Stormwater Pollution Prevention Plan (SWPPP)

Prepared for:
Gerald R. Ford International Airport
Gerald R. Ford International Airport Authority
May 2017

Prein&Newhof
Engineers ▪ Surveyors ▪ Planners ▪ Environmental ▪ Laboratory

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Prepared for:
Gerald R. Ford International Airport
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SPILL NOTIFICATION PHONE NUMBERS:

GFIA 24-Hour Airport Communications: (616) 233-6055

Michigan DEQ Spills/Emergency Hotline: (800) 292-4706
National Response Center: (800) 424-8802

Most Current Revision: May 2017

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SWPPP PLAN REVISION HISTORY

Revision No.	Comments/Revision Comments	Date	Cert. Initials
0.0	Revision performed by Environmental Health Resources, Inc.	Sept. 8, 2003	
1.0	Revision by Limno-Tech – Updating SWPPP to reflect new stormwater permit dated December 1, 2005.	July 26, 2006	
1.1	Revision to add Figure 6, modify Table 3-2 and clarify Section 5.2. Changes made to incorporate MDEQ comments on Revision 1.0.	November 17, 2006	
1.2	Updated App. F with 2007-2008 Deicing Management and Monitoring Plan	November 1, 2007	
1.3	Updated Table 3-2.	November 15, 2007	
1.4	Updated Table 3-2, Text revisions/clarifications per Airport response to MDEQ inspection.[1]	July 31, 2008	
1.5	Updated Table 3-2, revised annual DMMP	November 2009	
1.6	Updated Table 3-2	June 2010	
1.7	Updated Table 3-1 and Table 3-2, revised annual DMMP	January 2011	
1.8	Revision by Limno-Tech – Updated SWPPP to reflect new stormwater permit dated January 1, 2011. Updated Table 3-2 and Figures.	April 2011	
1.9	Updated Table 3-2	July 2011	
1.10	Updated Table 3-2	October 2011	
1.11	Updated Table 3-2	January 2012	
1.12	Updated Table 3-2, Section 6 and 9 text revisions/clarifications per Airport response to MDEQ inspection.[2]	March-May 2012	
1.13	Updated Table 3-2 and Section 9 (Corporate Officer)	August 2012	
1.14	In response to Delta Airlines ADF truck spill incident on August 15, 2012, added language to section 5.2 describing additional equipment inspection requirements.	August 2012	
1.15	Updated Table 3-2	January 2013	
1.16	Updated Table 3-2	April 2013	

[1] See MDEQ letter to Airport (March 4, 2008) and Airport response (March 28, 2008) – on file with this document.

[2] See MDEQ letter to Airport (February 17, 2012) and Airport response (March 15, 2012) – on file with this document.

Revision No.	Comments/Revision Comments	Date	Cert. Initials
1.17	Updated Table 3-2	August 2013	
1.18	Updated Tables 3-1 and 3-2	October 2013	
1.19	Updated Table 3-2	January 2014	
1.20	Updated SWPPP to reflect modified NPDES permit dated August 1, 2013. Updated figures to reflect current facility layout, storage, and monitoring/inspection locations. Updated Figures and Tables 3-1 and 3-2. Separated SPCC/PIPP document from SWPPP	Feb-May 2014	
1.21	Updated Table 3-2	August 2014	
1.22	Updated Table 3-2	October 2014	
1.23	Updated Table 3-2, revised annual DMMP	January 2015	
1.24	Updated Tables 3-1 and 3-2	April-May 2015	
1.25	Updated Table 3-2	July 2015	
1.25	Updated Table 3-2	October 2015	
1.26	Updated figures to reflect current facility layout and monitoring/inspection locations. Updated Table 3-2	January 2016	
1.27	Updated Table 3-2	April 2016	
1.28	Updated SWPPP to reflect current facility layout and best management practices. Updated Figures and Tables 3-1 and 3-2	May 2016	
1.29	Updated Table 3-2	July 2016	
1.30	Updated Figure 5	August 2016	
1.31	Updated Table 3-2, revised annual DMMP	October 2016	
1.32	Updated Figure 3 and Table 3-2	January 2017	
1.33	Updated Figure 2, Table 3-1, and Table 3-2	April-May 2017	

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1
Stormwater Pollution Prevention Plan

This Stormwater Pollution Prevention Plan (SWPPP) was prepared for the Gerald R. Ford International Airport (GFIA) in Grand Rapids, Michigan, and has been developed to satisfy the requirements of Part I.A.16 of Michigan's National Pollutant Discharge Elimination System (NPDES) Permit No. MI0055735 (issued December 27, 2010, effective January 1, 2011, modified August 1, 2013) for stormwater discharges associated with industrial activity.

A copy of the permit is included as Appendix A to this plan.

The purpose of the Michigan stormwater permit program is to improve the quality of state surface waters through the reduction of pollutants discharged in stormwater runoff. In keeping with that purpose, this SWPPP has been developed to:

- Identify existing and potential sources of significant materials[3] in GFIA stormwater discharges.
- Describe best management practices (BMPs) to prevent significant materials from being entrained in GFIA stormwater discharges, including the use of both non-structural (preventative inspections, spill response procedures, and employee training programs) and structural controls.

The permit became effective January 1, 2011. In accordance with that permit, this SWPPP has been updated as required and these updates are reflected as shown on the revisions sheet at the front of this plan.

All figures and tables referenced in this SWPPP are included as tabbed sections at the end of this plan.

[3] A significant material is defined by the State of Michigan as any material which could degrade or impair water quality, including, but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials, such as metallic products; hazardous substances designated under Section 101 (14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (See 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111 of the Michigan Act; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with stormwater discharges.

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2 Facility Information

2.1 General Information

Name: Gerald R. Ford International Airport

Facility Address: 5500 44th Street, S.E. Grand Rapids, Michigan 49512

Facility Phone No. 616-233-6000

Facility Contact: Thomas R. Ecklund, Facilities Director

Mailing Address: Same as above

Owner: Gerald R Ford International Airport Authority

Operator: Gerald R. Ford International Airport (GFIAA)

Certified Stormwater Operators:

Roy Hawkins, ASLA Certification No. I-06747

Casey W. Ries, P.E., LEED AP Certification No. I-13314

Ryan Schaner Certification No. I-14559

Standard Industrial Classification Code (SIC) Code: 4581

Permit Information:

Type: Individual

Designated name: Gerald R. Ford International Airport

Permit number: MI0055735

Effective date of coverage: January 1, 2011

Number of stormwater outfalls: 11- See Figure 3

Receiving water(s): Thornapple River and unnamed tributaries to the Thornapple River and Plaster Creek.

A Site Location Map of GFIA and surrounding areas is presented in Figure 1. A map of the airport and tenant facilities located at GFIA is shown in Figure 2. Figure 6 provides additional information required by the Permit.

2.2 Activities Overview

Activities at GFIA have the potential to impact stormwater runoff quality. These activities are summarized as follows:

Summary of Industrial Activities Performed at GFIA

Activities	GFIAA Activity	Tenant(s) Activity
Aircraft Deicing/Anti-Icing		✓
Aircraft Fueling		✓
Aircraft Lavatory Service		✓
Aircraft Maintenance		✓
Aircraft Washing		✓
Chemical Storage (including deicing materials)	✓	✓
Fuel/Petroleum Storage	✓	✓
Pavement Deicing / Anti-Icing	✓	
Vehicle/Equipment Cleaning/Degreasing	✓	✓
Vehicle/Equipment Fueling	✓	✓
Vehicle/Equipment Maintenance	✓	✓

2.3 Site Drainage

Figure 3 presents the layout of stormwater drainage areas on GFIA property. Figure 4 provides a detailed layout of the drainage network currently present on-site. The GFIA site is generally flat topographically, with only slight grading present to allow for site drainage. In general, the drainage pattern can be divided roughly in half, with the dividing line running north and south, splitting the Main Terminal building, as shown on Figure 3.

Stormwater runoff from the western portion of the site is collected in a network of catch basins and storm sewers routed to four drainage ditches generally flowing west. These leave the site through four culverted outfalls running beneath Patterson Avenue (i.e., Outfalls 006 through 009). From this point, they enter unnamed tributaries, which ultimately enter Plaster Creek.

Stormwater runoff from the eastern portion of the site is collected in a network of catch basins, storm sewers and open ditch systems which are routed to a series of outfalls (i.e., Outfalls 001 through 005 and 011). These outfalls discharge either directly into the Thornapple River, or to unnamed tributaries, which enter the Thornapple River. With completion of the long-term stormwater/deicing management system in 2015, flow is now only routed to Outfall 001 during the non-deicing season when conditions allow; otherwise flow is routed to Outfall 011.

Stormwater detention at GFIA consists of three detention basins located upstream of outfalls 011, 004, and 007, respectively and as shown on the figures referenced above. These basins regulate stormwater discharges from the GFIA property during high precipitation events.

Industrial activities with the potential to adversely impact stormwater at GFIA are primarily limited to the drainage areas flowing to outfalls 001/011, 004, and 007. To that end, monitoring is performed at these locations in accordance with GFIA's permit (see Section 7.0).

2.4 GFIA Stormwater Pollution Prevention Team

The personnel and/or departments listed in Table 2-1 are designated as members of the Airport's stormwater pollution prevention team. The team members, their responsibilities, and contact phone

numbers are provided in the table. The stormwater pollution prevention team is responsible for implementing, maintaining, and revising the Plan. This list will continue to be revised as necessary.

3
Source Identification

This section identifies the significant materials and activities present at GFIA that have the potential to enter stormwater. The two primary types of significant materials stored and used at the airport are:

- Deicing and anti-icing activities and material storage; and,
- Fuel dispensing activity and storage areas.

The major significant materials described briefly in Section 3.1. Section 3.2 describes the activities and areas of the airport which where materials are used or stored.

Information in this Section was obtained both from a review of previous source identification studies of GFIA drainage areas, and subsequent comprehensive inspections performed since this plan was developed in 2006.

3.1 Significant Materials

Table 3-1 presents a summary of tenants/entities that are currently known to perform industrial activities at the airport. These tenants/entities store and/or perform activities that use significant materials having the potential to pollute stormwater. Table 3-2 presents an inventory of bulk materials based on tenant reports and airport records.

The following subsections describe the primary types of significant materials that are generally used and stored at the airport.

3.1.1 Aircraft Deicing/Anti-icing Materials

In accordance with FAA requirements, the principal material used by carriers and Fixed Based Operators (FBOs) at GFIA to remove ice and snow from aircraft surfaces is Type I aircraft deicing fluid (ADF). Type I fluid is typically diluted with water and applied hot (~180 ^{o}F), is relatively thin in viscosity, and melts snow and ice from aircraft control surfaces as it is applied. The majority of Type I ADF applied to an aircraft is deposited on areas beneath the aircraft immediately following application. After ice and snow have been removed using Type I ADF, thicker Type IV anti-icing fluid (AAF) is sometimes applied to protect aircraft control surfaces from refreezing. Because it is thicker, Type IV fluid remains on aircraft surfaces until takeoff speed is attained, at which point it shears off. Both Type I and Type IV fluids are characterized by elevated biochemical oxygen demand (BOD) content and have the potential to impact stormwater quality.

Figure 5 illustrates the locations where aircraft deicing/anti-icing materials are stored and used at the airport, including the area where spent fluids are stored prior to being taken off-site. All air carriers and FBOs use propylene glycol-based ADFs and AAFs to facilitate the recycling of collected fluids. Table 3-2 provides a summary of current ADF and AAF storage information. These materials have the potential to come into contact with stormwater primarily during their application to aircraft. These materials are stored either in plastic totes or tanks, or steel aboveground storage tanks (ASTs).

3.1.2 Pavement Deicing and Anti-Icing Materials

Since 2001, an Airport-wide ban on the use of urea has been in place to eliminate elevated ammonia concentrations in stormwater resulting from its use for airfield pavement deicing. The Airport Maintenance Department uses heated sand, liquid potassium acetate, and granular sodium formate to perform any necessary pavement deicing and anti-icing within the AOA. The Maintenance Department also makes sodium formate available at cost to any tenants in need of an approved material for use within the AOA.

In general, the Maintenance Department and tenants apply road salt or calcium chloride as pavement deicers on paved landside areas such as sidewalks and parking lots. Table 3-2 provides a summary of the types and the amounts of pavement deicing materials stored at GFIA. Routine pavement deicing is necessary from a safety standpoint, both for aircraft and vehicles and equipment. However, these materials have the potential to become exposed to stormwater in the event they are applied excessively or stored improperly.

Bulk sand and salt storage are located and managed (prior to application) on the northern portion of the maintenance yard (Figure 2). With the exception of high use instances, storage and management of these materials is under roof. Management of bulk salt is performed in accordance with MDEQ[4] guidance . Furthermore, any runoff from pavement in the area of these roofed storage facilities is directed to an outfall located inside the airfield, effectively preventing the discharge of any materials off-site.

3.1.3 Petroleum Hydrocarbon-Based Materials

Petroleum hydrocarbon-based materials with potential to impact stormwater runoff at GFIA include: Type A jet fuel, diesel fuel, unleaded automobile gasoline, aviation gasoline, motor oils, waste oils, lubricating oils and greases, automatic transmission fluids, and hydraulic fluids.

Table 3-2 summarizes the storage, location and use details regarding petroleum hydrocarbon-based materials at GFIA (refer to Figure 2 for locations referenced in Table).

