

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES

IN RE: AAD No. 04-009/WRA

No. RIA-411

CONSENT AGREEMENT

WHEREAS, this Consent Agreement is entered into by and between the Department of Environmental Management (the "DEM") and the Rhode Island Airport Corporation (the "Applicant" or the "RIAC"), which is responsible for the operation of the T.F. Green Airport, (the "Airport"), in Warwick, Rhode Island. This Agreement is entered into in accordance with Chapters 46-12, 42-17.1 and 42-35-9 of the Rhode Island General Laws ("RIGL").

WHEREAS, on November 12, 2004, the DEM issued Rhode Island Pollutant Discharge Elimination System ("RIPDES") permit No. RI0021598 for the Airport ("the 2004 Permit").

WHEREAS, by a letter dated December 13, 2004 the RIAC requested an administrative hearing and moved to stay certain conditions of the 2004 Permit.

WHEREAS, on March 15, 2011 RIAC submitted a conceptual design report (the "CDR") for a glycol impacted storm water and snow melt collection, storage and treatment system.

WHEREAS, in lieu of convening an Administrative Hearing regarding the 2004 Permit conditions and in order to affect a resolution of all disputed issues regarding the above-captioned appeal, the parties agree as follows:

- 1) The Applicant is subject to the provisions of Chapter 46-12 of the RIGL for purposes of this Agreement.
- 2) DEM has jurisdiction over the subject matter of this Agreement and has personal jurisdiction over the Applicant for purposes of this Agreement.
- 3) The provisions of this Agreement shall apply to and be binding upon the Applicant, their agents, servants, employees, successors and assigns, and all persons, firms and corporations acting under, through and for it.
- 4) The compliance with the terms of this Agreement does not relieve the Applicant from compliance with any other applicable laws or regulations administered by DEM or any other governmental entity, or any terms and conditions of the 2004 permit, not specifically addressed herein. This Agreement shall not operate to shield the Applicant from liability arising from future activities, as of the date of execution of this Agreement. Execution of this Agreement is for the sole purpose of resolving AAD case number 04-009/WRA and does not in any way resolve any compliance issues associated with RIPDES Permit No. RI0021598.
- 5) Upon the determination by the Director of the DEM that there is an immediate threat to the public health or the environment, or upon the discovery of new information, the DEM reserves the right to order additional remedial action or other enforcement measures as provided by law or regulations.

- 6) The Director of the DEM may, for good cause shown, defer any of the compliance dates prescribed herein. In the event that the Applicant believes that good cause exists for extending any such dates, the Applicant may submit a written request to DEM for an extension at least seven (7) days prior to such deadline, together with a complete statement of the reasons why the Applicant believes that such an extension is justified. Approval of the extension request shall not be unreasonably withheld. If DEM denies the Applicant's extension request, that decision may be appealed to Superior Court.
- 7) In the event that the Applicant fails to comply with any of the schedules in paragraph 13 of this Agreement it shall pay a stipulated penalty of one thousand dollars (\$1,000) a day for each and every day it remains in violation of the schedule. The payment of a stipulated penalty in accordance with this paragraph shall not preclude DEM from seeking any other appropriate remedy.
- 8) In the event the Applicant fails to comply with any of the interim requirements of paragraphs 10 through 12 of this Agreement as well as those contained in *Attachment A* of this Agreement, it may be subject to an administrative penalty as determined by the DEM in accordance with the Rules and Regulations for Assessment of Administrative Penalties. The payment of an administrative penalty in accordance with this paragraph shall not preclude DEM from seeking any other appropriate remedy.
- 9) This Agreement shall have the full force and effect of a final agency order, shall be deemed a final agency order under the Administrative Procedures Act (RIGL §42-35-15) and shall be fully enforceable in the Superior Court of the State of Rhode Island.
- 10) From the date of execution of this Agreement until the issuance of the new permit, in lieu of Part I.A.5.f. of the 2004 Permit, the Applicant shall comply with the following:
  - a) This Consent Agreement does not authorize the use of any aircraft deicing fluid (ADF) which displays greater toxicity than the products currently used at the Airport. The aquatic toxicity of Type I ADF expressed as propylene glycol shall not be lower than 3,300 mg/l as determined by a 96-hour LC<sub>50</sub> bioassay test.
- 11) From the date of execution of this Agreement until October 13, 2014 in lieu of Part I.B.4.a.(1).ii as specified in the 2004 Permit the Applicant shall comply with the following:
  - a) Seasonal collection program operating schedule including procedures and a schedule to ensure that all collection, handling, and processing equipment are on-site and operational prior to October 15th of each year. The operating schedule shall be submitted annually by November 15th.
- 12) From the date of execution of this Agreement until October 13, 2014, in lieu of the reporting in Part I.B.4.a(3)(iii) and the monitoring in of the 2004 Permit, the Applicant shall complete the following:
  - a) A daily log of collection efforts and glycol monitoring that includes the number of employees dedicated to collection efforts; the times and amounts collected from each dedicated deicing area; the number and type of collection equipment utilized; monitoring results of catch basin inserts samples collected no less frequently than the times glycol is collected prior to opening any catch basin insert; efforts made to monitor and collect runoff prior to collecting at the catch basin inserts; efforts made to monitor and collect runoff in a timely manner as soon as practical to the time of application; identification of any impediments to timely and efficient collection of concentrated runoff prior to dilution, and; observations and/or recommendations for improvements.

- 13) In lieu of compliance with Parts: I.B.4.a.(2)vi, I.B.4.a.(3).vi and Part I.B.4.a.(4)v, and Part I.B.4.a.(4)vi of the 2004 Permit, the Applicant shall:
- a) Comply with the Storm Water Pollution Prevention Plan For T.F. Green Airport. Dated August 11, 2009, as may be amended and approved by DEM (the “SWPPP”).
  - b) By December 12, 2011 the Applicant shall submit a 30% design report for the propylene glycol (PG) collection, storage and treatment system described in the CDR and as modified as noted below. The 30% design report shall be subject to DEM review, modification, and approval and shall include, but not be limited to:
    - i) documentation that demonstrates the design of the terminal area and cargo area pump stations has been optimized and sized to collect 99.9% of all flows above the diversion concentrations (2,950 mg/l PG for the terminal area and 1,000 mg/l PG for the cargo area) based on 62 years of historical data;
    - ii) a description of, the procedures that will be followed to use the upstream on-line analyzer/instrument and the downstream (bypass) flow meter to report when the flow bypassing treatment exceeds the diversion concentration of 2,950 and 1,000 mg/l of PG for the terminal area and cargo areas, respectively, as required by the draft permit in *Attachment B*;
    - iii) a description of the sampling structure downstream of the on-line analyzer/instrument sample collection point in both the cargo and terminal areas that will collect discrete hourly samples (maximum of 24) of the bypass flow from 2 deicing events per month. Each sample analyzed for total organic carbon (TOC) and 3 samples with TOC values greater than the diversion concentration minus 30% will be analyzed for PG. Report results of the real time TOC monitoring upstream versus downstream for all samples, plus PG laboratory analysis to PG estimated based on TOC correlation for 3 samples meeting selection criteria, along with corrective actions taken or to be taken monthly and annually, if necessary.
    - iv) quantify the volume of PG that exceeds the diversion concentration that will bypass the pump stations if the stations are optimized and sized to manage 99.9% of all flows above the diversion concentrations (2,950 mg/l for the terminal area or 1,000 mg/l for the cargo area) based on 62 years of historical data;
    - v) incorporation of quick connects for an emergency generator into the electrical design to safe guard against long-term power outages;
    - vi) description of the pump station PG sampling system, including sizing of the upstream sampling mechanism to maximize the representativeness of samples collected, to maximize the volume of storm water collected above the diversion concentrations and examples of similar sampling methods utilized at other airports;
    - vii) listing of sludge dewatering equipment and sizing information;
    - viii) selection of final storage and treatment system location;
    - ix) providing a dedicated Glycol Recovery Vehicle (“GRV”) for the cargo area.
  - c) By June 12, 2012 the Applicant shall submit to the DEM an application for the issuance of an Order of Approval for the glycol collection, storage and treatment system described in the CDR and as modified by paragraph 13(b) above. At a minimum, the application shall include 90% design which includes plans, technical specifications and design calculations, and the appropriate fee. The Order of Approval application, the SWPPP and other supporting documentation submitted by RIAC shall be considered a RIPDES application. The parties agree that the administrative record includes the RIPDES application and other information set forth in RIPDES Rules 40 and 48. Upon issuance of an Order of Approval, the Applicant shall complete construction and initiate operation of the equipment as required in the Order of Approval.

