storm water runoff should be considered.

(b) *Preventive Maintenance*—A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, removing debris from catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.

(c) *Spill Prevention and Response Procedures*—Areas where potential spills which can contribute pollutants to storm water discharges can occur, and their accompanying drainage points shall be identified clearly in the storm water pollution prevention plan. The plan shall describe material handling procedures, storage requirements, and consider the use of equipment such as diversion valves. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up should be available to personnel.

(d) *Source Reduction*—Operators who conduct aircraft and/or runway (including taxiways and ramps) deicing/anti-icing operations shall evaluate present operating procedures to consider alternative practices to reduce the overall amount of deicing/anti-icing chemicals used and/or lessen the environmental impact of the pollutant source.

(i) With regard to runway deicing operations, operators, at a minimum, shall evaluate: present application rates to ensure against excessive over application; metered application of deicing chemical; pre-wetting dry chemical constituents prior to application; installation of runway ice detection systems; implementing anti-icing operations as a preventive measure against ice buildup; the use of substitute deicing compounds such as potassium acetate in lieu of ethylene glycol, propylene glycol and/or urea.

(ii) In considering source reduction management practices for aircraft deicing operations, operators, at a minimum, should evaluate current application rates and practices to ensure against excessive over application, and consider pretreating aircraft with hot

water prior to the application of a deicing chemical, thus reducing the overall amount of chemical used per operation.

Source reduction measures that the operator determines to be reasonable and appropriate shall be implemented and maintained. The plan shall provide a narrative explanation of the options considered and the reasoning for whether or not to implement them.

(e) *Management of Runoff*—The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which prevent or reduce source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity [see paragraph XI.S.3.a.(2) (Description of Potential Pollutant Sources)] shall be considered. Appropriate measures or equivalent measures may include: vegetative swales, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices. Measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained.

(i) Operators that conduct aircraft and/or runway deicing/anti-icing operations shall also provide a narrative consideration of management practices to control or manage contaminated runoff from areas where deicing/anti-icing operations occur to reduce the amount of pollutants being discharged from the site. Structural controls such as establishing a centralized aircraft deicing facility, and/or collection of contaminated runoff for treatment or recycling should be considered. Collection and treatment alternatives include, but are not limited to, retention basins, detention basins with metered controlled release, Underground Storage Tanks (USTs) and/or disposal to Publicly Owned Treatment Works (POTW) by way of sanitary sewer or hauling tankers. Runoff management controls that the operator determines to be reasonable and appropriate shall be implemented and maintained. The plan should consider the recovery of deicing/anti-icing materials when these materials are applied during non-precipitation events to prevent these materials from later becoming a source of storm water contamination. The plan

shall provide a narrative explanation of the controls selected and the reasons for their selection.

(f) *Inspections*—In addition to or as part of the comprehensive site evaluation required under paragraph XI.S.3.a.(4) of this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility specified in the plan. The inspection frequency shall be specified in the plan, but at a minimum be conducted once per week during deicing/anti-icing application periods for areas where deicing/anti-icing operations are being conducted. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the pollution prevention team is encouraged.

(g) *Pollution Prevention Training*—Pollution prevention training programs shall be developed to inform management and personnel responsible for implementing activities identified in the storm water pollution prevention plan of the components and goals of the plan. Training should address topics such as spill response, good housekeeping, aircraft and runway deicing/anti-icing procedures, and material management practices. The pollution prevention plan shall identify periodic dates for such training.

(h) *Recordkeeping and Internal Reporting Procedures*—A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan. Inspections and maintenance activities shall be documented and records shall be incorporated into the plan.

(i) *Non-storm Water Discharges.*

(i) The plan shall include a certification that the discharge points have been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with Part VII.G. of this permit. Such certification may not be feasible if the facility operating the storm water discharge associated with industrial activity does not have access to an outfall, manhole, or other point of

access to the ultimate conduit which receives the discharge. In such cases, the source identification section of the storm water pollution prevention plan shall indicate why the certification required by this part was not feasible, along with the identification of potential significant sources of non-storm water at the site. A discharger that is unable to provide the certification required by this paragraph must notify the Director in accordance with paragraph XI.S.3.a.(3)(iii) (below).