3.1.4 Other Significant Materials

Significant materials other than deicing or petroleum hydrocarbon-based chemicals stored or used outdoors at GFIA include varying quantities of waste automobile antifreeze, degreaser, road salt, and paints. Ownership, storage, and use details for these materials are presented in Table 3-2.

3.2 Areas of Potential Significant Material Contact

This section of the SWPPP describes the primary activities and areas where significant materials are stored and/or used at GFIA.

3.2.1 Aircraft Deicing/Anti-icing

Each airline, freight carrier or fixed base operator (FBO) is responsible for its own storage and application of ADFs and AAFs. Applications of these fluids to aircraft are performed only in designated deicing areas. Specifically, aircraft deicing is performed only:

- On the apron outside of the main terminal (building 100);
- On the apron adjacent to the cargo tenant operations (building 207); and,
- Small portions of the aprons near the FBOs (buildings 200, 203, 403, 409, and 414).

[4] *Salt and Brine Storage Guidance for Road Agency Maintenance and Other Facilities.* MDEQ, August 2007.

The GFIA Maintenance Department is responsible for managing spent ADFs/AAFs, which are collected from catch basin inserts using mobile collection units (MCUs) following ADF/AAF applications. The spent fluids, also mixed with stormwater, are collected and stored north of building 401, prior to their removal from the site for recycling.

Designated aircraft deicing areas are shown on Figure 5. Typical storage quantities of these materials are presented in Table 3-2, but do vary throughout the year. Storage and usage of ADFs and AAFs at the airport are guided by GFIA's Deicing Management Program Plan which is updated annually and is described further in Section 7.0 and Appendix F of this plan.

Stormwater from these areas discharges to outfalls 001/011 and 007.

3.2.2 Pavement Deicing / Anti-Icing

The GFIA maintenance department is responsible for airside pavement deicing and anti-icing. The primary material used is heated sand, and is supplemented by two primary deicer materials (liquid potassium acetate or granular sodium formate). These materials are stored in the GFIA Maintenance Department area, as shown on Figure 2, and described in Table 3-2. GFIA also makes its sodium formate available to tenants for airside pavement deicing. These activities are performed and managed under the airport's Annual Deicing Management Program Plan, which is summarized in Section 7.0 and included as Appendix F. Airfield pavement deicing and anti-icing activities are performed on the terminal ramp, taxiways, and runways consistent with GFIA's snow removal plan.

Landside pavement deicing materials consist of rock salt premixed with sand (obtained from the Kent County Road Commission). GFIA maintains a salt dome (building 423). Some tenants store bagged calcium chloride for their landside pavement deicing as well.

Stormwater from these activities (both material storage and application) have the potential to be discharged through all outfalls on the airport property. However, outfalls 001/011, 004, and 007 receive the majority of runoff from these areas.

Storage and usage of pavement deicers at the airport are guided by GFIA's Deicing Management Program Plan, which is updated annually, and is described in Section 7.0 of this plan.

3.2.3 Aircraft and Ground Vehicle Fueling

Aircraft fueling is performed primarily on the main terminal ramp, and less frequently on the ramp areas of some tenant hangars, FBOs, and cargo handling areas (Figure 2). All aircraft fueling is performed via mobile refuelers, which are owned, operated, and maintained by several different FBOs and tenants.

Ground vehicle fueling occurs primarily at the locations of dispensers associated with the underground storage tanks (USTs) identified in Table 3-2, or from mobile refuelers.

The primary method of bulk fuel storage at GFIA consists of USTs, some aboveground storage tanks (ASTs), and mobile refuelers. Specifically, bulk fuel storage consists of:

- A fuel farm, containing 13 USTs (Jet fuel or Aviation Gas), ranging between 10,000 and 20,000 gallons in capacity. Five aboveground storage tanks (ASTs) containing jet fuel and aviation gas, are also located in the fuel farm area. Various tenants own and operate the fuel storage in this area.
- Each rental car tenant (buildings 425/426, 427/428, 429/430, 431/432, and 433/434) owns and operates USTs containing unleaded gasoline. These USTs are 15,000 gallons each.
- The GFIA Maintenance Department operates one 300-gallon AST containing unleaded gasoline and two 10,000-gallon USTs containing diesel and unleaded gasoline, respectively (east of building 420).

- The GFIA Air Rescue and Fire Fighting (ARFF) facility operates two 12,000-gallon USTs containing diesel and unleaded gasoline, respectively (building 205).
- Signature Flight Support owns and operates a 1,000 gallon unleaded gasoline AST just north of building 103.
- GFIA owns and operates three diesel ASTs associated with emergency generators for the main terminal, tower, and airfield lighting (located outside buildings 100 and 101). These ASTs range in size from 100 to 1,000 gallons.
- FAA owns and operates three diesel ASTs associated with emergency generators for the air traffic control tower, the airport surveillance radar, and the remote transmitter (located outside buildings 101, 300, and 419, respectively). These ASTs range in size from 500 to 2,000 gallons.
- Seventeen mobile refuelers are owned and operated by several tenants and are located in various portions of the airfield ramps.

Additional detail pertaining to the fuel storage briefly described above is contained in Table 3-2 (refer to Figure 2 for locations referenced in Table).

Drainage from these areas is directed primarily to outfalls 001/011, 004, and 007.

3.2.4 Aircraft, Ground Vehicle, and Equipment Maintenance

Routine aircraft and vehicle maintenance at GFIA is conducted indoors, where floor drains are connected to the sanitary sewer system. These maintenance activities do not present potential for stormwater runoff contamination. Car oil changing and lubes are performed on-site, but all other auto maintenance is not performed on-site.

3.2.5 Aircraft and Ground Vehicle Washing

Aircraft washing operations are minimal at GFIA and, when they do occur, take place indoors per Airport Rules and Regulations (Appendix D). Washing operations at automobile rental agencies take place inside car wash facilities with floor drain connections to the sanitary sewers or a reclaim pit. Furthermore, washing chemicals are stored indoors. As a result, these activities do not present the potential for stormwater contamination.

3.2.6 Aircraft Painting and Stripping Areas

Aircraft stripping or painting operations are not performed at GFIA. There is therefore no potential for material contamination of stormwater due to these operations at the Airport.

3.2.7 Aircraft Lavatory Service Operation

Lavatory servicing of aircraft is performed by commercial airlines at the terminal ramp areas, where aircraft lavatory tanks are discharged to a service tanker truck or trailer. These are emptied directly into the sanitary sewer system. Similar operations are conducted at tenant hangar aprons located within the other drainage areas. In all cases, small spills or leaks are immediately removed from the pavement using cleanup materials stored on the servicing trucks. Aircraft lavatory service operations therefore present little potential for stormwater runoff contamination.

3.2.8 Building and Grounds Maintenance

Minimal herbicide products are applied by the Maintenance Department to select areas at GFIA to inhibiting the growth of weeds. These materials are stored indoors and the manufacturer's instructions are followed during their application. A lawn maintenance contractor performs landside fertilizer and

herbicide applications in accordance with a turf management plan (e.g., contract), but these chemicals are not stored on site.

3.2.9 General Refuse Containers

Municipal refuse is generated at virtually all GFIA and tenant locations. Dumpsters are used for the disposal of common refuse, floor sweepings, and used oil filters (following draining). These dumpsters have minimal potential to impact stormwater. Included in this section is the solid waste compactor located along the western exterior of the terminal, which is observed during daily operations inspections as well as during semi-annual inspections. Any deficiencies (e.g., open lids, overfilling, observed debris outside of the dumpster) are noted for addressing promptly.

3.3 Permit-Required Evaluation of Activities and Areas

As required in Section I.A.16.a.2 of GFIA's permit, several activities have been evaluated to determine their potential to contribute significant materials to runoff. These activities and their evaluation results are summarized in Table 3-3.

Several of these activities do have potential to pollute stormwater runoff (if controls were not used to prevent such an occurrence). However, several of these activities did not have any potential to adversely impact stormwater.

Those activities shown to have potential to pollute stormwater are primarily associated with the materials described in Section 3.1 and their use and storage, as described in Section 3.2. Controls to prevent these materials and activities from adversely impacting stormwater are described in Sections 5 and 6 of this plan.

3.4 Evaluation of Significant Historical Spills and Leaks

Documentation of spills and leaks of polluting materials at GFIA is tracked by the GFIAA. (No reportable spills[5] have occurred at GFIA in the past 3 years.) Documentation records for spills, should they occur, will be documented in Appendix B of this SWPPP. A petroleum spill will be reported to the MDEQ (and other agencies as needed) if:

1. Release to ground is greater than 55 gallons, not detected and recovered within 24 hours, and/or reaches the storm sewer or surface water;
2. Release to surface water is greater than 55 gallons and effective recovery measures are not implemented immediately upon detection;
3. Release to secondary containment is greater than 1,000 gallons, cleanup is not started within 24 hrs, cleanup is not finished within 72 hrs, and/or pollutants reach sewer or state waters.

A copy of a standard spill reporting form and additional information regarding a "release" is also contained in Appendix B.

[5] A reportable spill is defined as that which exceeds a "threshold reporting quantity". This is defined in Rule 324.2002 (g) as any of the following:
(i) For releases of oil to the surface of the ground, 50 pounds.

(ii) For releases of oil to the waters of the state, any quantity that causes unnatural turbidity, color, visible sheens, oil films, foams, solids, or deposits in the receiving waterbody.

3.5 TMDL Requirements

Section I.A.16.a.2.e of the permit requires GFIA to determine whether it "discharges storm water to a water body for which the Department has established a Total Maximum Daily Load (TMDL)," and if it does, to "assess whether the TMDL requirements for the facility's discharge are being met through the existing SWPPP controls or whether additional control measures are necessary."

GFIA discharges stormwater to Plaster Creek, for which the Michigan DEQ has established Total Maximum Daily Loads (TMDL) for E. coli and for biota (for which the pollutant of concern is sedimentation and siltation). GFIA was not identified as a contributing point source discharge contributing to the impairment in either TMDL.

GFIA has assessed its BMPs and other stormwater controls and concurs with the State's TMDLs that GFIA's discharges do not contribute to the impairments associated with the TMDLs. GFIA will continue to visually investigate airport and tenant activities to help ensure that it does not contribute to the Plaster Creek impairment or act inconsistently with the intent of the TMDLs. Additionally, GFIA's existing control measures set forth in this SWPPP have been found to be effective at minimizing potential impacts from E. coli and/or sedimentation.

First, GFIA controls soils associated with active construction and does not maintain soil storage piles or construction staging areas where stormwater runoff would come in contact with sediment. Second, GFIA controls any discharges of sand, which it uses to provide traction on airfield pavement surfaces during the deicing season, through the following controls:

- Catch basins are located away from where sand is used;
- Vegetated areas are maintained around paved surfaces where sand may be used to filter sand from stormwater running across the vegetated areas;
- Street sweeping is conducted in areas where sand is used;
- Unused sand is stored in a covered building; and
- Runoff from pavement near the sand storage facility is directed to an outfall located inside the airfield to minimize the likelihood of offsite discharge of sand.

E. coli may be exposed to stormwater either as a result of sewer line breaks or from spills or leaks of the lavatory carts used to service airplanes. GFIA has not had any problems with minor lavatory cart spills or leaks impacting its stormwater discharges. Further, tenants operating lavatory carts are required to maintain spill kits to ensure that any spills or leaks can be cleaned up immediately. In addition, GFIA conducts illicit discharge monitoring pursuant to the Stormwater Management Plan. E. coli is one of the parameters included in the monitoring effort. To date, grab sample results have not been higher than 200 MPN/100 ml, indicating full compliance with the Water Quality Standard (WQS) instantaneous maximum concentration. GFIA will continue to use its illicit discharge program to continue tracking E. coli levels at the facility, and unless issues arise, GFIA asserts that it is not impacting Plaster Creek's TMDL.

3.6 Summary of Available Sampling Data

Stormwater discharges are sampled and analyzed in accordance with the Airport's NPDES permit. Since 2001, stormwater monitoring data has been submitted to the MDEQ in the form of Annual Deicing Management Program Reports. Copies of these reports, beginning with the 2001-2002 deicing season are kept on file at the airport. Since 2001, GFIA has monitored stormwater discharge quality at three outfalls (outfall numbers 001, 004, and 007). Under the first individual permit (2000-2004), these outfalls were sampled at least three times during the deicing season for $CBOD_5$ and ammonia nitrogen. Under the

second permit (2005-2010), the outfalls were sampled at least three times during the deicing season for $CBOD_5$, ammonia nitrogen (NH_3-N, 001 only), and TOC (monthly, 001 only). Under the current permit (2011-2014), COD was sampled at Outfalls 001, 004, and 007 during four deicing discharge events per season (October 1-May 31). Monthly dry weather monitoring for COD was also conducted at Outfall 001. The current permit was modified in August 2013 to include the long-term stormwater/deicing management system and new Outfall 011. The modified permit contained interim (during construction of the new system) and final (following completion of the new system; mandated to be accomplished by October 1, 2015) requirements for Outfalls 001, 004, 007 and Outfalls 001, 004, 007, and 011, respectively. Interim requirements included $CBOD_5$ monitoring on a monthly basis during the deicing season. Monthly dry weather monitoring for CBOD5 was also required at Outfall 001. Final requirements include $CBOD_5$ and NH_3-N monitoring twice monthly during deicing events from October 1 through May 31 at Outfalls 004, 007, and 011 as well as monthly dry weather monitoring at Outfall 011.