- d) By October 13, 2014 (which includes two and one-half months for DEM approval of the Order of Approval application), the Applicant shall substantially complete construction and initiate collection operations. Initiation of operation shall include the collection of glycol impacted runoff and snowmelt greater than or equal to the diversion concentrations in place of the wet weather collection activities described in the SWPPP. Subsequent to initiation of operation, RIAC shall not discharge any of the collected glycol impacted runoff to waters of the state. Between October 13, 2014 and March 30, 2015 RIAC may request approval, pursuant to Paragraph 6, to temporarily suspend the collection of glycol and resume wet weather collection in accordance with the SWPPP should storage capacity or ability to meet pretreatment limits established by the Warwick Sewer Authority impact RIAC's ability to store and treat glycol impacted runoff and snowmelt. Any such approval shall not extend beyond April 30, 2015. All required submittals shall be subject to DEM review, modification, and approval. Upon issuance of an Order of Approval, the Applicant shall complete construction and initiate operation of the equipment as required in the Order of Approval
  - e) By February 15, 2015, the Applicant shall submit the results of an assessment of the period between measurement of PG concentrations that exceed the diversion limit for both the terminal and cargo areas and cessation of flow toward the outfall due to pump start-up, dewatering of the pump wet well and dewatering of the outfall line at the point of flow measurement ("the Response Period"). The assessment shall be conducted during start-up and commissioning of the collection and treatment system. The Applicant may request or DEM may initiate permit modification procedures to change the approved Response Period based on the results of this assessment.
  - f) From the date of execution of this Agreement until October 13, 2014, the Applicant shall meet the interim requirements contained in *Attachment A* of this Agreement.
  - g) By March 30, 2015, the Applicant shall meet permit requirements set forth in Attachment B.
  - h) By March 30, 2015, the Applicant shall meet pretreatment limits established by the Warwick Sewer Authority for any discharge of effluent from the glycol deicer treatment system to the Warwick Sewer Authority sewer system.
- 14) Within thirty (30) days from the date of execution of this Agreement, the DEM shall initiate procedures to revoke and reissue RIPDES permit No. RI0021598, which permit is appended as *Attachment B* to this Agreement. RIAC agrees to refrain from contesting the reissuance of the Permit, so long as the schedule and interim limits outlined in paragraphs 10-13 remain in effect. The several airlines, acting through the T.F. Green International Airport Airline-Airport Affairs Committee and as reflected in *Attachment C* to this Agreement, agree to the same limitations on the same terms as are reflected in the preceding sentence. However, if DEM subsequently initiates procedures to reissue the RIPDES permit to contain more stringent requirements and RIAC or one or more of the several airlines appeals said reissuance, DEM will not object to the RIAC or such airline(s) raising any issues that the entity could have raised in an appeal of the 2004 Permit.

- 15) No later than fourteen (14) calendar days following a date identified in any schedule of compliance, the Applicant shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.
- 16) All reports and other documentation that the Applicant is required to submit to the DEM by the terms of this Agreement shall be sent to the Office of Water Resources, RIPDES Program, 235 Promenade Street, Providence, RI 02908-5767. Each document shall be subject to DEM review and approval.
- 17) Upon DEM review of the document, DEM shall provide written notification to the Applicant, either granting approval or stating the deficiencies revealed therein. Within fourteen (14) days (unless a longer time is specified) of receiving a notification of deficiencies, the Applicant shall submit to DEM a revised document consistent with the DEM comments.

18) This Agreement shall be deemed entered as of the date of execution by the

Rhode Island Airport Corporation,

Kevin A. Dillon  
Kevin A, Dillon, President and CEO

KEVIN A. Dillon, President and CEO (Name and title of official)

The individual signing on behalf of the Rhode Island Airport Corporation represents that he/she has the actual authority to enter into this Agreement, and the authority to bind the Rhode Island Airport Corporation to the requirements contained within.

In Warwick, R.I., on the 6<sup>th</sup> day of January 2012, before me personally appeared Kevin A. Dillon (signing party's name), to me known and known by me to be the party executing the foregoing Consent Agreement on behalf of the Rhode Island Airport Corporation and the acknowledged said instrument executed by him/her to be his/her free act and deed.

Ann Urban #59843  
**Notary Public** Ann Urban  
My Commission expires: 1/25/2015

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
FOR THE DIRECTOR

Angelo S. Liberti  
Angelo S. Liberti, PE, Chief  
Surface Water Protection

In Providence, on the 18<sup>th</sup> day of January 2012, before me personally appeared Angelo S. Liberti (signing party's name), to me known and known by me to be the party executing the foregoing Consent Agreement on behalf of the Rhode Island Department of Environmental Management and the acknowledged said instrument executed by him/her to be his/her free act and deed.

Alan V. Gates  
**Notary Public** Notary Public  
My Commission expires: June 9, 2013

## **ATTACHMENT A**

### **INTERIM LIMITS AND CONDITIONS**

Aircraft deicing fluids (ADFs) shall not enter the storm drainage system during dry weather events. Catch basin inserts in each of the storm sewer systems where aircraft deicing occurs shall remain closed during all dry weather deicing events to prevent the discharge of aircraft deicer contaminated runoff from all primary and secondary aircraft deicing areas, as identified in the SWPPP. Procedures shall be implemented to include: monitor and report the times and amounts collected from each dedicated deicing area; the number and type of collection equipment utilized; monitoring results of catch basin inserts samples collected no less frequently than the times glycol is collected prior to opening any catch basin insert; efforts made to monitor and collect runoff prior to collecting at the catch basin inserts; efforts made to monitor and collect runoff in a timely manner as soon as practical to the time of application; identification of any impediments to timely and efficient collection of concentrated runoff prior to dilution, and; observations and/or recommendations for improvements.

Provides dedicated recovery/scavenging equipment for each area where deicing occurs and associated temporary or day storage tanks of adequate capacity located in an area that will allow recovery/scavenging equipment to expeditiously resume collection activities after reaching capacity.

Implement BMPs for the management of glycol contaminated snow or frozen precipitation. BMPs with the goal of reducing the amount of glycol discharged to the storm water system from melting snow contaminated with glycol and increasing the amount of used glycol collected and recycled. Commencing October 13, 2014 RIAC shall collect glycol impacted runoff and snowmelt greater than or equal to 2,950 and 1,000 mg/l of propylene glycol (PG) for the terminal area and cargo areas, respectively in place of the wet weather collection activities described above and in the SWPPP.

Provides secondary containment for all aircraft deicing fluid storage facilities. These facilities shall be designed to reduce or eliminate the release of glycol to the storm sewer system.

Implements BMPs for glycol and pavement deicer (i.e. potassium acetate and sodium formate) storage, transfer, and application practices that include a glycol inventory system and glycol handling procedures for all tenants. The inventory program must include daily record keeping of the amount purchased, amount used, a routine monthly reconciliation and routine visual inspection of storage facilities and handling equipment for drips, leaks, and spills. The BMPs must also include Standard Operating Procedures (SOPs) for reporting and responding to spills that includes basic information to be reported to RIAC and DEM (as necessary) including the amount spilled supported by inventory reconciliation.

***ATTACHMENT B***

**Draft Permit**



**ATTACHMENT C**

Statement of Airline Members of the  
T.F. Green International Airport  
Airline-Airport Affairs Committee

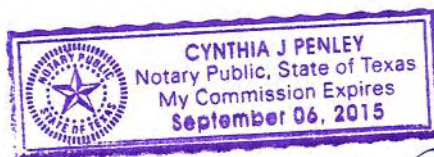
The airline members of the T.F. Green International Airport Airline-Airport Affairs Committee have resolved, pursuant to and consistent with their rules of procedure, that such airlines, and each of them, shall refrain from requesting modifications to the draft permit that is the subject of the CONSENT AGREEMENT dated January 19, 2012 that resolves the matter entitled "In Re: AAD No. 04-009/WRA; No. RIA-411" and agree not to contest said reissuance, so long as the schedule and interim limits outlined in paragraphs 10-13 of said CONSENT AGREEMENT remain in effect. Such airlines, individually and severally, reserve the right to raise any issue that they could have raised in an appeal of the 2004 Permit if DEM subsequently initiates procedures to reissue the RIPDES permit to contain more stringent requirements



Stephen F. Sisneros, Chair,  
T.F. Green International Airport  
Airline-Airport Affairs Committee

1/6/2012

Date



*Cynthia J. Penley* 1/6/12

AUTHORIZATION TO DISCHARGE UNDER THE  
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended,

**Rhode Island Airport Corporation  
2000 Post Road  
Warwick, Rhode Island**

is authorized to discharge from a facility located at

**T. F. Green Airport  
2000 Post Road  
Warwick, Rhode Island**

to receiving waters named

Unnamed Tributaries of Warwick Pond and Buckeye Brook,  
and Tuscatucket Brook

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

This permit shall become effective on \_\_\_\_\_.

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

This permit supersedes the permit issued on November 12, 2004.

This permit consists of 29 pages in Part I including effluent limitations and monitoring requirements, Storm Water Pollution Prevention Plan requirements, implementation schedules and reporting, etc. and 10 pages in Part II including General Conditions.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 2011.