(ii) Except for flows from fire fighting activities, other sources of non-storm water listed in Part III.A.2 (Non-storm Water Discharges) of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

(iii) *Failure to Certify*—Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the Director by [Insert date 270 days after permit issuance] or, for facilities which begin to discharge storm water associated with industrial activity after [Insert date 270 days after permit issuance], 180 days after submitting a notice of intent to be covered by this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the United States which are not authorized by an NPDES permit are unlawful, and must be terminated.

(j) *Sediment and Erosion Control*—The plan shall identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

(4) *Comprehensive Site Compliance Evaluation*. Qualified personnel shall conduct site compliance evaluations during periods of deicing/anti-icing operations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:

(a) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the

potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

(b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with paragraph XI.S.3.a.(2) of this section (Description of Potential Pollutant Sources) and pollution prevention measures and controls identified in the plan in accordance with paragraph XI.S.3.a.(3) of this section (Measures and Controls) shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.

(c) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph XI.S.3.a.(4)(b) (above) of the permit shall be made and retained as part of the storm water pollution prevention plan for at least 3 years from the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with Part VII.G. (Signatory Requirements) of this permit.

(d) Where compliance evaluation schedules overlap with inspections required under 3.a.(3)(f), the compliance evaluation may be conducted in place of one such inspection.

#### 4. Numeric Effluent Limitations

There are no additional numeric effluent limitations beyond those in Part V.B of this permit.

#### 5. Monitoring and Reporting Requirements

a. During the period beginning on the effective date and lasting through the

expiration date of this permit, (airports that use more than 100,000 gallons of glycol-based deicing/anti-icing) chemicals and/or 100 tons or more of urea on an average annual basis):

(1) Shall prepare estimates for annual pollutant loadings resulting from discharges of spent deicing/anti-icing chemicals from the entire airport. The loading estimates shall reflect the amounts of deicing/anti-icing chemicals discharged to separate storm sewer systems or surface waters, prior to and after implementation of the facility's storm water pollution prevention plan. Such estimates shall be reviewed by an environmental professional, and certified by such professional. By means of the certification, the environmental professional, having examined the facility's deicing/anti-icing procedures, and proposed control measures described in the storm water pollution prevention plan, shall attest that the loading estimates have been accurately prepared. Certified loading estimates are to be retained at the airport facility and attached to the storm water pollution prevention plan.

b. *Analytical Monitoring Requirements*. During the period beginning [insert date 1 year after permit issuance] lasting through [insert date 2 years after permit issuance] and the period beginning [insert date 3 years after permit issuance] lasting through [insert date 4 years after permit issuance], airports that use more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis shall monitor outfalls from the airport facility that collect runoff from areas where deicing/anti-icing activities occur, except as provided in paragraph 5.a.(3) (Sampling Waiver). Airports which are subject to these monitoring requirements must sample their storm water discharges for the parameters listed in Table S-1 below. Such facilities must report in accordance with 5.b. (Reporting). In addition to the parameters listed in Table S-1 below, the permittee shall provide the date and duration (in hours) of the precipitation event(s) sampled; measurements or estimates (in inches) of the precipitation event that generated the sampled runoff; the duration between the event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) event; and an estimate of the total volume (in gallons) of the discharge sampled.

TABLE S-1.—MONITORING REQUIREMENTS

Pollutants of concern	Monitoring cut-off concentration
Biochemical Oxygen Demand (BOD <sub>5</sub> ).	30 mg/L
Chemical Oxygen Demand (COD).	120 mg/L
Ammonia .....	19 mg/L
pH .....	6.0 to 9 s.u.

For the purposes of today's final permit, the "average annual" usage rate of deicing/anti-icing chemicals is determined by averaging the cumulative amount of deicing/anti-icing chemicals used by all operators at the airport facility in the 3 previous calendar years.