Additional description of GFIA's permit-required monitoring is included in Section 7.0 and Appendix F of this plan.

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4
Non-Stormwater Discharges

To the current knowledge of GFIAA, all existing non-stormwater discharges that occur at GFIA are authorized by NPDES Permit No. MI0055735. Known and likely non-stormwater discharges occurring at GFIA, which are authorized by Part I.A.16.i of the GFIA NPDES permit include the following: infrequent fire-fighting activities, fire hydrant flushing, lawn watering, air conditioning condensate discharges, and foundation or footing drains and pavement underdrains.

A survey was performed with the preparation of the initial SWPPP. There are currently no known illicit connections to the stormwater system.

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5
Preventive Measures and Source Controls, Non-Structural

Non-structural stormwater control measures are intended to minimize the contact between significant materials and stormwater by modifying existing practices and/or procedures. Non-structural controls at GFIA include:

- Routine Maintenance and Inspections;
- Good Housekeeping Practices;
- Significant Material Handling and Storage Requirements;
- Non-structural Soil Erosion and Sedimentation Control Measures; and,
- Employee Training Programs.

The components of these programs are further described below and are focused on ensuring that equipment and materials are stored, maintained, operated, and managed in a way that prevents or minimizes their potential to degrade stormwater quality.

5.1 Routine Maintenance and Inspections

Equipment and operational systems (e.g., mobile refuelers, operational and other heavy equipment, storage vessels, etc.) whose failure or deterioration would have the potential to expose significant materials to stormwater are routinely inspected, tested, and repaired as necessary. This type of maintenance is critical to ensure the proper function of each item at the airport. Likewise, on a monthly basis, GFIAA staff inspects and maintain stormwater management and control devices to ensure their proper function. The airport operations department also performs daily airfield visual inspections.

On a quarterly basis, these inspections (and their follow-up actions) are documented in formal comprehensive visual site inspections. These inspections include a visual inspection of areas where significant materials are stored, handled, or used, as well as visual inspections of the GFIA drainage system (catch basins, oil/water separators, etc.). The inspections consist of verifying material storage areas and equipment, with a focus on confirming that structural and non-structural controls are being used and maintained. The inspections also include the review of routine preventive maintenance reports, good housekeeping inspection reports, and any other applicable paperwork associated with the SWPPP. The inspections also allow for the documentation of recommended follow-up actions to be taken to improve material storage/use areas to prevent or minimize stormwater impacts.

Copies of the monthly outfall and quarterly inspection forms are included in Appendix C. Copies of completed inspection reports are maintained with this Plan for a minimum of three years.

In brief, the comprehensive inspections will document visual observations regarding:

- Stormwater drainage conveyances such as catch basins, drainage ditches, detention basins, culverts, and outfalls, which are inspected for evidence of obstructions and/or the presence of significant materials. Unusual observations are noted and, when necessary, repairs or cleaning are conducted.

- The condition of structural stormwater controls is noted and, when necessary, repairs or cleaning are conducted.
- Storage areas for significant materials are inspected.
- Fuel loading, dispensing, and storage operations at the airport, which are visually inspected for structural integrity; spill potential; proximity to stormwater catch basins; presence of containment, oil/water separators, or sumps; and the presence of spill cleanup kits or materials.
- The use of paints, solvents, lubricants, hydraulic fluids, herbicides, pesticides, or any other material not related to fueling or deicing, which is evaluated during facility inspections for their potential to impact stormwater runoff at Airport facilities.
- Procedures for proper disposal of waste materials are an element of the quarterly Facility Inspections.
- Parking or storage areas for aircraft, ground support vehicles, or related equipment, which are inspected for leaking or pooled materials.

5.1.1 Annual Comprehensive Inspections Report

As required in Part I.A.16.b(3) of the Permit, a report of the comprehensive inspections will be prepared and retained at the airport on an annual basis. The reports will include copies of the completed comprehensive inspections, and will identify any incidents of non-compliance with this plan. In the event there are no documented incidents of non-compliance, the report will contain a certification that the facility is in compliance with this plan.

5.2 Good Housekeeping Practices

Good housekeeping practices are employed at airport and tenant facilities to provide a clean and orderly work environment. This contributes to a reduction in stormwater pollution from activities at the site and the possibility of accidental spills. Good housekeeping practices employed at the airport and tenant facilities include:

- Appropriate measures to prevent discharge of wash waters to storm drains:
  - Washing activities only take place indoors, in an area where the permitted wash water discharges to the POTW.
  - Maintenance activities (with the exception of emergencies) only take place inside enclosed hangars.
- Bulk storage of sand and salt is to be under roof.
- Petroleum products, chemicals, and wastes are to be stored in a neat and orderly fashion. Drip pans and containment pads are utilized for containers in use, when necessary.
- Incidental spills are to be promptly contained and cleaned up (for large uncontrolled spills, notify the Airport Communications, a spill contractor, and the MDEQ if reportable).
- Clean and dry floors are maintained inside airport and tenant buildings.
- Pathways, walkways, and drum/container storage areas are properly maintained such that there is no protrusion into pathways.
- The quantity of materials stored with exposure to stormwater is minimized to the extent possible.
- To the maximum extent possible, materials stored or stockpiled outdoors are covered when not in use.
- Tenants inspect any new or used equipment brought to the airport as soon as possible to minimize the possibility of accidental leaks or spills.

Furthermore, the Airport has developed Rules and Regulations, which require leaseholders to comply with several good housekeeping measures. A copy of GFIA's Rules and Regulations is included in Appendix D.

Routine inspections of these good housekeeping measures are combined with the comprehensive inspections for the preventive maintenance program. Compliance with the practices and any corrective actions are incorporated into the comprehensive inspection report.

5.3 Significant Material Handling and Storage Requirements

Several programs and procedures are in place at GFIA that provide guidance on the proper handling and storage of significant materials at the airport. The following general measures aid in the prevention of significant materials coming in contact with stormwater during material handling or storage.

- Drums are stored indoors when possible and within fixed or portable containment.
- Significant materials stored outside of a facility are grouped in a single location away from areas of heavy vehicular traffic, not in close proximity to storm drain inlet when possible.
- Dumpster lids are kept closed other than when refuse is being placed into the container.
- Soiled rags and used floor-dry type materials are not disposed of in dumpsters.
- Used oil filters are thoroughly drained and placed in a sealed waterproof container (e.g., a bag) prior to being disposed of within a dumpster.
- Spill cleanup kits are placed in accessible locations. Facility personnel are trained in spill cleanup procedures.
- Details of significant spills or leaks are recorded. Tenants are required to submit spill reports to GFIA immediately following development of the report. Each spill record carries information on the type, quantity, and location of the spill and the cleanup procedure instituted. The point of contact for the Team will be coordinated through the Airport Communications.

Additionally, the following subsections briefly describe additional plans, policies, and procedures currently in place at GFIA with respect to the storage and handling of materials at the airport. Spill response and reporting procedures are described in the Airport's PIPP/SPCC plan, as well as in the Airport's policies and procedures.

5.3.1 GFIAA SPCC/PIPP

GFIA also maintains an SPCC/PIPP, which identifies protocols and procedures used for the storage and handling of GFIAA's bulk petroleum and polluting materials[6] . The plan contains specific spill procedures, including:

- A listing of required storage and handling procedures for these materials;
- Spill prevention, response, and reporting procedures; and,
- Spill reporting guidelines.

The PIPP/SPCC plan covers the activities and storage of these materials owned and operated by GFIAA. Likewise, GFIAA requires its tenants to comply with any necessary SPCC and/or PIPP requirements for their individual material storage and operations, when applicable. Specific information can be found in the separate PIPP/SPCC plan by contacting airport staff.

5.3.2 GFIA Policies and Procedures

Pertaining to spills, GFIA Rules and Regulations specifically state "Fuel spills present a hazardous fire and environmental degradation potential and should be handled as such. All fuel spills, regardless of quantity

[6] Polluting materials are defined as salt, oil, and any chemical defined in Rule 9 of the Part 5 Rules (Michigan Administrative Code R 324.2001 to R 324.2009). For GFIAA, these materials are limited to bulk petroleum and road salt.

must be reported to the Department immediately." (Section 9.4 pp. 32). This policy is reinforced in annual stormwater training of staff and tenants with the intention of providing the quickest response possible to spills. GFIAA staff are solely responsible for determining when the airport must notify MDEQ for the airport's reportable spill obligations.

GFIAA is required by the FAA to develop and implement a program for the handling and storage of hazardous substances and materials. This program, originally developed in 1989, was revised and approved by FAA in 1997 and 2010. The program is contained in the document entitled "Kent County Department of Aeronautics, Handling and Storing of Hazardous Substances and Materials, Policy and Procedures, November 4, 2010".

A copy of this document is included in Appendix E. The policy and procedures apply to GFIAA and all tenants at GFIA that operate a fuel storage facility and/or fuel vehicle(s) as further described in GFIA's SPCC/PIPP Plan.

5.4 Non-structural Soil Erosion and Sedimentation Control Measures

Severe weather, airfield operations, and construction operations create the largest potential for soil erosion and pollution of stormwater runoff via sedimentation. Best management practices for sedimentation control at GFIA include the following:

- Planting and maintenance of unpaved Airport areas with grass or other vegetative ground cover to prevent the exposure of soil to the elements.
- Preparation of, and adherence to, a soil erosion and sedimentation control (SESC) permit for construction projects that involve disturbance of greater than one acre at any given time. GFIAA makes its contractors and tenants aware that the permitting agency for State's SESC program is the Kent County Road Commission. GFIAA requires its tenants and contractors to adhere to all applicable state, federal and local regulatory requirements, including SESC.
- Another best management practice used to prevent erosion and damage to the airport drainage system is the NTS detention basin emergency bypass. Under extreme weather conditions, the detention basin can overflow to the emergency bypass to an additional detention basin and Outfall 002. Effluent constituents at the emergency overflow bypass are expected to be identical to those at Outfall 011, only more diluted due to the fact that any discharge would be directly related to near flood type weather circumstances.

Areas with the highest erosion potential at the airport are construction sites, which are required to adhere to SESC requirements, as described above.

5.5 Employee Training Programs

GFIA provides and maintains an annual training program designed to inform all appropriate airport and tenant personnel of the components and goals of the SWPPP. Training focuses on stormwater pollution prevention and covers the elements of this plan. Documentation of training is maintained at GFIA, and a sample copy of the staff training documentation form is included in Appendix C.

In addition to stormwater pollution prevention training, several airport and tenant personnel are involved in other emergency response employee training programs. Additionally, several other airport tenants with fueling or significant oil storage facilities either currently have, or are in the process of developing, their own spill response programs. Stormwater pollution prevention training may be conducted concurrent with other training programs.

Employees will be trained at the time of hire and annually thereafter. Outlines and content of training sessions will be kept on file with this plan.

6
Best Management Practices: Structural Source Controls

The NPDES permit stipulates that where non-structural stormwater control measures are not adequate to control contact between significant materials and stormwater, structural best management practices (BMPs) shall be provided.

6.1 Existing Structural Controls

Several existing structural controls are present at the Airport that significantly reduce exposure of significant materials to stormwater. These measures include:

- ***Roofed/Indoor Storage:*** Where possible, significant materials are stored under roof, thereby eliminating contact with stormwater. In general, all landside pavement deicing materials, virgin and waste oil drums, sand, and sodium formate used for airfield pavement deicing are all stored under roof.
- ***Underground Storage:*** USTs are the primary mode for bulk storage of aircraft and vehicle/equipment fuels at GFIA. While loading and unloading of materials at these locations is handled through non-structural practices and procedures, the nature of underground storage significantly reduces the potential for tank contents to impact stormwater.
- ***Secondary Containment:*** Fixed ASTs containing fuel and/or glycol are equipped with secondary containment, consisting either of double-walled AST construction or constructed diking. Additionally, drum storage of significant materials is required to be on permanent or portable containment.
- ***Catch Basin Inserts:*** GFIAA's Maintenance Department collects spent ADF from aircraft deicing areas. The material is collected with vacuum trucks and is stored north of building 401, as shown on Figure 2. The catch basin inserts, and their operation prevent a significant portion of spent ADF from being discharged from the Airport. These activities are detailed in Section 7.0 of this plan.
- ***Oil Water Separators:*** Signature Flight Support, an FBO at GFIA, operates and maintains a 10,000-gallon oil water separator. The separator is located in the southeastern portion of the Fuel Farm (Figure 2), and receives stormwater runoff from the tanker off-loading pad. Signature is responsible for the operation and maintenance of this structure, which is connected to the Airport's stormwater network.

The rental car fueling facilities (Figure 2, buildings 425, 427, 429, 432, and 434) have 2,000-gallon oil water separators located adjacent to the fuel island. The separators receive stormwater runoff from the fueling area and are connected to the Airport's stormwater network.

- ***Stormwater Detention Areas:*** GFIA has vegetated stormwater detention areas that serve drainage areas 1, 4, 6, and 7. The outlets from the detention areas are configured to restrict flow rates to a nominal storm size, in accordance with design requirements.

- ***Airfield Catch Basin Locations:*** Aside from aircraft parking areas, catch basins are located off pavement surfaces in turf areas. This provides benefit for stormwater quality by utilizing the turf as a filtering agent prior to the stormwater entering the catch basins.
- ***Vegetated Swales:*** Vegetated swales convey overland runoff to outfalls without detention areas. These features provide benefit to stormwater quality by filtering solids from the stormwater.