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Angelo S. Liberti, P.E., Chief of Surface Water Protection  
Office of Water Resources  
Rhode Island Department of Environmental Management  
Providence, Rhode Island  
TFGreen-permit 12-22-11.doc

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through permit expiration date, the permittee is authorized to discharge from outfall serial number(s) designated 002A, 003A, 008A, and 010A. Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>					<u>Monitoring Requirement</u>	
	Quantity - specify units		Concentration - specify units			<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Average Monthly</u>	<u>Maximum Daily</u> -	<u>Average Monthly</u> *(Minimum)	<u>Average Weekly</u> *(Average)	<u>Maximum Daily</u> *(Maximum)		
Flow	--- GPD	--- GPD				Quarterly <sup>(6)(7)</sup>	Cont/Estimate <sup>(1)</sup>
pH			(6.5 SU)		(9.0 SU)	Quarterly <sup>(6)(7)</sup>	Measurement
Temperature		--- °F				Quarterly <sup>(6)(7)</sup>	Measurement
Oil & Grease					15 mg/l	Quarterly <sup>(6)(7)</sup>	Grab <sup>(4)(5)</sup>
TSS			--- mg/l		--- mg/l	Quarterly <sup>(6)(7)</sup>	Grab <sup>(4)(5)</sup>
BOD <sub>5</sub>			--- mg/l		--- mg/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>
Propylene Glycol			--- mg/l		--- mg/l	Quarterly <sup>(6)</sup>	Grab/Composite <sup>(2)(3)</sup>
COD			--- mg/l		--- mg/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>
Potassium(K <sup>+</sup> )			--- mg/l		--- mg/l	Quarterly <sup>(6)</sup>	Grab/Composite <sup>(2)(3)</sup>
Sodium(Na <sup>+</sup> )			--- mg/l		--- mg/l	Quarterly <sup>(6)</sup>	Grab/Composite <sup>(2)(3)</sup>
Surfactants			--- ug/l		--- ug/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>
Dissolved Oxygen			--- mg/l		--- mg/l	Quarterly <sup>(6)(7)</sup>	Measurement
Total Organic Carbon (TOC)			--- mg/l		--- mg/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>
Fecal Coliform			--- MPN/100 ml		--- MPN/100 ml	Quarterly <sup>(6)(7)</sup>	Grab <sup>(4)(5)</sup>
Total Aluminum			--- ug/l		--- ug/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>
Total Chromium			--- ug/l		--- ug/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - specify units		Concentration - specify units			Measurement Frequency	Sample Type
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily		
Total Copper			--- ug/l		--- ug/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>
Total Iron			--- mg/l		--- mg/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>
Total Lead			--- ug/l		--- ug/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>
Total Zinc			--- ug/l		--- ug/l	Quarterly <sup>(6)(7)</sup>	Grab/Composite <sup>(2)(3)</sup>

--- signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

<sup>(1)</sup> Average Monthly Flow and Maximum Daily Flow shall be determined by the use of a continuous flow monitor for twelve (12) hours following the initiation of precipitation that generates runoff for Outfalls 002A, 003A, and 008A. Outfall 010A is not equipped with a continuous monitor. Average Monthly Flow shall be calculated and reported for each outfall as the arithmetic average of the flow measurements made during each monitoring event over the duration of the event for Outfalls 002A, 003A, and 008A. Average Monthly flow shall be calculated and reported for Outfall 010A using the average intensity for the duration of the event. Maximum Daily Flow for Outfalls 002A, 003A, and 008A shall be reported for each outfall as the total of the flow measurements made during each monitoring event. Maximum Daily Flow for Outfall 010A shall be calculated using the depth and duration of precipitation as water equivalent for the event.

<sup>(2)</sup> Analytical results reported as Average Monthly must be determined from composite samples taken with a continuous sampler or as a combination of a minimum of twelve-(12) sample aliquots taken during the first twelve-(12) hours following the initiation of precipitation that generates runoff with each aliquot being at least 100 ml and collected at a minimum of hourly intervals. Composite samples can be either flow-weighted or time-weighted. During snow events, the start of precipitation shall be assumed to occur when the total accumulation of snowfall is 0.5 inches in depth. During other freezing (i.e., sleet, freezing rain) or non-freezing (i.e., rain) precipitation events, the start of precipitation shall be assumed to occur when the total accumulation is 0.1 inches in depth.

<sup>(3)</sup> Analytical results reported as Maximum Daily must be the maximum of the composite samples or the maximum of the twelve (12) sample aliquots collected during the twelve (12) hour period for all measured storm events for each reporting quarter in accordance with Note (2) above.

<sup>(4)</sup> Analytical results reported as Average Monthly must be determined from the arithmetic average of three (3) individual hourly grab samples taken during the first three (3) hours following the initiation of precipitation that generates runoff.

<sup>(5)</sup> Analytical results reported as Maximum Daily must consist of a single grab sample collected during the period starting twenty (20) minutes following the initiation of precipitation that generates runoff and commencing no later than three (3) hours following the initiation of precipitation that generates runoff. If the collection of a grab sample during the specified time period could not be achieved, a sample can be taken during the a subsequent period not to exceed six (6) hours following the initiation of precipitation that generates runoff, providing the permittee submit with the monitoring report, a description of why a sample during the specified period could not be collected.

<sup>(6)</sup> Sampling required for Quarter 1 and Quarter 4. One (1) precipitation event shall be monitored for Quarter 1 and one (1) precipitation event shall be monitored for Quarter 4 while aircraft deicing is occurring. Quarter 1 is defined as the period from January 1 through March 31, and Quarter 4 is defined as the period from October 1 through December 31.

<sup>(7)</sup> Sampling required for Quarter 2 and Quarter 3. One (1) precipitation event shall be monitored for Quarter 2 and one (1) precipitation event shall be monitored for Quarter 3. Quarter 2 is defined as the period from April 1 through June 30, and Quarter 3 is defined as the period from July 1 through September 30.

\*Values in parentheses ( ) are to be reported as Minimum/Average/Maximum for the reporting period rather than Average Monthly/Average Weekly/Maximum Daily.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfalls 002A, 003A, 008A, and 010A.

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

2. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) designated 001A, 004A, 005A, 006A, 007A, 009A, 011A, 012A, and 013A. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - specify units		Concentration - specify units			Measurement Frequency <sup>(5)</sup>	Sample Type
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)		
Flow		--- GPD				2/Year <sup>(6)</sup>	Estimate <sup>(4)</sup>
pH			(6.5 SU)		(9.0 SU)	2/Year <sup>(6)</sup>	Measurement
Oil & Grease					15 mg/l	2/Year <sup>(6)</sup>	Grab <sup>(2)(3)</sup>
TSS			--- mg/l		--- mg/l	2/Year <sup>(6)</sup>	Grab/Composite <sup>(1)(3)</sup>
BOD <sub>5</sub>			--- mg/l		--- mg/l	Annual	Grab/Composite <sup>(1)(3)</sup>
Fecal Coliform			--- MPN/100 ml		--- MPN/100 ml	Annual	Grab <sup>(2)(3)</sup>
Potassium (K <sup>+</sup> )			--- mg/l		--- mg/l	Annual	Grab/Composite <sup>(1)(3)</sup>
Sodium (Na <sup>+</sup> )			--- mg/l		--- mg/l	Annual	Grab/Composite <sup>(1)(3)</sup>

---signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

<sup>(1)</sup> Results reported as Average Monthly must be determined from composite samples consisting of a minimum of three (3) sample aliquots taken during the first three (3) hours following the initiation of precipitation with each aliquot being at least 100 ml and collected intervals no less than fifteen (15) minute. Composite samples can be either flow-weighted or time-weighted. During snow events, the start of precipitation shall be assumed to occur when the total accumulation of snowfall is 0.5 inches in depth. During other freezing (i.e., sleet, freezing rain) or non-freezing (i.e., rain) precipitation events, the start of precipitation shall be assumed to occur when the total accumulation is 0.1 inches in depth.

<sup>(2)</sup> Analytical results reported as Average Monthly must be determined from the arithmetic average of three (3) individual hourly grab samples taken during the first three (3) hours following the initiation of precipitation that generates runoff.

<sup>(3)</sup> Analytical results reported as Maximum Daily must consist of a single grab sample collected during the period starting twenty (20) minutes following the initiation of precipitation that generates runoff and commencing no later than three (3) hours following the initiation of precipitation that generates runoff. If the collection of a grab sample during the specified time period could not be achieved, a sample can be taken during the a subsequent period not to exceed six (6) hours following the initiation of precipitation that generates runoff, providing the permittee submit with the monitoring report, a description of why a sample during the specified period could not be collected.

<sup>(4)</sup> Maximum Daily Flow shall be the calculated flow for the sampling event using depth and duration of precipitation as water equivalent for the event..

<sup>(5)</sup> Sampling required for at least one (1) precipitation event during Quarter 1 or Quarter 4 while aircraft deicing is occurring. Quarter 1 is defined as the period from January 1 through March 31, and Quarter 4 is defined as the period from October 1 through December 31.