(1) *Monitoring Periods.* Airports where more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea are used on an average annual basis shall monitor outfalls from the facility that collect runoff from areas where deicing/anti-icing activities occur four times per year during the months of December, January, and February when deicing/anti-icing activities are occurring, in the years specified in paragraph b. (above).

(2) *Sample Type.* A minimum of one grab sample and one flow-weighted composite sample shall be taken from each outfall that collects runoff from areas where deicing/anti-icing activities occur. All such samples shall be collected from a discharge resulting from a precipitation event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) precipitation event. The required 72-hour storm event interval is waived where the preceding measurable storm event did not result in a measurable discharge from the facility. The required 72-hour storm event interval may also be waived where the permittee documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted. The grab sample should be taken when pollutant concentrations in the storm water/melt water discharges from deicing/anti-icing operations are expected to be at a maximum. The recommended methodology for performing grab and flow-weighted composite sampling is described at 40 CFR 122.21(g)(7). The permittee has the option to submit site-specific deicing/anti-icing discharge monitoring protocol and methodology, better suited to the particular facility, to the Director for approval.

(3) *Sampling Waiver.*

(a) *Adverse Conditions*—Adverse weather conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as high winds, blizzard conditions, ice storms, etc.) or otherwise make the collection of a sample impracticable (extended frozen conditions, etc.).

(b) *Low Concentration Waiver*—When the average concentration for a parameter calculated from all grab samples collected during the monitoring period [insert date 1 year after permit issuance] lasting through [insert date 2 years after permit issuance] is less than the corresponding value for that parameter listed in Table S-1 under the column Monitoring Cut-off Concentration, a facility may waive monitoring and reporting requirements in the monitoring period beginning [insert date 3 years after permit issuance] lasting through [insert date 4 years after permit issuance]. The facility must submit to the Director, in lieu of the monitoring data, a certification that there has not been a significant change in industrial activity or the pollution prevention measures in area of the facility which drains to the outfall for which sampling was waived.

(c) When a discharger is unable to conduct quarterly chemical storm water sampling at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirements as long as the facility remains inactive and unstaffed. The facility must submit to the Director, in lieu of monitoring data, a certification statement on the DMR stating that the site is inactive and unstaffed so that collecting a sample during a qualifying event is not possible.

(4) *Representative Discharge.* When a facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may test the effluent of one of such outfalls and report that the quantitative data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the

drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan. The permittee shall include the description of the location of the outfalls, explanation of why outfalls are expected to discharge substantially identical effluents, and estimate of the size of the drainage area and runoff coefficient with the Discharge Monitoring Report.

(5) *Alternative Certification.* The Alternative Certification provision discussed in other sections of Part XI is not applicable to discharges included under Part XI.S. (Storm Water Discharges Associated with Industrial Activity from Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing/Anti-icing Areas Located at Air Transportation Facilities).

(c) *Reporting.* Airports identified in Part XI.S.5.6 shall submit monitoring results obtained during the reporting period beginning [insert date 1 year after permit issuance] lasting through [insert date 2 years after permit issuance] on Discharge Monitoring Report Form(s) postmarked no later than the 31st day of March [insert the date 2 years after permit issuance]. Monitoring results obtained during the period beginning [insert date 3 years after permit issuance] lasting through [insert date 4 years after permit issuance] shall be submitted on Discharge Monitoring Report Form(s) postmarked no later than the 31st day of March [insert date 4 years after permit issuance]. A separate Discharge Monitoring Report Form is required for each sampling period. For each outfall, one signed Discharge Monitoring Report form must be submitted to the Director per storm event sampled. Signed copies of Discharge Monitoring Reports, or waiver, shall be submitted to the Director of the NPDES program at the address of the appropriate Regional Office listed in Part VI.G. of the fact sheet.

(1) *Additional Notification.* In addition to filing copies of discharge monitoring reports in accordance with paragraph cb (above), facilities identified in Part XI.S.5.6 that discharge storm water to a large or medium municipal separate storm sewer system (systems serving a population of 100,000 or more) must submit signed copies of discharge monitoring reports to the operator of the municipal separate storm sewer system in accordance with the dates provided in paragraph bc (above).