In 2015 GFIA completed construction of its long-term stormwater/deicing management system. The system includes a detention basin with trash racks, a multiple stage subsurface natural treatment system (NTS), a submerged multi-port diffuser discharge to the Thornapple River (Outfall 011), and an additional off-line detention basin for high flow storm events. The system treats stormwater formerly discharged at Outfall 001 and also includes drainage from deicing areas that previously went to Outfalls 4 and 7. The system was designed to capture runoff from all major deicing areas including air carrier, freight operator, and fixed base operator activities. The system provides significant removal of solids and organic materials including deicers.

6.2 Assessment of BMPs and Significant Materials

With the existing structural and non-structural source controls at GFIA, no significant materials are anticipated to be present in GFIA stormwater beyond those allowed by the GFIA NPDES permit.

GFIA retains the right to evaluate, recommend and implement additional structural source controls in the event existing BMPs are deemed ineffective.

7
Deicing Management and Monitoring

7.1 Deicing Management and Monitoring Plans

Since 2000, GFIA has implemented a formal program to monitor and improve the quality of stormwater discharges from pavement and aircraft deicing and anti-icing activities/areas. In accordance with permit requirements, the program is summarized in the annual Deicing Management & Monitoring Program Plan. These annual plans describe:

1. The monitoring activities GFIA conducts each deicing season to comply with the requirements of the permit (i.e., seasonal and event-specific weather information, deicer usage information, and discharge monitoring activities); and,
2. The BMPs utilized by GFIA to minimize the effects of deicing and anti-icing activities on the quality of stormwater runoff discharged from the airport.

Management of aircraft and pavement deicing and anti-icing fluids is a formal program at GFIA that combines both non-structural (e.g., program development, training, monitoring, recordkeeping, etc.) and structural (e.g., NTS, catch basin inserts, runoff collection and recycling, source reduction, etc.) controls. As such, this program warrants its own section within this SWPPP.

GFIA's current De-Icing Management and Monitoring Plan (October 2016) is included as Appendix F of this plan. Furthermore, the SWPPP will be modified by June 1 of each subsequent year.

7.2 Deicing Discharge Minimization Progress Tracking and Reporting

Results from the activities performed under the Deicing Management Program are summarized annually in an ADF Discharge Minimization Report (formerly, Deicer Progress Report), as required by Section I.A.10 of the permit. These annual reports include:

1. Summaries of the deicing management and monitoring program including:
   - Seasonal aircraft and pavement deicer usage information (total gallons of Type I and Type IV ADF used, total gallons ADF recycled, and percent of total gallons ADF used that was collected and prevented from being discharged); and,
2. Summaries of ADF BMPs including information, measures, and data to demonstrate the extent to which those BMPs are reducing ADF discharges to receiving waters.

The report covers the period of October 1 through May 31 and is due annually to MDEQ on or before September 1. Copies of completed annual reports are also kept on file at GFIA.

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8
Plan Implementation

This SWPPP requires the continued implementation of non-structural and structural controls of significant materials that have the potential for stormwater contamination at GFIA. While implementation of both structural and non-structural controls has occurred, the process remains on-going to ensure that appropriate control measures are consistently being performed.

8.1 Plan Review and Update

The following actions will be taken to keep this SWPPP current:

- GFIA will review the plan annually. Prior to June 1 of each year, GFIA will prepare and maintain written summaries of the review. Based on the review, GFIA will amend the plan as necessary to ensure permit compliance. The review will consider amendments and/or revisions to the SWPPP in light of:
  - Significant changes in the use and/or storage of significant materials;
  - The potential for new construction/developments to impact stormwater; and
  - Changes deemed necessary due to recorded spills within the past year.

All amendments or revisions will include a description of how the Airport will control any new stormwater pollution sources resulting from the above changes. All plan amendments or revisions will be certified by a Certified Stormwater Operator.

8.2 Record Keeping

The permit requires that records of all inspection and maintenance activities, comprehensive site inspections, and incidents such as spills or other discharges be retained for three years. Copies of all log books or other supporting data will be made available to MDEQ or its authorized representative upon request. The following records will be developed and kept on file with the SWPPP as they become available:

- Completed spill reports, listing the date of the spill, the name of the person who discovered the spill, the spill location, the type and volume of material spilled, the cause of the spill, the corrective action taken, and the agencies or persons contacted. A copy of the spill reporting form is contained in Appendix B.
- Completed annual employee training records, listing the time and date of the training session(s), the name and signature of the trainer, the names and signatures of the employees attending the session(s), and a list of topics covered during the session. A copy of the training record form is contained in Appendix C.
- Completed comprehensive site inspections. A sample inspection report form is included in Appendix C.
- Annual Deicing Management Reports.

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9
SWPPP Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(Signature of Certified Stormwater Operator)	**I-06747** (Certification Number)
Roy Hawkins (Printed Name)	(Date)
(Signature of Corporate Officer)	(Date)
James R. Gill, A.A.E., IAP (Printed Name)	President-CEO (Title)
(Signature of Document Preparer)	(Date)
Chris Cieciek. – LimnoTech (Printed Name)	I-06273 (CertificationNumber)

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Figures

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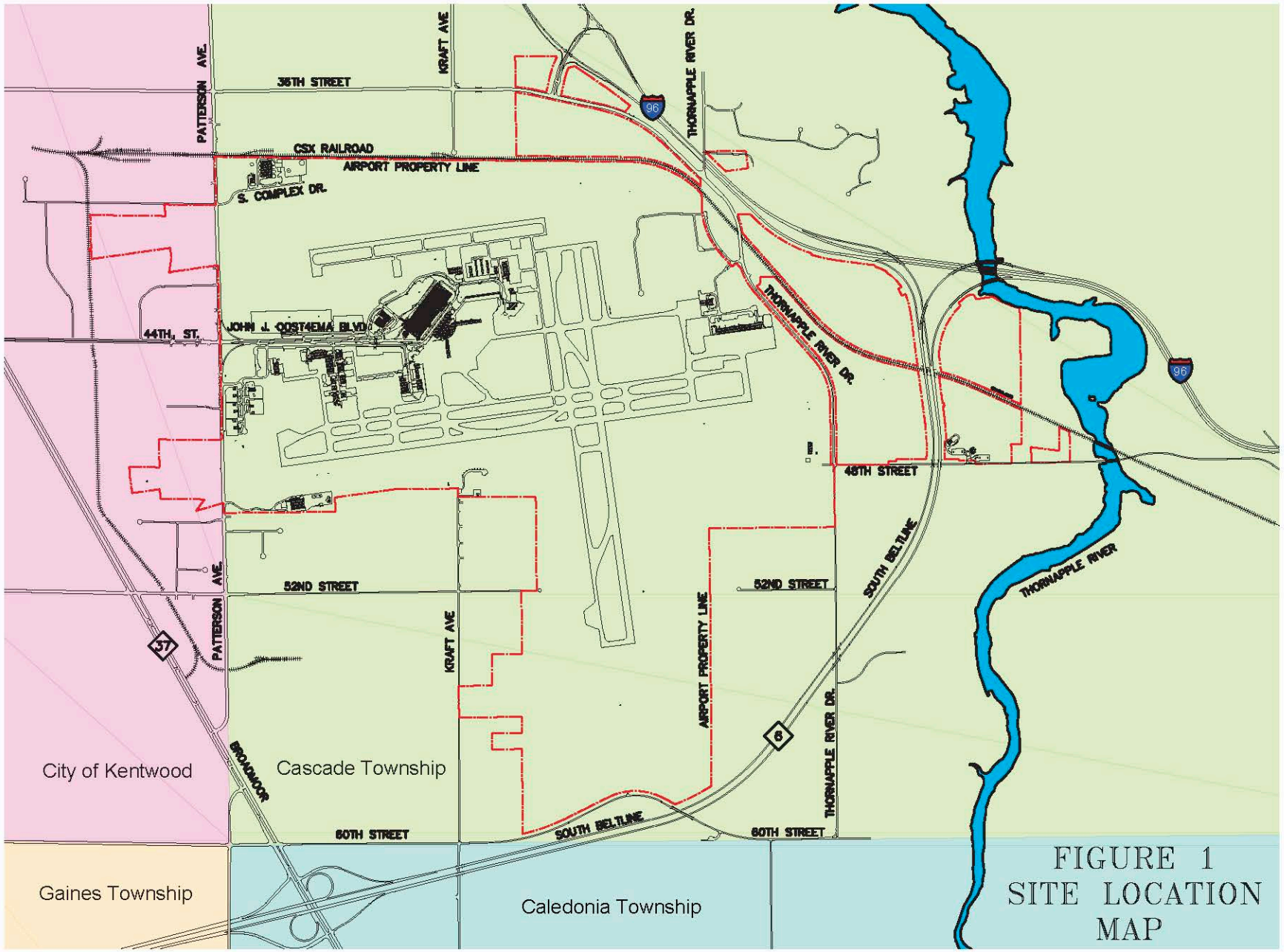

GRAPHIC SCALE

0 1500' 3000' 6000'

SCALE 1"= 3000'

NORTH

GERALD R. FORD International Airport

GERALD R. FORD INTERNATIONAL AIRPORT

5500 44TH ST SE GRAND RAPIDS, MICHIGAN 49512
GERALD R. FORD INTERNATIONAL AIRPORT AUTHORITY

Site-Location-Map.dwg

DATE REVISED	SHT NO
4. 00-00-00	
3. 00-00-00	
2. 06-08-17	
1. 02-06-14	1
	RTS

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AIRPORT ELEVATION	794 MSL
LATITUDE	42°52'55.48"
LONGITUDE	85°31'23.72"
TOWER	135.65
GROUND	121.8
EMERGENCY	121.5
ATIS	127.1
CLEARANCE DELIVERY	119.3
APPROACH & DEPARTURE (NORTH)	124.6
APPROACH & DEPARTURE (SOUTH)	128.4

BUILDING INDEX

(100)	TERMINAL	847.2	(414)	BISSELL	823.3
(101)	FAA–ATCT	926.7	(415)	AMERITECH	779.8
(102)	W. MICH. AVIATION ACADEMY	828.9	(416)	26L LOCALIZER (FAA)	794.4
(103)	PARKING/CAR RENTAL OFFICE	861.0	(418)	8R GLIDE SLOPE (FAA)	798.7
(104)	MAIN CANOPY STRUCTURE	873.0	(419)	REMOTE TRANSMITTER (FAA)	807.4
(105)	GATEWAY CANOPY & BLDS	834.3	(420)	GFIAA – FIELD MAINT. BLDG.	821.0
(107)	KCRDC (S. COMPLEX)	889.8	(421)	GFIAA – FIELD MAINT. BLDG.	804.4
(108)	GFIAA ELEC. VAULT	799.9	(422)	GFIAA – SAND DOME	826.9
(109)	NAT. WEATHER/RADAR	895.7	(423)	GFIAA – SALT DOME	813.6
(110)	GFIAA PARKING BLDG	828.9	(424)	KISD	820.3
(111)	CONTRACT PARKING BLDG	808.9	(425)	ENTERPRISE	797.5
(112)	FAA ELEC. VAULT	799.9	(426)	ENTERPRISE	797.1
(113)	PUMP HOUSE FOR IRRIGA.	815.6	(427)	VANGUARD	798.8
			(428)	VANGUARD	798.6
(200)	SIGNATURE FLIGHT NORTH	818.0	(429)	HERTZ	798.2
(201)	SIGNATURE FLIGHT NORTH	806.4	(430)	HERTZ	799.6
(202)	SIGNATURE FLIGHT NORTH	808.7	(431)	BUDGET	796.5
(203)	SIGNATURE N. (FBO) / N. JET	815.2	(432)	BUDGET	793.4
			(433)	AVIS	797.9
(205)	ARFF STATION	813.2	(434)	AVIS	798.2
(206)	RWY 35 LOCALIZER (FAA)	792.7	(435)	8R MALSR (FAA)	794.4
(207)	FEDEX BLDG./ US CUSTOMS	814.3	(436)	SIGNATURE FLIGHT HANGAR	826.6
(208)	MENLO/UPS	811.0	(437)	SIGNATURE FLIGHT (FBO)	813.10
(209)	SIGNATURE NORTH / N. JET	816.6			
(300)	RADAR (ASR–9)	817.5			
(301)	GFIAA – MAINTENANCE	824.6			
(303)	GFIAA – MAINTENANCE	820.1			
(304)	26L GLIDE SLOPE (FAA)	795.0			
(305)	8R LOCALIZER (FAA)	808.0			
(306)	26L MALSR (FAA)	806.4			
(308)	THORNAPPLE POINTE	755.6			
(309)	THORNAPPLE POINTE	744.3			
(310)	THORNAPPLE POINTE	762.7			
(311)	RWY 35 MALSR (FAA)	785.9			
(312)	RWY 35 GLIDE SLOPE (FAA)	795.4			
(401)	SWISSPORT & GLOBAL(FRT)	819.7			
(402)	GFIAA (AVAILABLE)	818.2			
(403)	SIGNATURE AVIATION (FBO)	820.7			
(405)	ISLAND INVESTMENTS	812.8			
(406)	STEELCASE	825.8			
(407)	AERO–MED	818.0			
(408)	TRESSTAR	826.6			
(409)	ALTICOR	843.2			
(410)	ALTICOR	838.3			
(412)	ALTICOR	815.1			
(413)	L3 COMMUNICATIONS	814.0			

RAMP #1–TRANSIENT PARKING
RAMP #2–BASED AIRCRAFT MO./PKG.
RAMP #3–BASED AIRCRAFT MO./PKG.
RAMP #5–BASED AIRCRAFT
RAMP #9–BASED AIRCRAFT MO./PKG.
RAMP #10–BASED AIRCRAFT MO./PKG.