<sup>(6)</sup> For Flow, pH, Oil & Grease, and TSS one (1) sampling event shall occur during Quarter 1 or Quarter 4 per the requirements of Footnote (5). The second sampling event may occur during a precipitation event during any calendar quarter.

\* Values in parentheses () are to be reported as Minimum/Average/Maximum for the reporting period rather than Average Monthly/Average Weekly/Maximum Daily.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfalls 001A, 004A, 005A, 006A, 007A, 009A, 011A, 012A and 013A.

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

3. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 100A. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - specify units		Concentration - specify units			Measurement Frequency	Sample Type
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)		
Flow	--- GPD <sup>(1)</sup>	--- GPD <sup>(2)</sup>				1/Discharge	Estimate <sup>(3)</sup>
pH			(6.5 SU)		(9.0 SU)	1/Discharge	Measurement
Benzene			5.0 ug/l		5.0 ug/l	1/Discharge	Grab
Toluene			--- ug/l		--- ug/l	1/Discharge	Grab
Ethylbenzene			--- ug/l		--- ug/l	1/Discharge	Grab
Total Xylenes			--- ug/l		--- ug/l	1/Discharge	Grab
Total BTEX			100 ug/l		100 ug/l	1/Discharge	Grab
MTBE			--- ug/l		--- ug/l	1/Discharge	Grab
Total Iron			--- mg/l		--- mg/l	1/Discharge	Grab
Benzo (a) Anthracene			--- ug/l		--- ug/l	1/Discharge	Grab
Benzo (a) Pyrene			--- ug/l		--- ug/l	1/Discharge	Grab
Benzo (b) Fluoranthene			--- ug/l		--- ug/l	1/Discharge	Grab
Benzo (k) Fluoranthene			--- ug/l		--- ug/l	1/Discharge	Grab
Chrysene			--- ug/l		--- ug/l	1/Discharge	Grab
Dibenzo (a,h) Anthracene			--- ug/l		--- ug/l	1/Discharge	Grab
Indeno (1,2,3-cd) Pyrene			--- ug/l		--- ug/l	1/Discharge	Grab

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>					<u>Monitoring Requirement</u>	
	<u>Quantity - specify units</u>		<u>Concentration - specify units</u>			<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Average Monthly</u> *(Minimum)	<u>Average Weekly</u> *(Average)	<u>Maximum Daily</u> *(Maximum)		
Acenaphthene			--- ug/l		--- ug/l	1/Discharge	Grab
Acenaphthylene			--- ug/l		--- ug/l	1/Discharge	Grab
Anthracene			--- ug/l		--- ug/l	1/Discharge	Grab
Benzo (ghi) Perylene			--- ug/l		--- ug/l	1/Discharge	Grab
Fluoranthene			--- ug/l		--- ug/l	1/Discharge	Grab
Fluorene			--- ug/l		--- ug/l	1/Discharge	Grab
Naphthalene			--- ug/l		--- ug/l	1/Discharge	Grab
Phenanthrene			--- ug/l		--- ug/l	1/Discharge	Grab
Pyrene			--- ug/l		--- ug/l	1/Discharge	Grab
Total Petroleum Hydrocarbon			--- mg/l		1.0 mg/l	1/Discharge	Grab

---signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

<sup>(1)</sup>Average Monthly Flow shall be reported as the arithmetic average of the Maximum Daily Flows recorded for each discharge during the quarterly reporting period.

<sup>(2)</sup>Maximum Daily Flow shall be reported as the maximum of the flow recorded for each discharge during the quarterly reporting period

<sup>(3)</sup>Monitor flow and submit a flow log with the monitoring results. The flow log shall include the rate and duration of flow including the time(s) of day when flow commences and ceases. At a minimum, the flow must be measured and reported each time a sample is collected.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: Outfall 100A (the effluent from the AST fuel farm water treatment system).



**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

4. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 200A. The permittee shall provide real time monitoring of concentrations upstream of the diversion point and flow monitoring at a location downstream of the diversion point. All flows that bypass the collection and treatment system and are discharged to waters of the state (i.e. not diverted to storage, treatment and discharge to the sanitary sewer system) will be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Quantity - specify units</u>		<u>Discharge Limitations</u> Concentration - specify units			<u>Monitoring Requirement</u>		
	Average	Maximum	Average	Average	Maximum	Measurement	Sample	
	<u>Monthly</u>	<u>Daily</u>		<u>Weekly</u>		<u>Frequency</u>	<u>Type</u>	
Flow, by-passing treatment <sup>(1)</sup>			---	GPM	0 GPM	Continuous <sup>(4)</sup>	Flow meter	
Bypass Volume <sup>(1)</sup>					---	gallons	Once/Bypass Event <sup>(4)</sup>	Calculated
Number of Bypass Events <sup>(1)</sup>					---		Once/Bypass Event <sup>(4)</sup>	Calculated
Total Organic Carbon (TOC) <sup>(1)</sup>			---	mg/l	---	mg/l	Once/15 min. <sup>(2)(4)</sup>	Online Instrument
Propylene Glycol (PG) <sup>(1)</sup>			---	mg/l	---	mg/l	Once/15 min. <sup>(3)(4)</sup>	Correlation

<sup>(1)</sup> Flow monitoring will occur downstream of the diversion point prior to mixing with other flows and represents flow that is discharging toward the outfall. A Bypass Event is defined as a discharge that begins after the approved Response Period and the calculated PG concentration exceeds 2,950 mg/l and ends when the calculated PG is less than 2950 mg/l or flow ceases. The average flow bypassing treatment, the average calculated PG concentration and Bypass Volume shall be recorded for each Bypass Event. The approved Response Period represents the period between measurement of a calculated PG concentration greater than 2,950 mg/l and cessation of flow toward the outfall due to pump start-up, dewatering of the pump wet well and dewatering of the outfall line at the point of flow measurement. The response period shall be established as ten minutes, and shall be subject to modification based on assessment during the start-up and commissioning of the system as described in Part I.B.4.a.(2). Permittee shall submit a flow log with the monitoring results for any time period where the calculated PG concentration exceeds the diversion limit of 2,950 mg/l, which includes the duration of the bypass flow, the time(s) of day when the bypass flow commences and ceases, the calculated PG concentration and the bypass volume.

<sup>(2)</sup> TOC concentration shall be measured every 15 minutes at a location upstream of the diversion point and reported only for bypass events.

<sup>(3)</sup> The correlation between online Total Organic Carbon (TOC) measurement and propylene glycol (documented in the SWPPP and agreed to by RIDEM) shall be used to estimate the propylene glycol concentration.

<sup>(4)</sup> Sampling only required for Quarter 1 and Quarter 4. Quarter 1 is defined as the period from January 1 through March 31, and Quarter 4 is defined as the period from October 1 through December 31.

The number of bypass events shall be reported as the total number of events during the reporting period rather than Maximum

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

5. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 300A. The permittee shall provide real time monitoring of concentrations upstream of the diversion point and flow monitoring at a location downstream of the diversion point. All flows that bypass the collection and treatment system and are discharged to waters of the state (i.e. not diverted to storage, treatment and discharge to the sanitary sewer system) will be limited and monitored by the permittee as specified below:

Effluent Characteristic	Quantity - specify units		Discharge Limitations Concentration - specify units		Monitoring Requirement	Sample Type
	Average	Maximum	Average	Maximum	Measurement	
	<u>Monthly</u>	<u>Daily</u>		<u>Weekly</u>	<u>Frequency</u>	
Flow, by-passing treatment <sup>(1)</sup>			---	0 GPM	Continuous <sup>(4)</sup>	Flow meter
Bypass Volume <sup>(1)</sup>				---	Once/Bypass Event <sup>(4)</sup>	Calculated
Number of Bypass Events <sup>(1)</sup>				---	Once/Bypass Event <sup>(4)</sup>	Calculated
Total Organic Carbon (TOC) <sup>(1)</sup>			---	---	Once/15 min. <sup>(2)(4)</sup>	Online Instrument
Propylene Glycol (PG) <sup>(1)</sup>			---	---	Once/15 min. <sup>(3)(4)</sup>	Correlation

<sup>(1)</sup> Flow monitoring will occur downstream of the diversion point prior to mixing with other flows and represents flow that is discharging toward the outfall. A Bypass Event is defined as a discharge that begins after the approved Response Period and the calculated PG concentration exceeds 1,000 mg/l and ends when the calculated PG is less than 1,000 mg/L or flow ceases. The average flow bypassing treatment, the average calculated PG concentration and Bypass Volume shall be recorded for each Bypass Event. The approved Response Period represents the period between measurement of a calculated PG concentration greater than 1,000 mg/l and cessation of flow toward the outfall due to pump start-up, dewatering of the pump wet well and dewatering of the outfall line at the point of flow measurement. The response period shall be established as ten minutes, and shall be subject to modification based on assessment during the start-up and commissioning of the system as described in Part I.B.4.a.(2). Permittee shall submit a flow log with the monitoring results for any time period where the calculated PG concentration exceeds the diversion limit of 1,000 mg/l, which includes the duration of the bypass flow, the time(s) of day when the bypass flow commences and ceases, the calculated PG concentration and the bypass volume.