LEGEND
AIRPORT BOUNDARY FENCE LINE

TRUE NORTH
MAGNETIC NORTH
5° 6' WEST
MARCH 1, 2005
3' W. ANNUAL RATE OF CHANGE

GRAPHIC SCALE
0 250 500 1000 2000
SCALE 1"=1000'

PAVEMENT GROSS LOADINGS (THOUSANDS OF LBS.)

LOCATION	DUAL/TAN	DUAL	SINGLE
Rwys 8R/26L & 17/35, TXYS A, A1, A2, B, B1, thru B5, D, D1, D2, K, K1, L, M, N, P, R (S. of D), V, Y (S. of D), R, Z (S. of D), Hold Aprons 8L, 26R, 17, 35, Terminal & Air Carrier Aprons, FEDEX & UPS Aprons	350	190	--
Txys R (N. of D), Y (N. of D & S. of Perimeter Rd), Ramps 2 & 3	--	175	--
Txys J (From J1 to J4), J1 thru J4, Z (N. of D), Z1, Ramps 9 & 10, Hold Apron 26R	--	100	75
Ramp 1	--	75	52
Ramp 5	--	72	60
Rwy 8L/26R, Txy J (W. of J4), Hold Apron 8L	--	60	52
Txys G & F	--	47	40
KISD Ramp	--	--	45
Txy Y (N. of Perimeter Rd) & Old FSDO Ramp	--	40	30

GERALD R. FORD INTERNATIONAL AIRPORT

5500 44TH STREET, S.E.–GRAND RAPIDS, MICHIGAN 49512

AS CONSTRUCTED PLAN (2017–ACP.dwg)

May 2017

(ROT. 7D10'9")
G:\Facilities Management\Engineering\AUTOCAD\Airport As–Constructed Plans\2017–ACP.dwg

OUTFALL	AIR SIDE DRAINAGE (ACRES)	LAND SIDE DRAINAGE (ACRES)	DRAINAGE AREA (ACRES)
001	115	35	250
002	–	35	35
003	35	285	320
004	320	435	755
005	80	70	150
006	85	60	145
007	100	80	180
008	155	60	215
009	55	85	140
010	–	30	30
011	760	100	860

North

GRAPHIC SCALE

0 1000 2000 3000 4000

LEGEND

- SUBBASIN 1
- SUBBASIN 2
- SUBBASIN 3
- SUBBASIN 4
- SUBBASIN 5
- SUBBASIN 6
- SUBBASIN 7
- SUBBASIN 8
- SUBBASIN 9
- SUBBASIN 10
- SUBBASIN 11
- 00X POINT OF DISCHARGE
- MONITORING LOCATION
- 00 INSPECTION LOCATION
- DTB DETENTION BASIN
- NTS NATURAL TREATMENT SYSTEM
- FF FUEL FARM
- EMERGENCY OVERFLOW BYPASS

Receiving water for outfalls 001 through 005, and 010 through 011 is Thornapple River.

Receiving water for outfalls 006 through 009 is Plaster Creek.

GERALD R. FORD INTERNATIONAL AIRPORT

KENT COUNTY, MICHIGAN

AIRPORT DRAINAGE PLAN

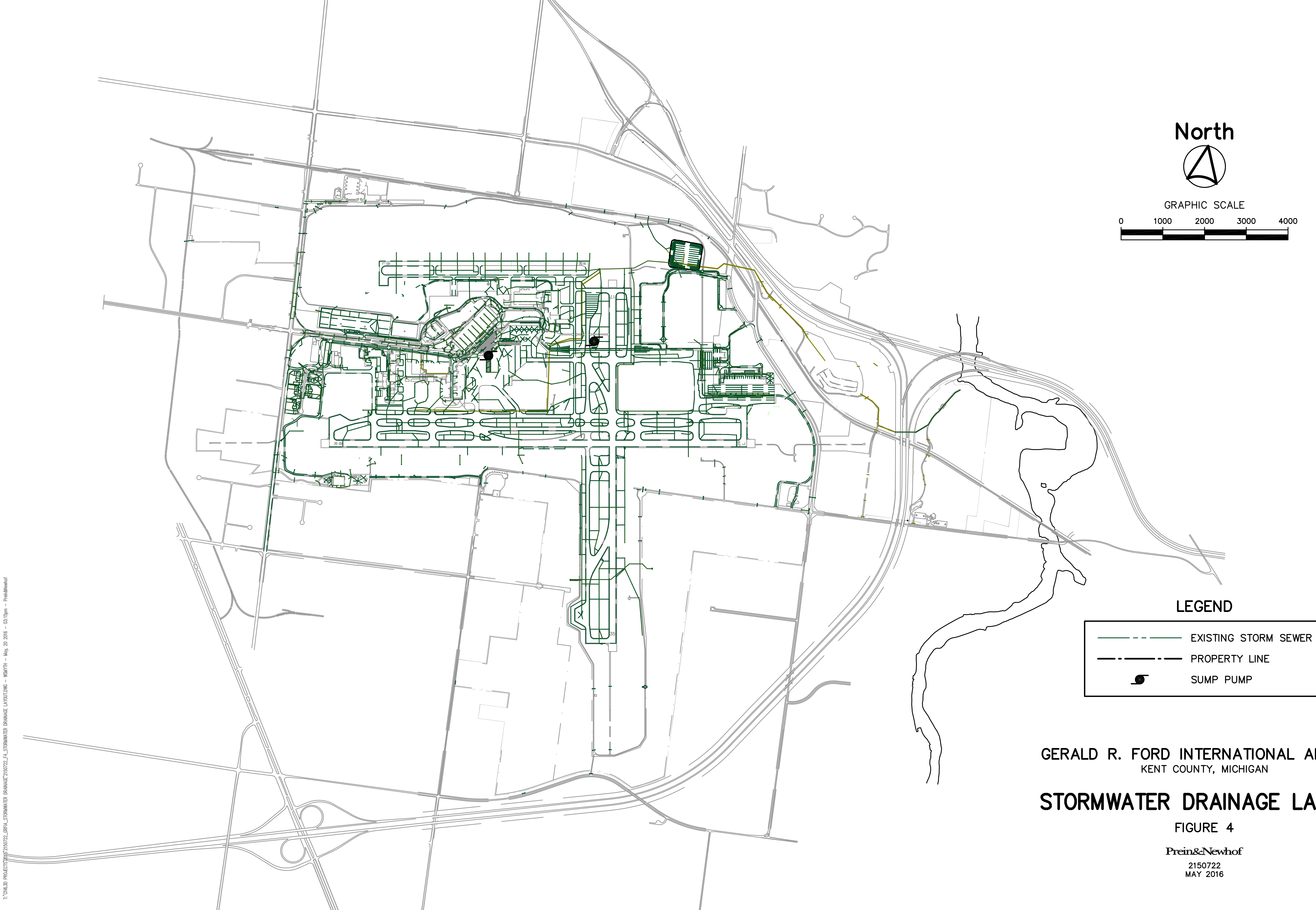
FIGURE 3

Prein&Newhof

2160633

JANUARY 2017

T:\CIVIL\0_PROJECTS\2016\2160633_GRFIA_DRAINAGE PLAN\2160633_GRFIA_AIRPORT DRAINAGE PLAN.DWG – MGM/TH – Feb, 01 2017 – 04:17pm – PreinNewhof

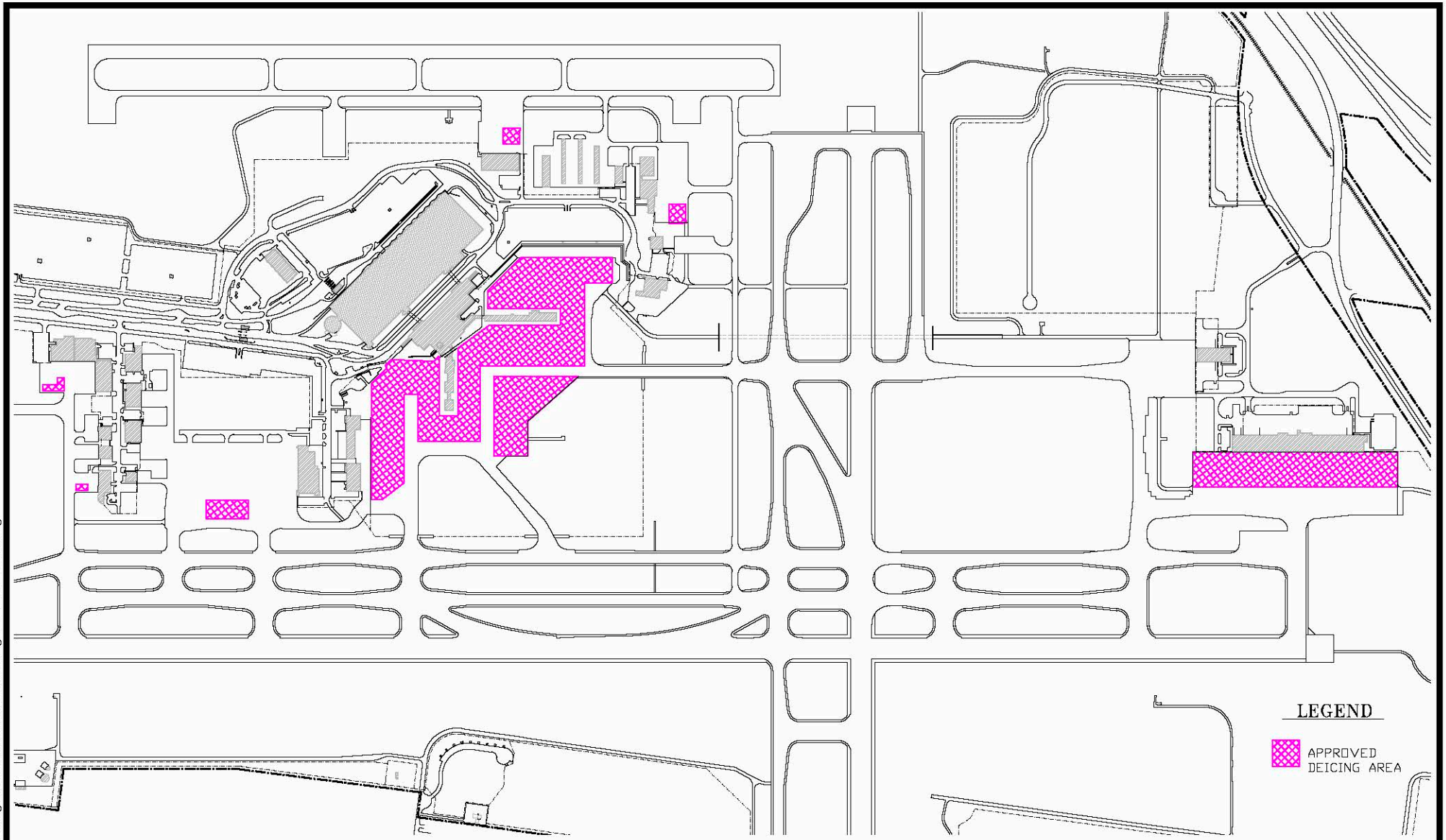


GERALD R. FORD INTERNATIONAL AIRPORT
KENT COUNTY, MICHIGAN

STORMWATER DRAINAGE LAYOUT

FIGURE 4

Prein&Newhof
2150722
MAY 2016



NORTH

DESIGNATED DE-ICING AREAS

GERALD R. FORD International Airport

GERALD R. FORD INTERNATIONAL AIRPORT

5500 44TH ST SE GRAND RAPIDS, MICHIGAN 49512
GERALD R. FORD INTERNATIONAL AIRPORT AUTHORITY

Figure4-1a_2016.dwg

4.	00-00-00	SHT NO 1
3.	00-00-00	
2.	00-00-00	
1.	08-31-16	
DATE REVISED		MEH

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SECONDARY CONTAINMENT LOCATIONS

LOCATION	MATERIAL	OWNER	STORAGE LOCATION	STORAGE CAPACITY	CONTAINMENT METHOD
1	TYPE IV PROPYLENE GLYCOL	MULTIPLE TENANTS	APRON, NORTH OF BLDG 401	8,000 GAL	DOUBLE-WALL TANK
2	DIESEL FUEL	FAA (BACKUP GENERATOR)	BLDG 300	2,000 GAL	DOUBLE-WALL TANK
3	DIESEL FUEL	FAA (BACKUP GENERATOR)	SW, JUST OUTSIDE BLDG 101	1,000 GAL	DOUBLE-WALL TANK
4	DIESEL FUEL	FEDERAL EXPRESS	N. OF BLDG 207	500 GAL	DOUBLE-WALL TANK
4	UNLEADED GASOLINE	FEDERAL EXPRESS	N. OF BLDG 207	500 GAL	DOUBLE-WALL TANK
5	DIESEL FUEL	KCDA (BACKUP GENERATORS)	S. OF BLDG 100	1,329 GAL	DOUBLE-WALL TANK
6	UNLEADED GASOLINE	SIGNATURE AVIATION	N. OF BLDG 403	1,000 GAL	DOUBLE-WALL TANK
7	AV GAS	SIGNATURE AVIATION	FUEL FARM	10,500 GAL	CONCRETE DIKING
7	JET FUEL	SIGNATURE AVIATION	FUEL FARM	15,500 GAL	CONCRETE DIKING
8	UNLEADED GASOLINE	KCDA	E. OF BLDG 420	300 GAL	DOUBLE-WALL TANK
9	JET FUEL	STEELCASE (TWO TANKS)	FUEL FARM	30,000 GAL	DOUBLE-WALL TANKS
10	DIESEL FUEL	FAA (BACKUP GENERATOR)	BLDG 419	500 GAL	DOUBLE-WALL TANK

NOTES :

A. SECONDARY CONTAINMENT LOCATIONS FOR ABOVE GROUND TANKS SHOWN. DRUMS ARE ENCOURAGED TO BE STORED UNDER ROOF AND ON SPILL PALLETS. WHEN STORED OUTDOORS, DRUMS ARE REQUIRED TO BE ON PORTABLE SECONDARY CONTAINMENT. LOCATIONS AND QUANTITIES MAY VARY. (REFER TO TABLE 3-2 FOR ADDITIONAL INFORMATION).

B. EXPOSED AND/OR ERODIBLE SOILS: THE AIRPORT MAINTAINS VEGETATION ON ALL NON-PAVED AREAS. CURRENT CONSTRUCTION AREAS ARE NOT SHOWN AS THEY ARE SUBJECT TO CHANGE. WHEN PRESENT, ERODIBLE SOILS ARE MAINTAINED UNDER SEPARATE CONSTRUCTION STORMWATER OR SESC PERMITS.

North

GRAPHIC SCALE

0 1000 2000 3000 4000

LEGEND

- (1) SECONDARY CONTAINMENT STRUCTURES
- AREA OF VEGETATION
- PAVEMENT AREA
- AREA OF EXPOSED AND/OR ERODIBLE SOILS

GERALD R. FORD INTERNATIONAL AIRPORT
KENT COUNTY, MICHIGAN

ADDITIONAL SWPPP INFORMATION

FIGURE 6

Prein&Newhof
2150722
JUNE 2016

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Tables

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Table 2-1
Stormwater Pollution Prevention Team
Gerald R. Ford International Airport
Grand Rapids, Michigan

Signature Authority:	Thomas Ecklund, P.E.
Title:	Facilities Director
Phone Number:	616-233-6041
Plan Supervisor:	Roy Hawkins
Title:	Planning Engineer
Phone Number:	616-233-6022
Responsibilities:	Coordination of SWPPP Implementation, Including: Coordinating Inspections Recordkeeping Identifying facility changes Contacting Outside agencies if needed Following up with tenants as necessary
Team Member:	Bruce Applebach
Title:	Airport Operations Manager
Phone Number:	616-233-6035
Responsibilities:	Coordinating and Implementing routine inspections Performing Comprehensive Semi-Annual Inspections
Team Member:	Airport Communications Center
Title:	N/A
Phone Number:	616-233-6055
Responsibilities:	Contacting emergency coordinator/ARFF or outside agencies if necessary
Team Member:	Aircraft Rescue and Fire Fighting (ARFF)
Title:	N/A
Phone Number:	616-233-6077
Responsibilities:	Providing emergency response to issues as necessary.

Table 3-1
Summary of Facilities with Industrial Activities
Gerald R. Ford International Airport, Grand Rapids, Michigan

Tenant	Industrial Activity?	Locations	Industrial Activity (See key below)														
			AD	AF	AM	ACW	PD	GS	OS	PHS	CS	TTP	EF	ED	EM	ES	CH
Aviation																	
Allegiant Airlines	Y	AC Apron, 100							☑								
American Eagle	Y	AC Apron, 100	☑					☑	☑			☑	☑			☑	
Delta Air Lines/Delta Connection/Delta Air Cargo	Y	AC Apron, 100, 401	☑					☑	☑		☑	☑	☑			☑	☑
Southwest Airlines	Y	AC Apron, 100							☑								
Car Rental																	
Budget Car Rental	Y	431, 432							☑				☑	☑	☑	☑	
Avis Rent-A-Car	Y	433, 434							☑				☑	☑	☑	☑	
Enterprise Rent-A-Car	Y	425, 426							☑				☑	☑	☑	☑	
Hertz Rent-A-Car	Y	429, 430							☑				☑	☑	☑	☑	
Vanguard Rental Car	Y	427, 428							☑				☑	☑	☑	☑	
Cargo																	
FedEx	Y	207	☑	☑	☑			☑				☑	☑	☑	☑	☑	☑
UPS	Y	208											☑		☑	☑	☑
Corporate Flight Departments																	
Amway Aviation	Y	Fuel Farm, 409, 410, 412	☑	☑	☑				☑			☑		☑		☑	
Bissel	Y	414	☑	☑	☑				☑					☑			
Island Hangar Investments	N	405							☑								
L3 Communications	Y	413		☑	☑				☑							☑	
Spectrum Aero Med	Y	407		☑	☑				☑			☑				☑	
Steelcase Aviation	Y	Fuel Farm, 406	☑	☑	☑				☑			☑				☑	
Universal Forest Products	Y	408	☑	☑	☑				☑			☑		☑		☑	
General/Charter Aviation																	
Signature Flight Support	Y	201, 202, 203, 403, 404, 412	☑	☑	☑			☑	☑			☑	☑	☑	☑	☑	
The Company Jet	Y	203	☑		☑							☑		☑		☑	
Government Offices			☑	☑	☑			☑	☑			☑			☑	☑	
Federal Aviation Administration	Y	100, 300, 419							☑								
National Weather Service	Y	109							☑		☑						
Transportation Safey Administration	Y	100									☑						
Other Tenants & Services																	
Kent County Road Commission	Y	107					☑		☑	☑			☑	☑	☑	☑	
GSRX	Y	401							☑						☑	☑	
Swissport	Y	AC Ramp, 401	☑					☑	☑		☑	☑	☑		☑	☑	☑
QuickFlight Services	Y	AC Apron, 100							☑		☑					☑	
GFIA Maintenance Department	Y	420, 421, 422, 423					☑		☑	☑	☑	☑	☑	☑	☑	☑	
Envoy	Y	AC Apron, 401	☑						☑		☑	☑	☑				

INDUSTRIAL ACTIVITIES KEY:

AD = Aircraft Deicing/Anti-icing
AF = Aircraft Fueling
AM = Aircraft Maintenance
ACW = Aircraft Washing
PD = Pavement Deicing (Chemical Storage and/or Use)
GS = Glycol Storage
OS = Oil Product Storage
PHS = Pesticide/Herbicide Storage and/or Use
CS = Other (Non-Glycol, Petroleum, Pesticide/Herbicide) Chemical Storage
TTP = Glycol/Fuel Tank Truck Parking
EF = Vehicle/Equipment Fueling
ED = Vehicle/Equipment Degreasing/Washing
EM = Vehicle/Equipment Maintenace
ES = Vehicle/Equipment Storage
CH = Cargo Handling

Table 3-2
Inventory of Bulk Significant Materials
Gerald R. Ford International Airport, Grand Rapids, Michigan

(Refer to Figure 2 for reference locations.)

	Material	Owner	Storage Location	Storage Quantity (or capacity)	Storage Method	Surface Inlet Structure #	Outfall
4/18/2017	Jet Fuel	Aeromed	407	2,200 gallons	Mobile Refueler	2D9B3d	007
4/18/2017	Type I and IV Propylene Glycol	American Eagle	East side of 402	750/100-g each	ADF Truck	11D7C	001/011
4/18/2017	Type I and IV Propylene Glycol	American Eagle	East side of 402	1800/300-g each	ADF Truck	11D7C	001/011
4/18/2017	Type I and IV Propylene Glycol	American Eagle	East side of 402	1400/600-g each	ADF Truck	11D7C	001/011
4/18/2017	Jet Fuel	Amway	409/410	7,000 gallons	Mobile Refueler	16D6A4 & 5	007
4/18/2017	Jet Fuel	Amway	409/410	7,000 gallons	Mobile Refueler	16D6A4 & 5	007
4/18/2017	Gasoline	Amway	Fuel Farm	300 gallons	Tow Cart w/secondary containment	16D10A	007
4/18/2017	Jet Fuel	Amway	Fuel Farm	15,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Amway	Fuel Farm	15,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Amway	Fuel Farm	15,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Unleaded Gasoline	Avis Rent-a-Car	433/434	100 gals	Mobile gas tank trailer	16D19E	007
4/18/2017	Unleaded Gasoline	Avis Rent-a-Car	433/434	15,000 gals	Underground Storage Tank	16D19H & G	007
4/18/2017	Jet Fuel	Bissel	414	~2,200 gallons	Mobile Refueler	2D10A2	007
4/18/2017	Unleaded Gasoline	Budget Rental	431/432	15,000 gals	Underground Storage Tank	16D17H & J	007
4/18/2017	Diesel Fuel	DJs	Fuel Farm	500 gals	Aboveground Storage Tank (Steel)	16D10A	007
4/18/2017	Type I Propylene Glycol	Delta Airlines	Inside A	4,000 gallons	Aboveground storage tank (Steel) - stored indoors	1D10E	001/011
4/18/2017	Type I and IV Propylene Glycol	Delta Airlines	Outside 402	1800/300-g each	ADF Truck (580151)	12D9	001/011
4/18/2017	Type I and IV Propylene Glycol	Delta Airlines	Near A1	1600/300-g each	ADF Truck (580075)	11D10A through 11D10P	001/011
4/18/2017	Type I and IV Propylene Glycol	Delta Airlines	Near A1	1600/300-g each	ADF Truck	11D10A through 11D10P	001/011
4/18/2017	Type I and IV Propylene Glycol	Delta Airlines	Near A1	1000/200-g each	ADF Truck	11D10A through 11D10P	001/011
4/18/2017	Type I Propylene Glycol	Delta Airlines	Apron, N. of 401	2,000 gallons	Aboveground Polytank	12D9A	001/011
4/18/2017	Unleaded Gasoline	Enterprise Rent-a-Car	425/426	15,000 gals	Underground Storage Tank	50DE3 & F	007
4/18/2017	Unleaded Gasoline	Enterprise Rent-a-Car	425 fuel pad	350 gals	Fuel reclaim system, steel tank on trailer w/sized containment	50DE3 & F	007
4/18/2017	Diesel Fuel	FAA (backup generator)	300	2,000 gallons	Aboveground Storage Tank (Steel)	N/A *	004
4/18/2017	Diesel Fuel	FAA (backup generator)	SW, just outside 101	1,000 gallons	Aboveground Storage Tank (Steel)	11D10G	001/011
4/18/2017	Diesel Fuel	FAA (backup generator)	Northwest of 419	500 gal	steel AST	N/A *	004
4/18/2017	Diesel Fuel	Federal Express	N. of 207	500 gallons	Aboveground Storage Tank (Steel)	34D1 through 34D3	001/011
4/18/2017	Diesel Fuel	Federal Express	S. of 207	300 gallons	Tow Cart w/secondary containment	Trench Drain 32D1 through 32D12	001/011
4/18/2017	Unleaded Gasoline	Federal Express	N. of 207	500 gallons	Aboveground Storage Tank (Steel)	34D1 through 34D3	001/011
4/18/2017	Type I and IV Propylene Glycol	Federal Express	N. of 207	600/600-g each	ADF Truck	34D1 through 34D3	001/011
4/18/2017	Type I and IV Propylene Glycol	Federal Express	N. of 207	600/600-g each	ADF Truck	34D1 through 34D3	001/011
4/18/2017	Type I and IV Propylene Glycol	Federal Express	N. of 207	600/600-g each	ADF Truck	34D1 through 34D3	001/011
4/18/2017	Type I Propylene Glycol	Federal Express	S. Exterior of 207	5,000 gallons	Steel tank on trailer	Trench Drain 32D1 through 32D12	001/011
4/18/2017	Type I Propylene Glycol	Federal Express	S. Exterior of 207	5,000 gallons	Steel tank on trailer	Trench Drain 32D1 through 32D12	001/011
4/18/2017	Type IV Propylene Glycol	Federal Express	S. Exterior of 207	5,000 gallons	Steel tank on trailer	Trench Drain 32D1 through 32D12	001/011
4/18/2017	Diesel Fuel	Federal Express (backup generator)	N. of 207	1000 gallons	Aboveground Storage Tank (Steel)	34D1 through 34D3	001/011

Table 3-2
Inventory of Bulk Significant Materials
Gerald R. Ford International Airport, Grand Rapids, Michigan

(Refer to Figure 2 for reference locations.)