<sup>(2)</sup> TOC concentration shall be measured every 15 minutes at a location upstream of the diversion point and reported only for bypass events.

<sup>(3)</sup> The correlation between online Total Organic Carbon (TOC) measurement and propylene glycol (documented in the SWPPP and agreed to by RIDEM) shall be used to estimate the propylene glycol concentration.

<sup>(4)</sup> Sampling only required for Quarter 1 and Quarter 4. Quarter 1 is defined as the period from January 1 through March 31, and Quarter 4 is defined as the period from October 1 through December 31.

The number of bypass events shall be reported as the total number of events during the reporting period rather than Maximum



6. Special Conditions/Authorizations/Prohibitions:  
This permit also authorizes the discharge of storm water from outfalls 004B, 004C, 006B, 006C, 006D, 007B and 014A. Outfalls 004A, 006A, and 007A are in the same drainage areas with similar industrial activities as outfalls 004B, 004C, 006B, 006C, 006D and 007B, therefore, monitoring from outfalls 004A, 006A, and 007A are considered representative. Outfall 14A is in a drainage area similar to 13A and therefore monitoring from outfall 013A is considered representative.
- a. Non-storm water discharges including those from rubber removal practices 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. In RIPDES Rule 3, the definition of storm water includes storm water runoff, snowmelt runoff, and surface runoff and drainage. All other discharges constitute non-storm water discharges. Discharges of process wastewater or spills in snowmelt runoff are not authorized. Discharges of aircraft deicing/anti-icing fluid (ADF/AAF) and/or pavement deicing materials entrained in storm water constitute storm water discharges for purposes of this permit.
  - b. Unless identified by the permittee or the RI DEM as significant sources of pollutants to waters of the United States, the following non-storm water discharges are authorized under this permit to enter the storm water drainage system: discharges from fire fighting activities; fire hydrant flushings; exterior building and sidewalk washdown that does not use detergents; lawn watering; uncontaminated groundwater; springs; air conditioning condensate; potable waterline testing; and foundation or footing drains where flows are not contaminated with process materials, such as solvents, or contaminated by contact with soils, where spills or leaks of toxic or hazardous materials has occurred. If any of these discharges may reasonably be expected to be present and to be mixed with storm water discharges, they must be specifically identified and addressed in the facility's Storm Water Pollution Prevention Plan (SWPPP).
  - c. This permit does not authorize discharges to the separate storm sewer system or to waters of the State from floor drains and trench drains located inside of buildings and/or hangars.
  - d. This permit does not authorize discharges to the separate storm sewer system or to waters of the State from vehicle, airplane, or equipment washing activities.
  - e. This permit does not authorize the use of any Type I aircraft deicing fluid (ADF) which displays greater toxicity than the products currently used at the Airport. The toxicity of the Type I ADF products expressed as Propylene Glycol shall not be lower than 3,300 mg/l as determined by a 96-h LC<sub>50</sub> bioassay test on *Pimephales promelas* (Fathead minnow).
  - f. The pH of the effluent shall not be less than 6.5 nor greater than 9.0 standard units at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.
  - g. All samples, except those collected at internal Outfalls 200A and 300A, must be collected from a discharge(s) resulting from a representative storm event. A representative storm event is precipitation that (a) occurs at least seventy-two (72) hours from the previous measurable storm event, and (b), is 0.1 inches water equivalent per twenty-four (24) hours in magnitude. The sampling event shall be compared to the average storm event in Rhode Island for both depth and duration.

The average storm event in Rhode Island is 0.7 inches in depth and 12 hours in duration.

- h. In addition to the required sampling results submitted in accordance with Part I.A.1. and I.A.2. of this permit, the permittee must provide the date and duration (hours) of the storm event sampled, the total depth of rainfall (inches), and the total volume of runoff (Ft<sup>3</sup>).
  - i. If the permittee is unable to collect samples due to adverse climatic conditions or lack of a representative storm event during the entire quarterly monitoring period, the permittee must submit, in lieu of sampling data, a description of why samples could not be collected, including available precipitation data for the monitoring period.
  - j. Within one (1) year after the Deicer Fluid Collection and Management system described in Part I.B.4.a.(1) is operational, RIAC will evaluate pavement surface conditions and drainage for potential pooling issues in terminal deicing application areas, and if necessary and feasible, engineered and/or operational controls to mitigate pooling issues will be identified and implemented. However, if ramp construction in the proposed terminal deicing area occurs before the collection system is operational, any necessary and feasible engineered or operational controls will be identified and implemented to coincide with such construction. Within the deadline above, RIAC will provide RI DEM with a report information detailing the evaluation and basis for their determination regarding engineered or operational controls. Pooling for the purposes of this document is defined as the presence of free-standing water one hour or more than the end of the most recent precipitation event at an average depth greater than a half inch and an area greater than 100 square feet.
  - k. The discharges shall not cause visible discoloration of the receiving waters that would impair any usages specifically assigned to the receiving waters.
  - l. The discharges shall not cause odors in the receiving waters to such a degree as to create a nuisance or interfere with the existing or designated uses.
  - m. The discharge shall contain neither a visible oil sheen, foam, nor floating solids at any time.
  - n. The discharges shall not cause or contribute to any stream bank erosion and/or cause or contribute to any soil erosion and sedimentation.
7. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
    - (1) One hundred micrograms per liter (100 ug/l);
    - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitro-phenol; and one milligram per liter (1 mg/l) for antimony;

- (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.
  - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
    - (1) Five hundred micrograms per liter (500 ug/l);
    - (2) One milligram per liter (1 mg/l) for antimony;
    - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.
  - c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant which was not reported in the permit application.
8. Aboveground Storage Tank (AST) Fuel Farm:
  - a. The permittee shall properly operate and maintain the AST fuel farm storm water treatment system. Mechanical failure or breakthrough of the treatment system causing an exceedance of any permit limits shall be immediately reported to the Office of Water Resources.
  - b. The permittee shall treat all stormwater pumped from the containment dike associated with the AST fuel farm with a Granular Activated Carbon treatment system designed to meet the effluent limitations listed in Part I.A.3. The system shall not be modified without written approval from the Office of Water Resources.
  - c. The treatment system shall be inspected at a minimum of once per month to assure the system is operating efficiently and to look for evidence of iron bacteria build-up. As a result of these inspections, appropriate actions shall be taken immediately to resolve any problems discovered during the inspection (i.e., removal of iron scale). Records documenting the inspections and any actions taken shall be retained and made available to the Office of Water Resources upon request.
  - d. Discharge shall cease if any of the contaminants listed in Part I.A.3. are found in the effluent above the detection limits listed in Part I.C. The discharge may recommence once steps have been taken to ensure the limits will not be exceeded again. At a minimum, these steps shall include replacement of the activated carbon filter.
9. This permit serves as the State's Water Quality Certificate for the discharges described herein.

## B. STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. As of the effective date of this permit, RIAC shall implement the Storm Water Pollution Prevention Plan (referred to herein as the "SWPPP" and "the Plan") developed by the permittee dated August 2009. The SWPPP shall be maintained in accordance with good engineering practices and shall identify potential sources of pollutants that may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. The SWPPP shall include a site map that consists of a delineation of the drainage area of each storm water outfall, each existing structural control measure to reduce pollutants in storm water runoff, locations where significant materials are exposed to storm water, locations where significant leaks or spills have occurred, a delineation of all impervious surfaces, all surface water bodies, all separate storm sewers, and the locations of the following activities where such areas are exposed to storm water: fueling stations, vehicle and equipment maintenance and/or cleaning areas, material handling areas, material storage areas, process areas, waste disposal areas, airplane deicing and anti-icing areas, glycol storage, processing and handling areas, and runway deicing and rubber removal. The site map shall also include: all underground injection control (UIC) systems, including systems that are owned or operated by RIAC's tenants; all outfall pipes, including pipes that are owned or operated by RIAC's tenants; all aboveground storage tanks (ASTs) and underground storage tanks (USTs), including tanks that are owned or operated by RIAC's tenants; and all floor drains in each building, including floor drains that are located in buildings that are owned or operated by RIAC's tenants (the location of the discharge point must be provided for each floor drain). The SWPPP shall identify in the site map airplane deicing areas, glycol storage areas, and vehicle washing areas and contain procedures to ensure that these activities occur only in the areas identified in the SWPPP. In addition, the Plan shall describe and ensure the implementation of Best Management Practices (BMPs) that are to be used to reduce or eliminate the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit; provide a description of potential sources which may be 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; and provide a description of storm water management controls appropriate for the facility and implement such controls.
2. The SWPPP shall be signed by the permittee in accordance with RIPDES Rule 12 and retained on-site. The SWPPP shall be made available upon request by the DEM.
3. The Director may notify the permittee at any time that the Plan does not meet one or more of the minimum requirements of the permit. After such notification from the Director, the permittee shall make changes to the Plan and shall submit to the Director a written certification that the requested changes have been made. Unless otherwise provided by the Director, the permittee shall have thirty (30) days after such notification to make the necessary changes. The permittee shall immediately amend the Plan whenever: 1) there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the State; 2) a release of reportable quantities of hazardous substances and oil; or 3) if the SWPPP proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Changes must be noted and then submitted to this Department within thirty (30) days of amending the plan. Amendments to the Plan may be reviewed by the Department in the same manner as specified above.
4. In addition to the requirements in Part I.B.1., the SWPPP, shall contain the following items:
  - a. Deicing Fluid Collection and Management. A description of equipment and operation and management procedures related to deicing fluid usage and

collection. The description of such operations and procedures must address the following minimum components:

- (1) *Collection Program Operating Procedures.* Standard operating procedures and overall glycol recovery goals for the collection program must be detailed. The terminal area and cargo glycol collection system shall be sized to collect 99.9% of all flows above the diversion concentrations (2,950 mg/l for the terminal area and 1,000 mg/l for the cargo area) based on simulations of 62 years of historical data. Operations and equipment for the various components of the collection program that must be addressed include, at a minimum, the following:
  - i. Implementation of the Deicer Management System of real-time monitoring and collection, storage and discharge to the sanitary sewer system of glycol-impacted stormwater; from the terminal deicing area that exceeds 2,950 mg/l propylene glycol (or its surrogate equivalent); and, glycol-impacted stormwater from the cargo deicing area that exceeds 1,000 mg/l propylene glycol (or its surrogate equivalent);
    - a. The diverted glycol-impacted storm water from the terminal and cargo area collection systems will be treated on-site and discharged to the City of Warwick sanitary sewer system.
    - b. The terminal area collection system will be installed with one point of diversion, but be designed to be capable of incorporating two additional diversion points.
    - c. The Deicer Management System will function in concert with the glycol blending facility.
    - d. If the GlyCAST™ model or other simulation is used as a decision making tool to justify structural changes that are subject to approval by the RI DEM after the diversion system is in place, RIAC will calibrate the model with empirical data collected from permit sampling requirements and the operation of the diversion system. RIAC will provide RI DEM with the calibration data.
  - ii. Seasonal collection program operating schedule including procedures and a schedule to ensure that all collection, handling, and processing equipment is on-site and operational prior to October 15<sup>th</sup> of each year. The operating schedule shall be submitted annually with the third quarter Discharge Monitoring Report (DMR) forms due by October 15<sup>th</sup>;
  - iii. Dry weather and wet weather operating procedures;
  - iv. Management and description of glycol storage tanks;
  - v. Recordkeeping forms and procedures;
  - vi. Procedures for calibration and assessment of the on-line TOC sample collection and analysis system associated with the cargo and terminal area deicer fluid collection systems and for determination of the corresponding propylene glycol concentrations. These procedures shall include collection of discrete samples (from both the cargo and terminal area systems) during a deicing event, when flow exists at the downstream sampling location for analysis of TOC and PG.



- vii. Operation of mobile collection units, included a unit dedicated to the Cargo area for dry weather and secondary deicing
  - a. Operation of mobile collection units and glycol recovery vehicles during dry weather and wet weather deicing events when activity within the terminal and cargo area is conducive to GRV use collection (i.e. "low activity wet weather") and at secondary deicing locations.
  - b. Location and operation of catch basin valve inserts;
  - c. Procedures for ensuring that aircraft deicing fluids (ADFs) do not enter the storm drainage system near secondary deicing areas. Catch basin inserts in secondary deicing areas shall remain closed during deicing events. The inserts may be opened once the deicing fluids have been collected.
  - d. Collection equipment for each area where deicing occurs and associated temporary or day storage tanks of adequate capacity located in an area that will allow collection equipment to expeditiously resume collection activities after reaching capacity.
  - e. Training program for secondary deicing and dry weather glycol collection and processing facility personnel
  - f. Procedures for assessment of the period between measurement of PG concentrations that exceeds the diversion limit for both the terminal and cargo areas and cessation of flow toward the outfall due to pump start-up, dewatering of the pump wet well and dewatering of the outfall line at the point of flow measurement. The assessment shall be conducted during start-up and commissioning of the collection and treatment system and the results submitted by February 15, 2015. The permittee may request or DEM may initiate permit modification procedures to change the approved Response Period based on the results of this assessment.
- (2) *Aircraft and Pavement Deicing Material Usage, Storage, and Collection.* The permittee shall implement practices for the management of aircraft and pavement deicing materials. The practices shall be designed to minimize the discharge of aircraft deicing fluids. Practices should include encouraging airlines to consider minimizing fluids applied to aircraft through improved application methods and innovative deicing technologies. Procedures shall include an evaluation of measures to minimize contact with storm water, to minimize the volumes of glycols used (with due consideration of FAA requirements and safety) as well as measures to prevent releases from accidental leaks and spills of deicing materials. The permittee shall develop an airport deicing management plan. This plan shall establish practices and procedures for collection of aircraft deicing fluids as well as pavement deicers. This plan shall be developed in cooperation with tenants and personnel involved with application and collection of deicing materials. With due consideration of safety and other regulatory requirements, such as FAA, the goal of the program shall be to minimize the discharge of deicing materials as follows:
  - i. The permittee shall evaluate ADFs that are new or demonstrate less aquatic toxicity than those currently in use. Annually the permittee must provide information to tenants identifying less toxic

ADFs encouraging tenants to utilize the most environmentally sensitive ADFs.

- ii. The permittee shall evaluate the feasibility of preventative anti-icing techniques. Annually the permittee shall provide information to tenants identifying various practices and encouraging the tenants to implement techniques as practicable.
- iii. The permittee shall evaluate aircraft deicing fluid application practices to identify means to reduce the discharge of aircraft deicing fluid. This shall include an evaluation of technologies such as hot air-low flow application equipment and techniques such as protective enclosures for applicators as well as varying the aircraft deicing fluid concentrations dependent upon ambient conditions. Annually the permittee shall provide information to tenants identifying various practices and encouraging the tenants to implement techniques as practicable.
- iv. Implements BMPs for the management of glycol contaminated snow or frozen precipitation with the goal of reducing the amount of glycol discharged to the storm water system from melting snow contaminated with glycol and increasing the amount of glycol collected. Glycol impacted snow from the terminal and cargo areas will be plowed to areas within the drainage area of the terminal area and cargo glycol collection systems. Discharge from the portable snow melter will be routed to the terminal and cargo diversion structures where runoff greater than or equal to 2,950 and 1,000 mg/l of glycol from the terminal area and cargo areas, respectively will be collected. Collected snowmelt above the diversion concentrations shall be stored, treated and discharged to the sanitary sewer system. Snow melt will not be detained to enable dilution below the propylene glycol limits identified above point. Subject to the requirements above, snow melt/runoff concentrations below the concentrations identified may be discharged to the outfall.
- v. Provides secondary containment for all aircraft deicing fluid storage facilities. These facilities shall be designed to reduce or eliminate the release of glycol to the storm sewer system.
- vi. Implements BMPs for glycol and pavement deicer (i.e. potassium acetate and sodium formate) storage, transfer, and application practices that include a glycol inventory system and glycol handling procedures for all tenants. The inventory program must include daily record keeping of the amount purchased, amount used, a routine monthly reconciliation and routine visual inspection of storage facilities and handling equipment for drips, leaks, and spills. The BMPs must also include Standard Operating Procedures (SOPs) for reporting and responding to spills that includes basic information to be reported to RIAC and DEM (as necessary) including the amount spilled supported by inventory reconciliation.