	Material	Owner	Storage Location	Storage Quantity (or capacity)	Storage Method	Surface Inlet Structure #	Outfall
4/18/2017	AV Gas	Signature Flight Support	Fuel Farm	10,500 gallons	Aboveground Storage Tank (Steel)	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	15,500 gallons	Aboveground Storage Tank (Steel)	16D10A	007
4/18/2017	Diesel Fuel	Signature Flight Support	Fuel Farm	700 gallons	Aboveground Storage Tank (Steel)	16D10A	007
4/18/2017	AV Gas	Signature Flight Support	200	1,100 gallons	Mobile Refueler	20D11H	001/011
4/18/2017	AV Gas	Signature Flight Support	200	1,100 gallons	Mobile Refueler	20D11H	001/011
4/18/2017	Jet Fuel	Signature Flight Support	200	2,200 gallons	Mobile Refueler	20D11H	001/011
4/18/2017	Jet Fuel	Signature Flight Support	200	2,000 gallons	Mobile Refueler	20D11H	001/011
4/18/2017	Unleaded Gasoline	Hertz Rent-a-Car	429/430	15,000 gals	Underground Storage Tank	16D24F & G	007
4/18/2017	Waste Type I/IV Propylene Glycol/Runoff	GFIA	Apron, N. of 401	3-1,500 gallon polytanks	Polytanks	12D9A	001/011
4/18/2017	Diesel Fuel	GFIA - ARFF	East of 205	125 gallons	Aboveground Storage Tank (Steel)	9D10G	001/011
4/18/2017	Diesel Fuel	GFIA - ARFF	South of 205	12,000 gallons	Underground Storage Tank	9D10F	001/011
4/18/2017	Unleaded Gasoline	GFIA - ARFF	South of 205	12,000 gallons	Underground Storage Tank	9D10F	001/011
4/18/2017	Sodium Formate	GFIA - Maintenance	Inside 423	~8,800 pounds (4 super sacks)	2200# supersacks inside salt dome	57D7	006
4/18/2017	Potassium Acetate	GFIA - Maintenance	East of 420	10,000 gallons	Aboveground Storage Tank (Steel)	57D7	006
4/18/2017	Unleaded Gasoline	GFIA - Maintenance	East of 420	300 gallons	Aboveground Storage Tank (Steel)	57D7	006
4/18/2017	Waste Paint	GFIA - Maintenance	East of 420	4 - 55-gallon drums	Drums under roof	57D6	006
4/18/2017	Potassium Acetate	GFIA - Maintenance	East of 420	2 - 1500 gallon polytanks	Polytanks	57D7	006
4/18/2017	Potassium Acetate	GFIA - Maintenance	East of 420	2 - 275 gallon totes	Polytotes	57D7	006
4/18/2017	Paint	GFIA - Maintenance	East of 420	8 - 275 gallon totes	Polytotes	57D7	006
4/18/2017	Sand	GFIA - Maintenance	422	Varies - several hundred tons	Sand Dome	57D7	006
4/18/2017	Virgin Oil (various types - hyd/lube, etc)	GFIA - Maintenance	Inside 420	550 gallons	Two 275-gallon ASTs (Steel)	57D2	006
4/18/2017	Waste Oil	GFIA - Maintenance	Inside 420	550 gallons	Two 275-gallon ASTs (Steel)	57D2	006
4/18/2017	Diesel Fuel	GFIA - Maintenance	NE of 420	10,000 gallons	Underground Storage Tank	57D6	006
4/18/2017	Unleaded Gasoline	GFIA - Maintenance	NE of 420	10,000 gallons	Underground Storage Tank	57D6	006
4/18/2017	Diesel Fuel	GFIA (backup generator)	N. of E. Wing outside of 100	750 gallons	Aboveground Storage Tank (Steel)	11D6a2 & 3A	001/011
4/18/2017	Diesel Fuel	GFIA (backup generator)	N. of E. Wing outside of 100	100 gallons	Aboveground Storage Tank (Steel)	11D6a2 & 3A	001/011
4/18/2017	Diesel Fuel	GFIA (backup generator)	SW corner outside of 100	774 gallons	Aboveground Storage Tank (Steel)	11D10P	001/011
4/18/2017	Diesel Fuel	GFIA (backup generator)	SW corner outside of 100	555 gallons	Aboveground Storage Tank (Steel)	11D10P	001/011
4/18/2017	Type I and IV Propylene Glycol	Multiple Airlines	Apron, N. of 401	54- 275-gallon totes	Polytotes in steel cages	12D9A	001/011
4/18/2017	Diesel Fuel	National Weather Service	N. of 109	1000 gallons	Aboveground Storage Tank (Steel)	46D4	009

Table 3-2

Inventory of Bulk Significant Materials

Gerald R. Ford International Airport, Grand Rapids, Michigan

(Refer to Figure 2 for reference locations.)

	Material	Owner	Storage Location	Storage Quantity (or capacity)	Storage Method	Surface Inlet Structure #	Outfall
4/18/2017	Unleaded Gasoline	National/Alamo Rental	427/428	15,000 gals	Underground Storage Tank	16D23F & G	007
4/18/2017	Type IV Propylene Glycol	Signature Flight Support	N. Of 403	1,600 gals	Aboveground Polytank	12D3A5	001/011
4/18/2017	Unleaded Gasoline	Signature Flight Support	N. Of 403	1,000 gallons	Aboveground Storage Tank (Steel)	12D3A5	001/011
4/18/2017	Type I and IV Propylene Glycol	Signature Flight Support	N. Of 403	1000/200-g each	ADF Truck	12D3A4	001/011
4/18/2017	Type I and IV Propylene Glycol	Signature Flight Support	N. Of 403	1200/110-g each	ADF Truck	12D3A4	001/011
4/18/2017	Type I and IV Propylene Glycol	Signature Flight Support	N. Of 403	1400/300-g each	ADF Truck	12D3A4	001/011
4/18/2017	AV Gas	Signature Flight Support	Fuel farm/403/203/Apron Area	1,500 gallons	Mobile Refueler	16D10A/12D3A4	007/001/011
4/18/2017	AV Gas	Signature Flight Support	Fuel farm/403/203/Apron Area	1,100 gallons	Mobile Refueler	16D10A/12D3A4	007/001/011
4/18/2017	Jet Fuel	Signature Flight Support	Fuel farm/403/203/Apron Area	5,000 gallons	Mobile Refueler	16D10A/12D3A4	007/001/011
4/18/2017	Jet Fuel	Signature Flight Support	Fuel farm/403/203/Apron Area	3,000 gallons	Mobile Refueler	16D10A/12D3A4	007/001/011
4/18/2017	Jet Fuel	Signature Flight Support	Fuel farm/403/203/Apron Area	2,200 gallons	Mobile Refueler	16D10A/12D3A4	007/001/011
4/18/2017	Jet Fuel	Signature Flight Support	Fuel farm/403/203/Apron Area	3,000 gallons	Mobile Refueler	16D10A/12D3A4	007/001/011
4/18/2017	Jet Fuel	Signature Flight Support	Fuel farm/403/203/Apron Area	2,200 gallons	Mobile Refueler	16D10A/12D3A4	007/001/011
4/18/2017	AV Gas	Signature Flight Support	Fuel Farm	10,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	AV Gas	Signature Flight Support	Fuel Farm	10,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	10,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	10,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	15,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	15,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	15,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	15,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	15,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Jet Fuel	Signature Flight Support	Fuel Farm	20,000 gallons	Underground Storage Tank	16D10A	007
4/18/2017	Type I Propylene Glycol	Signature Flight Support	North of 403	16,000 gallons	Underground Storage Tank	12D3A5	001/011
4/18/2017	Type I Propylene Glycol	Swissport	Apron, N. of 401	10,000 gallons	Aboveground Storage Tank (Steel)	12D9A	001/011
4/18/2017	Type I and IV Propylene Glycol	Swissport	Apron, E. of 401	1900/200 gals	ADF Truck	12D9	001/011

Table 3-2

Inventory of Bulk Significant Materials

Gerald R. Ford International Airport, Grand Rapids, Michigan

(Refer to Figure 2 for reference locations.)

	Material	Owner	Storage Location	Storage Quantity (or capacity)	Storage Method	Surface Inlet Structure #	Outfall
4/18/2017	Type I and IV Propylene Glycol	Swissport	Apron, E. of 401	1000/400 gals	ADF Truck	12D9	001/011
4/18/2017	Type I and IV Propylene Glycol	Swissport	Apron, E. of 401	1000/400 gals	ADF Truck	12D9	001/011
4/18/2017	Type I and IV Propylene Glycol	Swissport	Apron, E. of 401	1400/300-g each	ADF Truck	12D9	001/011
4/18/2017	Type I and IV Propylene Glycol	Swissport	Outside 401	46 - 275 gallon totes	Polytotes in steel cages	12D9	001/011
4/18/2017	Jet Fuel	Steelcase	406	3,500 gallons	Mobile Refueler	2D9B3	007
4/18/2017	Jet Fuel	Steelcase	Fuel Farm	15,000 gallons	Aboveground Storage Tank (Steel)	16D10A	007
4/18/2017	Jet Fuel	Steelcase	Fuel Farm	15,000 gallons	Aboveground Storage Tank (Steel)	16D10A	007
4/18/2017	Jet Fuel	Universal Forest Products	408	~2,200 gal	Mobile Refueler	11D5E2	007

Note: Only materials used and stored in quantities greater than a 55-gallon drum are presented in this table. Several Tenants use/store smaller quantities of various chemicals, but they are stored and used only inside buildings.

* N/A = Not Applicable to this location. No storm infrastructure present.

Table 3-3
Evaluation of Areas/Activities to Determine Reasonable Potential to Pollute Runoff
Gerald R. Ford International Airport
Grand Rapids, Michigan

Area/Activity	Reasonable Potential to Contribute Significant Materials to Runoff?
Loading, unloading and other material handling operations.	Yes, from spillage of significant materials during handling, leaks from pipes, pumps or containers.
Outdoor storage including secondary containment structures	Yes, from spillage of significant materials during loading/unloading, overfilling, or leaks from containers. Also from improper management of accumulated stormwater (i.e., uncontrolled discharge).
Outdoor manufacturing or processing activities	No, there are no manufacturing or processing activities occuring outdoors at GFIA.
Runway deicing	Yes, from direct contact with runoff following application.
Significant dust or particulate generating processes	No, there are no significant dust or particulate generating processes at GFIA.
Discharge from vents, stacks and air emission controls	No, there are no discharges from vents, stacks or other emissions at GFIA that require controls.
On-site waste disposal practices	No, there are no on-site waste disposal practices at GFIA.
Maintenance and cleaning of vehicles, machines and equipment	No - these activities only occur under roof per Airport Rules and Regulations.
De-icing/anti-icing of vehicles, machines and equipment	Yes, from direct contact with runoff following application.
Sites of exposed and/or erodible soil	Yes, but only during construction activities. In lieu of construction activities, the property grounds are either fully vegetated or paved. Construction activities are performed in accordance with GFIA policies presented in its Stormwater Management Plan (SWMP).
Sites of environmental contamination listed under Part 201 (Environmental Response) of the Michigan Act	No, there are no sites of environmental contamination at GFIA that could reasonably pollute runoff.
Areas of significant material residue	No, there are no areas of significant material residue present at GFIA.

Areas/activities highlighted in green have best management practices (i.e., either structural or non-structural controls described in the SWPPP that prevent pollution of runoff from these areas/activities.

Appendix A
NPDES Permit No. MI0055735

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PERMIT NO. MI0055735

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 *et seq.*) (the "Federal Act"), Michigan Act 451, Public Acts of 1994, as amended (the "Michigan Act"), Parts 31 and 41, and Michigan Executive Order 2011-1,

Kent County Department of Aeronautics
5500 44th Street, SE
Grand Rapids, Michigan 49512

is authorized to discharge from the **Gerald R. Ford International Airport** located at

5500 44th Street, SE
Grand Rapids, Michigan 49512

designated as **Gerald R Ford Intl Airport-GR**

through an unnamed tributary to the Thornapple River (locally known as Trout Creek), an unnamed tributary to the Thornapple River, the Thornapple River, and an unnamed tributary to Plaster Creek in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit is based on a complete application submitted on April 1, 2009.

This modified permit takes effect immediately. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules.

This permit and the authorization to discharge shall expire at midnight, **October 1, 2014.** In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application which contains such information, forms, and fees as are required by the Department of Environmental Quality (Department) by **April 4, 2014.**

Issued December 27, 2010. Based on an application amendment submitted on May 6, 2013, this permit was modified on August 1, 2013.

Philip Argiroff, Chief
Permits Section
Water Resources Division

PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the Michigan Act, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by January 15 for notices mailed by December 1. The fee is due no later than 45 days after receiving the notice for notices mailed after December 1.

Annual Permit Fee Classification: Industrial-Commercial Minor, low-flow (IP).

In accordance with Section 324.3118 of the Michigan Act, the permittee shall make payment of an annual storm water fee to the Department for each January 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by March 15 for notices mailed by February 1. The fee is due no later than 45 days after receiving the notice for notices mailed after February 1.

ANTIDEGRADATION

The Department has determined that the permittee's Antidegradation Demonstration, based on information required by Subrule (4) of R323.1098, shows that lowering of water quality is necessary to support the identified important social and economic development in the area. The permitted discharge shall not lower the existing water quality of the receiving water below State Water Quality Standards. The proposed discharge to Outfall 011 will be of better quality than what is currently authorized to be discharged to the same watershed. This determination is solely for purposes of satisfying state water quality regulations and is not intended to supplant local requirements, including land use or zoning laws. It is not, and should not be construed as, a finding by the Department that the proposed development meets local requirements or ordinances.

CONTACT INFORMATION

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Grand Rapids District Supervisor of the Water Resources Division. The Grand Rapids District Office is located at the State Office Building, Fifth Floor, 350 Ottawa, NW, Unit 10, Grand Rapids, Michigan 49503-2341, Telephone: 616-356-0500, Fax: 616-356-0202.

CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Office of Regulatory Reinvention within the Michigan Department of Licensing and Regulatory Affairs, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

SPECIAL INSTRUCTIONS/NOTIFICATIONS

Note: Pursuant to Executive Order 2011-1, all references to the Department in this permit should now be interpreted as the "Department of Environmental Quality" and all references to the "Water Bureau" should now be interpreted as the "Water Resources Division."