- vii. Implement an annual pavement sealing program for aircraft deicer application areas in order to enhance capture and conveyance of glycol impacted storm water and reduce potential for vertical migration.
  - viii. Provide a statement indicating that to the best of the permittee's knowledge there are no storm water or non-storm water connections to the terminal drainage system (that is directed to the diversion point or the western oil water separator located in the mid field area) that are not related to the dedicated terminal deicing areas. If any such connections are discovered, the ancillary flows will be rerouted such that they do not contribute to the terminal collection system flow.
- b. Runway Rubber Removal Procedures. This permit does not authorize the dry weather discharge of chemicals or wastewater associated with pavement and runway de-rubberizing. The permittee shall implement BMPs that include but are not limited to; performing all runway de-rubberizing during dry weather, using environmentally sensitive products, temporarily sealing the collection system, and rinsing/washing the product off the paved surfaces directed to grassy areas that infiltrate, or impervious areas where it shall be collected and disposed of prior to the next precipitation event.
- c. Odor and Bacteria Growth Response. The permittee shall develop and implement procedures to identify and respond to occurrences of odors and bacteria growths at outfalls and receiving streams that may be associated with airplane and runway deicing fluids, and amend the SWPPP to include these procedures. At a minimum, the procedures shall include routine observations of storm water outfalls and the receiving streams that receive discharges of storm water associated with deicing activities for the presence of odors and bacteria growths and procedures to respond to the identified odors and bacteria growths.
- (1) Within twenty-four (24) hours of being notified by RIDEM that an odor complaint that violates state water quality standards has been received, the permittee shall perform the following:
    - i. Inspect all outfalls associated with the complaint for dry weather flows and obtain samples of all dry weather discharges and analyze for propylene glycol;
    - ii. Obtain instream samples at the location of the odor complaint and analyze for propylene glycol;
    - iii. Inspect all storm water collection system appurtenances and deicing areas associated with the complaint for evidence of residual glycols and clean as appropriate;
    - iv. Within five (5) days of receipt of laboratory analysis for the abovementioned instream samples, the permittee shall submit a report that describes the following: (a) Dates/times complaints received; (b) Dates/times notified by RIDEM; (c) Summary of recent deicing activities and collection efforts that includes the climatic conditions, amount of deicing chemicals used and recovered, a description of the glycol management BMPs

implemented, locations of observed odors, measured concentrations of glycol in the discharge and the receiving stream, remedial actions to be taken to mitigate future occurrences and recommend additional investigations, controls and amendments to the SWPPP as necessary.

- v. If the odors are evident during a dry weather period or after the deicing season has ended and/or the dry weather discharges from storm water outfalls are found to contain detectable levels of propylene glycol, the recommendations must include a scope of work and implementation schedule to perform additional investigations of the collection system and an investigation of the potential for groundwater to be contaminated with propylene glycol and to what extent it may enter the storm drain system and contribute to the occurrences of nuisance odor conditions. The plan must also identify potential remedies that may be implemented and include an implementation schedule should the investigation indicate that groundwater contaminated with propylene glycol contributes or is responsible for nuisance odor conditions in the outfalls and the receiving waters.

The permittee shall develop and implement a plan to document the occurrence and extent of iron-fixing and/or *Sphaerotilus* bacteria growths at all outfalls that receive discharges of deicing fluids and the downstream receiving waters. The permittee shall perform this investigation annually to determine to what extent the conditions have changed and make recommendations for additional controls and amendments to the SWPPP as necessary should nuisance growths continue to occur. This plan should consider the removal of existing bacteria growth from outfalls and documenting the conditions associated with observed bacteria growths in an effort to understand contributing factors and identify measures to eliminate or reduce bacteria growth.

- d. Pesticide Management. The permittee shall develop and implement BMPs for pesticide management with the goal of reducing or eliminating the concentrations and loads of pesticides in storm water discharges to the receiving waters. Mosquito control products shall be employed in accordance with State requirements by qualified personnel.
- e. Illicit Discharge Detection and Elimination. The permittee shall maintain and continue to implement and enforce a program to detect and eliminate illicit discharges or flows into the Airport's storm drainage system. The program established in the SWPPP shall continue to include the following:
  - (1) The plan must effectively prohibit non-storm water discharges into the system that are not authorized under this permit or the SWPPP. The plan shall include consideration of policies, contractual agreements, or other mechanisms that include sanctions for non-compliance. Procedures shall include inspections, site visits, audits, and notification for referral to DEM for enforcement action.
  - (2) The allowable non-storm water discharges listed in Part I.A.6.c. of the Permit must be addressed if they are identified by the permittee or the Department as being significant contributors of pollutants.

- (3) The SWPPP must contain procedures to identify and locate illicit discharges, the source of the discharge, remove illicit discharges, document actions, and evaluate impact on storm water drainage system subsequent to the removal.
- (4) The permittee must inform employees, businesses, contractors, and tenants of hazards associated with illegal discharges and improper waste disposal including, but not limited to, vehicle wash water and dry weather discharge of deicing chemicals.
- (5) An annual inspection of catch basins and manholes for illicit connections, investigation of complaints, and dry weather field screening for non-storm water flows and field tests of selected parameters as indicators of illicit discharge sources as follows:
  - i. The permittee must keep records of all inspections and corrective actions required and completed.
  - ii. Implementation of procedures for dry weather surveys including field screening for non-storm water flows and field tests of selected parameters and bacteria. Dry weather surveys must be conducted no less than 72 hours after the last rain fall of 0.10 inches or more. At a minimum, all dry weather flows observed during the screening from outfalls must be collected and analyzed for temperature, conductivity, pH, propylene glycol and bacteria. It is recommended that flow measurements be conducted. In addition, visual observations must include but not be limited to the following: odors, sheen, stressed vegetation, coloration/staining, algae growth, sedimentation and/or scouring in the vicinity of the outfalls. If visual observations indicate the presence of illicit discharges additional sampling and analysis for any other parameters that may be useful in the identification of the illicit discharge must be performed as warranted. Dry weather survey results must be summarized in a table and include at a minimum, the following information: location (latitude/longitude), size and type of outfall (e.g. 15" diameter concrete pipe), flow (indicate if flowing or not, include flow rate if determined), sample results, results of other parameters if measured (e.g. temperature, conductivity, and pH), and sample analysis method (e.g. Standard Methods for the Examination of Water and Wastewater). The permittee must perform one (1) survey annually, to be conducted between October 1<sup>st</sup> – March 31<sup>st</sup>.
  - iii. Annually, the permittee shall provide a report certifying that all discharges have been inspected and tested for the presence of non-storm water discharges. If no flow is observed the report shall include the date of outfall inspection and a certification that no flow was observed. If flow is observed the report must include a description of the results of any test for the presence of non-storm water discharges, the methods used, and the date of any testing. The report shall include a plan and schedule for investigating and removing the source of non-storm water flows.
- (6) The Plan must include development and implementation of sanitary waste handling BMPs to reduce the potential that storm water runoff will come in contact with or become contaminated by sanitary wastes associated with handling sanitary wastes from airplanes.

- f. Post-Construction Storm Water Management in New Development and Redevelopment. The permittee shall develop and implement a program to address storm water runoff from new development and redevelopment projects. The plan must address direct discharges of storm water to waters of the State in addition to the discharges to the storm drainage system. The program must ensure that controls are in place to prevent or minimize water quality impacts. The post-construction program must include:
- (1) Development and implementation of strategies which include a combination of structural methods such as detention basins, wet basins, infiltration basins and trenches, dry wells, galleys, vegetated swales and vegetated filter strips and/or non-structural BMPs.
  - (2) Procedures for site plan review to ensure that design of controls to address post-construction runoff are consistent with: The State of Rhode Island Storm Water Design and Installation Manual (as amended).
  - (3) Procedures to ensure adequate and long-term operation and maintenance of BMPs.
  - (4) Procedures to develop and implement strategies to reduce runoff volume which may include minimizing impervious areas such as roads, parking, paving or other surfaces, encouraging infiltration of non-contaminated runoff, preventing channelization, encouraging sheet flow, and where appropriate, preserving, enhancing or establishing buffers along surface water bodies and tributaries.
  - (5) Planned construction activities (such as terminal expansion or future pavement reconstruction/maintenance) to evaluate and if determined necessary for glycol containment, add additional drainage infrastructure to facilitate and/or enhance glycol-impacted storm water capture in the area(s) of construction.
- g. Drainage Master Plan. The Drainage Master Plan dated October, 2008 shall be amended to incorporate the Deicer Fluid Collection and Management system described in Part I.B.4.a.(1). The plan shall provide the permittee with a detailed plan of the existing drainage, topography, and land use which will also be used to assess existing conditions and storm water impacts as well as to determine the impact of future development at the facility.
- h. Water Quality Monitoring. The permittee shall conduct instream water quality monitoring in order to evaluate storm water impacts on the receiving water bodies of the outfalls of the Airport's storm water drainage system. The monitoring shall be conducted annually and be coordinated with an outfall monitoring event during the deicing season as specified in Part I.A.1., I.A.2., I.A.4, and I.A.5. This monitoring will assist in determining the Airport's compliance with state water quality standards. The water quality monitoring plan shall consist of the following conditions:
- (1) *Water Quality Monitoring Events and Locations.* Instream monitoring shall be conducted at the following four (4) receiving water locations: 1. The inlet to Warwick Pond at Lake Shore Drive; 2. The outlet to Warwick Pond; 3. Buckeye Brook at West Shore Road and; 4. Old Mill Creek at Tidewater Drive. The monitoring shall be conducted during a frozen

precipitation event (i.e. snow, sleet, freezing rain) during the deicing season (October 1 – March 31) at the T.F. Green Airport while aircraft deicing is occurring. This monitoring shall be coordinated with storm water outfall sampling as specified in Part I.A.1., I.A.2., I.A.4, and I.A.5 of the permit.

- (2) *Monitoring Parameters, Frequency, and Duration.* Water quality parameters monitored will include pH, temperature, conductivity, dissolved oxygen (DO), running average DO saturation over a 24-hour period, BOD<sub>5</sub>, COD, and propylene glycol. During the collection of samples a visual observation of the receiving waterbody shall be made to account for any discoloration and/or foaming and an observation to account for the presence of any nuisance odors. The frequency of monitoring will occur every four-(4) hours after the onset of the deicing event. The duration of the monitoring shall be approximately 48 hours after the onset of the storm event. The water quality monitoring schedule is summarized in the following table:

Station Type	Locations	Parameters	Approximate Frequency	Duration
<b>Receiving Waters</b>	Warwick Pond (Inlet) Warwick Pond (Outlet) Buckeye Brook (at West Shore Road) Old Mill Creek (at Tidewater Drive)	pH Temperature Conductivity DO DO saturation BOD <sub>5</sub> COD Propylene Glycol	Every 4 hours	2 days

- i. Site Inspection. An annual site inspection must be conducted by appropriate personnel named in the SWPPP to verify that the description of potential pollutant sources is accurate, that the drainage map has been updated or otherwise modified to reflect current conditions, and controls to reduce pollutants in storm water discharges associated with industrial activity identified in the Plan are being implemented and are adequate. A tracking or follow up procedure must be used to ensure that the appropriate action has been taken in response to the inspection. Records documenting significant observations made during the site inspection must be retained as part of the SWPPP for a minimum of five (5) years.
- j. Consistency with Other Plans. Storm water management controls may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Clean Water Act or Best Management Practices (BMP) Programs otherwise required by a RIPDES permit and may incorporate any part of such plans into the SWPPP by reference.

### C. DETECTION LIMITS

The permittee shall assure that all stormwater testing required by this permit, is performed in conformance with the method detection limits listed below **(the EPA method is noted for reference, other EPA approved methods found in 40 CFR Part 136 may be utilized)**. **All sludge testing required by this permit shall be in conformance with the method detection limits found in 40 CFR 503.8.** In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall be submitted along with the monitoring reports.

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed". Documentation supporting this claim shall be submitted along with the monitoring report. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit (MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", less than the reagent water MDL, or less than an effluent or sludge specific MDL. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;
2. results reported as less than the MDL shall be included as values equal to the MDL, and the average shall be reported as "less than" the calculated value.

For compliance purposes, DEM will replace all data reported as less than the MDL with zeroes, provided that DEM determines that all appropriate EPA approved methods were followed. If the re-calculated average exceeds the permit limitation it will be considered a violation.





**OTHER TOXIC POLLUTANTS**  
**Updated: March 28, 2000**

	MDL ug/l (ppb)
Antimony, Total	5.0 - EPA Method 200.9
Arsenic, Total	5.0 - EPA Method 206.9
Beryllium, Total	0.2 - EPA Method 210.2 <sup>1</sup>
Cadmium, Total	1.0 - EPA Method 200.9
Chromium, Total	5.0 - Standard Methods 18 <sup>th</sup> Ed. 3113B
Chromium, Hexavalent***	20.0 - Standard Methods 16 <sup>th</sup> Ed., 312.B
Copper, Total	20.0 - EPA Method 200.7
Lead, Total	3.0 - EPA Method 200.9
Mercury, Total	0.5 - EPA Method 245.1
Nickel, Total	10.0 - EPA Method 200.7
Selenium, Total	5.0 - EPA Method 200.9
Silver, Total	1.0 - Standard Methods 18 <sup>th</sup> Ed. 3113B
Thallium, Total	5.0 - EPA Method 200.9
Zinc, Total	20.0 - EPA Method 200.7
Asbestos	**
Cyanide, Total	10.0 - EPA Method 335.4
Phenols, Total***	50.0 - EPA Method 420.2
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0 - EPA Method 524.2

\* Polynuclear Aromatic Hydrocarbons

\*\* No Rhode Island Department of Environmental Management (RIDEM) MDL

\*\*\* Not a priority pollutant as designated in the 1997 Water Quality Regulations (Table 5)

**NOTE:**

All MDLs have been established in accordance with the definition of "Detection Limits" in the RIDEM Water Quality Regulations for Water Pollution Control. Unless otherwise noted the MDLs have been determined in reagent water by the Rhode Island Department of Health, Division of Laboratories. The MDL for a given analyte may vary with the type of sample. MDLs which are determined in reagent water may be lower than those determined in wastewater due to fewer matrix interferences. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

<sup>1</sup>Method detection limits for these metals analyses were determined by the USEPA. They are not contrived values and should be obtainable with any satisfactory atomic absorption spectrophotometer. To insure valid data the analyst must analyze for matrix interference effects and if detected treat accordingly using either successive dilution matrix modification or method of Standard Additions (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis, spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).

#### D. MONITORING AND REPORTING

1. Monitoring

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in Federal Regulations (40 CFR Part 136).

2. Reporting

a. *Discharge Monitoring Report (DMR) Forms.* Monitoring results obtained during the previous quarter shall be summarized and reported on DMR Forms, postmarked no later than the 15<sup>th</sup> day of the month following the completed reporting period. A copy of the analytical laboratory report, specifying analytical methods used, shall be included with each report submission. Testing shall be reported as follows:

	<u>Quarter Testing To be performed</u>	<u>Report Due No later than</u>	<u>Results Submitted on DMR for</u>
First Quarter:	January 1– March 31	April 15	March
Second Quarter:	April 1– June 30	July 15	June
Third Quarter:	July 1– September 30	October 15	September
Fourth Quarter:	October 1–December 31	January 15	December

The first report is due on April 15, 2005.

b. *End of Season Deicing Summary and Management Report.* An annual report must be prepared which provides a summary and description of glycol usage, collection and management activities during the previous deicing season. Such report shall be submitted annually, no later than June 15 following the deicing season and must include, at a minimum, the following:

- i. Tabular summary of aircraft deicing fluid usage and collection volumes (daily log of volumes of glycol used by each tenant/entity, total glycol used and collected per day that deicing occurs, total glycol used and collected annually, annual % glycol collected, and % glycol collected per storm event);
- ii. Summary of overall seasonal weather conditions;

- iii. A summary of all odor complaints received and any investigations and related amendments to the SWPPP and associated BMPs,
  - iv. Recommendations for usage and collection procedures, and equipment to improve collection efficiencies and overall program management, enhanced BMPs and recommendations to amend the SWPPP. This shall include an assessment of the applicability of source reduction BMPs such as anti-icing techniques and innovative technologies as well as an assessment of practices and procedures employed during the monitoring event to identify necessary improvements for the next deicing season. The recommendations must include a schedule to amend the SWPPP and implement enhanced BMPs subject to the Director's approval.
- c. *Wet Weather Deicing Event Specific Deicing Fluid Collection and Management Report.* For each wet weather event in which aircraft deicing occurs, an event specific report must be prepared. Such report(s) shall be submitted with the DMR Forms as specified in Part I.D, and must include, at a minimum, the following:
- i. Tabular summary of aircraft deicing fluid usage and collection volumes (daily log of volumes of glycol used by each tenant/entity, total glycol used and collected per day that deicing occurs, and % glycol collected per storm event. The report shall identify the amounts used and collected for the terminal and cargo areas and secondary deicing areas;
  - ii. Summary of climatic conditions that includes a discussion of types and timing of storms and resulting effect(s) on collection activities for each individual storm event;
  - iii. A daily log of collection efforts and glycol monitoring that includes the number of employees dedicated to GRV collection efforts, the times and amounts collected from each deicing area, times and locations of collection efforts at each deicing area, efforts made to collect runoff in a timely manner as soon as practical to the time of application and identification of any impediments to timely and efficient collection of concentrated runoff prior to dilution and observations and/or recommendations for improvements.
  - iv. A summary and event specific discussion of outfall and in-stream monitoring results for sampling events conducted under Part I.A.1 and Part I.B.4.h. and calibration sampling conducted under Part I.B.4.a.(1).viii.f ;
  - v. A summary of any odor complaints received during or subsequent to the deicing event and any associated investigations performed by RIAC;
  - vi. Recommendations for usage and collection procedures, equipment to improve collection efficiencies and overall program management, enhanced BMPs and recommendations to amend the SWPPP. This shall include an assessment of the applicability of source reduction BMPs such as anti-icing techniques and innovative technologies as well as an assessment of practices and procedures employed during the monitoring event to identify necessary improvements for the next wet weather deicing event. The permittee shall immediately amend the plan in accordance with Part I.B.3. and submit changes to the plan to the DEM within thirty (30) days of amending the plan.
- d. *Water Quality Monitoring Results.* All results obtained from the instream water quality monitoring in Part I.B.4.h. shall be summarized and reported in a water quality monitoring report postmarked no later than the 15<sup>th</sup> day of the third month following the end of the winter deicing season. The first report shall be due on \_\_\_\_\_.

3. Signed copies of DMR Forms, and all other reports required herein, shall be submitted to:

Annie McFarland  
Electronic Computer Operator  
Office of Water Resources  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908