PART I

Section A. Limitations and Monitoring Requirements

1. Interim Effluent Limitations, Monitoring Point 001A

During the period beginning on the effective date of this permit and lasting until the discharge is redirected to Outfall 011, the permittee is authorized to discharge an unspecified amount of storm water from Monitoring Point 001A through Outfall 001 to an unnamed tributary to the Thornapple River (locally known as Trout Creek), provided that the permittee is in full compliance with ADF Best Management Practices (Part I.A.9.) and the Nuisance Biofilm Elimination and Prevention Program (Part 1.A.12.) in this permit. Such discharges shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading			Maximum Limits for Quality or Concentration			Monitoring	Sample
Parameter	Monthly	Daily	Units	Monthly	Daily	Units	Frequency	Type
Flow (10/1 – 5/31)	(report)	(report)	MGD	---	---	---	Daily	Report Total Daily Flow
Flow (6/1 – 9/30)	(report)	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	---	(report)	lbs/day	---	(report)	mg/l	*1	24-Hr Composite
Outfall Observation	(report)	---	---	---	---	---	*1	Visual
				Minimum Daily	Maximum Daily			
pH	---	---	---	6.5	9.0	S.U.	*1	Grab

*1 - For Monitoring Frequency see Part 1.A.1. h. & i.

a. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities, which are or may become injurious to any designated use.

b. Nutrient Restriction
Nutrient discharges shall be restricted to the extent necessary to prevent the stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria which are or may become injurious to any designated use.

c. Monitoring Location
Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to the unnamed tributary to the Thornapple River.

d. Outfall Observation
Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.

PART I

Section A. Limitations and Monitoring Requirements

e. Special Definitions used in this permit

"Anti-icing and De-icing or De-icer Fluids/Materials (ADF)" means substances or chemicals applied to aircraft to anti-ice or de-ice those surfaces.

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

f. ADF Discharge Prohibition
On or before October 1, 2015, the permittee shall cease the discharge of ADF through Outfall 001, unless the Nuisance Biofilm Elimination and Prevention Program (Part I.A.12) results in the elimination of GFIA's contribution to the nuisance biofilm in the unnamed tributary to the Thornapple River.

g. Water Treatment Additives
This permit does not authorize the discharge of water treatment additives without approval from the Department. Approval of water treatment additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event a permittee proposes to discharge water additives, including an increased discharge concentration of a previously approved water additive, the permittee shall submit a request to the Department for approval. See Part I.A.15. for information on requesting water treatment additive use.

h. Storm Event Monitoring
$CBOD_5$ shall be monitored a minimum of once per month during deicing discharge events between October 1 and May 31 of each year. A deicing discharge event is defined as a weather forecast for a predicted snowfall of at least 1 inch, or freezing precipitation anticipated to result in significant deicing activities at the airport. Monitoring shall begin immediately upon declaration of an event, and shall continue for the duration of five (5) days. ADF discharge events shall be sampled to capture peak ADF concentrations or loadings. Date, description, and duration of the related storm events with the precipitation measurement or estimate shall be reported. Samples should be collected as 24-hr composite samples and analyzed using United States Environmental Protection Agency (USEPA) approved methods. The Outfall Observation, measured flow, and pH shall be recorded daily for each storm event.

i. Dry Weather Monitoring: $CBOD_5$, pH, Outfall Observation
Dry weather samples shall not be collected within 72 hours of a deicing discharge event. $CBOD_5$ samples shall be collected monthly as 24-hr composite samples and analyzed using a USEPA approved method. Outfall Observation, flow, and pH shall be recorded for each dry weather monitoring event.

PART I

Section A. Limitations and Monitoring Requirements

2. Final Effluent Limitations, Monitoring Point 001A

During the period beginning with the commencement of a discharge to Outfall 011 and lasting until the expiration date of this permit, the permittee is authorized to discharge an unspecified amount of storm water and intercepted sub-surface flow from Monitoring Point 001A through Outfall 001 to an unnamed tributary to the Thornapple River (locally known as Trout Creek), provided that the permittee is in full compliance with ADF Best Management Practices (Part I.A.9.) and the Nuisance Biofilm Elimination and Prevention Program (Part 1.A.12.) in this permit. Such discharges shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading			Maximum Limits for Quality or Concentration			Monitoring	Sample
Parameter	Monthly	Daily	Units	Monthly	Daily	Units	Frequency	Type
Flow	(report)	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Outfall Observation	(report)	---	---	---	---	---	Monthly	Visual

a. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, odor, or deposits as a result of this discharge in unnatural quantities, which are or may become injurious to any designated use.

b. Outfall Observation
Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition. The outfall observation shall also report any propagation of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria in concentrations that are or may become injurious to any designated use.

c. Anti-icing and De-icing or De-icer Fluids/Materials Discharge Prohibition
Beginning with the initiation of discharge to Outfall 011, the permittee shall cease the discharge of ADF through Outfall 001, unless the Nuisance Biofilm Elimination and Prevention Program (Part I.A.12.) results in the elimination of GFIA's contribution to the nuisance biofilm in the unnamed tributary to the Thornapple River.

During the de-icing season, the permittee shall direct the unspecified amount of storm water and intercepted sub-surface flow through the detention basin and treatment area prior to being discharged through Outfall 011. The permittee shall take appropriate measures to determine that ADF is not present in the storm water and/or intercepted sub-surface flow prior to the flow being redirected back through Outfall 001 during the non-deicing seasons.

PART I

Section A. Limitations and Monitoring Requirements

3. Interim Effluent Limitations, Monitoring Point 004A

During the period beginning on the effective date of this permit and lasting until the commencement of a discharge at Outfall 011, the permittee is authorized to discharge an unspecified amount of storm water from Monitoring Point 004A through Outfall 004 to an unnamed tributary to the Thornapple River, provided that the permittee is in compliance with ADF Best Management Practices (Part I.A.9.) in this permit. Such discharges shall be limited and monitored by the permittee as specified below.

Parameter	Maximum Limits for Quantity or Loading			Maximum Limits for Quality or Concentration			Monitoring Frequency	Sample Type
	Monthly	Daily	Units	Monthly	Daily	Units		
Flow (10/1 – 5/31)	(report)	(report)	MGD	---	---	---	Daily	Report Total Daily Flow
Flow (6/1 – 9/30)	(report)	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) Oct. 1 – May 31	---	(report)	lbs/day	---	(report)	mg/l	*3	24-Hr Composite
Outfall Observation	(report)	---	---	---	---	---	During ADF Sampling	Visual
				Minimum Daily	Maximum Daily			
pH	---	---	---	6.5	9.0	S.U.	During ADF Sampling	Grab

*3 - For Monitoring Frequency see Part 1.A.3.a.

a. Storm Event Monitoring
$CBOD_5$ shall be monitored once per month during a deicing discharge event between October 1 and May 31 of each year. A deicing discharge event is defined as a weather forecast for a predicted snowfall of at least 1 inch, or freezing precipitation anticipated to result in significant deicing activities at the airport. Monitoring shall begin immediately upon declaration of an event, and shall continue for the duration of five (5) days. ADF discharge events shall be sampled to capture peak ADF concentrations or loadings. Date, description, and duration of the related storm events with the precipitation measurement or estimate shall be reported. Samples should be collected as 24-hr composite samples and analyzed using USEPA approved methods. The Outfall Observation, measured flow, and pH shall be recorded daily for each storm event.

b. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities, which are or may become injurious to any designated use.

c. Nutrient Restriction
Nutrient discharges shall be restricted to the extent necessary to prevent the stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria, which are or may become injurious to any designated use.

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d. Monitoring Location
Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to the unnamed tributary to the Thornapple River.

e. Outfall Observation
Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.

f. Water Treatment Additives
This permit does not authorize the discharge of water treatment additives without approval from the Department. Approval of water treatment additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event that a permittee proposes to discharge water treatment additives, including an increased discharge concentration of a previously approved water treatment additive, the permittee shall submit a request to the Department for approval. See Part I.A.15. for information on requesting water treatment additive use.

4. Final Effluent Limitations, Monitoring Point 004A

During the period beginning with the commencement of a discharge at Outfall 011 and lasting until the expiration date of this permit, the permittee is authorized to discharge an unspecified amount of storm water from Monitoring Point 004A through Outfall 004 to an unnamed tributary to the Thornapple River, provided that the permittee is in compliance with ADF Best Management Practices (Part I.A.9.) in this permit. Such discharges shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading			Maximum Limits for Quality or Concentration				
Parameter	Monthly	Daily	Units	Monthly	Daily	Units	Monitoring Frequency	Sample Type
Flow (10/1 – 5/31)	(report)	(report)	MGD	---	---	---	Daily	Report Total Daily Flow
Flow (6/1 – 9/30)	(report)	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	---	(report)	lbs/day	---	(report)	mg/l	*4	24-Hr Composite
Ammonia Nitrogen (as N)	---	(report)	lbs/day	---	(report)	mg/l	*4	24-Hr Composite
Outfall Observation	(report)	---	---	---	---	---	During ADF Sampling	Visual
				Minimum Daily	Maximum Daily			
pH	---	---	---	6.5	9.0	S.U.	During ADF Sampling	Grab
Dissolved Oxygen	---	---	---	(report)	---	mg/l	*4	Grab

*4 - For Monitoring Frequency see Part 1.A.4.a.

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Section A. Limitations and Monitoring Requirements

a. Storm Event Monitoring
$CBOD_5$, Ammonia Nitrogen, and Dissolved Oxygen shall be monitored two times per month during distinct, separated, deicing discharge events between October 1 and May 31 of each year. A deicing discharge event is defined as a weather forecast for a predicted snowfall of at least 1 inch, or freezing precipitation anticipated to result in significant deicing activities at the airport. Monitoring shall begin immediately upon declaration of an event, and shall continue for the duration of five (5) days. ADF discharge events shall be sampled to capture peak ADF concentrations or loadings. Date, description, and duration of the related storm events with the precipitation measurement or estimate shall be reported. Samples should be collected as 24-hr composite samples and analyzed using USEPA approved methods. The Outfall Observation, measured flow, and pH shall be recorded daily for each storm event.

b. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities, which are or may become injurious to any designated use.

c. Nutrient Restriction
Nutrient discharges shall be restricted to the extent necessary to prevent the stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria, which are or may become injurious to any designated use.

d. Monitoring Location
Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to the unnamed tributary to the Thornapple River.

e. Outfall Observation
Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department, followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.

f. Water Treatment Additives
This permit does not authorize the discharge of water treatment additives without approval from the Department. Approval of water treatment additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event that a permittee proposes to discharge water treatment additives, including an increased discharge concentration of a previously approved water treatment additive, the permittee shall submit a request to the Department for approval. See Part I.A.15. for information on requesting water treatment additive use.

g. Monitoring Frequency Reduction for Flow, $CBOD_5$, Ammonia Nitrogen, Dissolved Oxygen, pH, and/or Outfall Observation
After the submittal of two-years of data following the completion of Outfall 011, the permittee may request, in writing, Department approval of a reduction of monitoring for Outfall 004. This request shall contain an explanation as to why the reduced or eliminated monitoring or observation is appropriate. Upon receipt of written approval, and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.4. of this permit. The Department may revoke the approval for reduced or eliminated monitoring or observation at any time upon notification to the permittee.

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Section A. Limitations and Monitoring Requirements

5. Interim Effluent Limitations, Monitoring Point 007A

During the period beginning on the effective date of this permit and lasting until the commencement of a discharge at Outfall 011, the permittee is authorized to discharge an unspecified amount of storm water from Monitoring Point 007A through Outfall 007 to an unnamed tributary to Plaster Creek, provided that the permittee is in compliance with ADF Best Management Practices (Part I.A.9.) in this permit. Such discharges shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading			Maximum Limits for Quality or Concentration				
Parameter	Monthly	Daily	Units	Monthly	Daily	Units	Monitoring Frequency	Sample Type
Flow (10/1 – 5/31)	(report)	(report)	MGD	---	---	---	Daily	Report Total Daily Flow
Flow (6/1 – 9/30)	(report)	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) Oct. 1 – May 31	---	(report)	lbs/day	---	(report)	mg/l	*5	24-Hr Composite
Outfall Observation	(report)	---	---	---	---	---	During ADF Sampling	Visual
				Minimum Daily	Maximum Daily			
pH	---	---	---	6.5	9.0	S.U.	During ADF Sampling	Grab

*5 - For Monitoring Frequency see Part I.A.5.a

a. Storm Event Monitoring
$CBOD_5$ shall be monitored once per month during deicing discharge events between October 1 and May 31 of each year. A deicing discharge event is defined as a weather forecast for a predicted snowfall of at least 1 inch, or freezing precipitation anticipated to result in significant deicing activities at the airport. Monitoring shall begin immediately upon declaration of an event, and shall continue for the duration of five (5) days. ADF discharge events shall be sampled to capture peak ADF concentrations or loadings. Date, description, and duration of the related storm events with the precipitation measurement or estimate shall be reported. Samples should be collected as 24-hr composite samples and analyzed using USEPA approved methods. The Outfall Observation, measured flow, and pH shall be recorded daily for each storm event.

b. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities, which are or may become injurious to any designated use.

c. Nutrient Restriction
Nutrient discharges shall be restricted to the extent necessary to prevent the stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria, which are or may become injurious to any designated use.

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d. Monitoring Location
Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to the unnamed tributary to Plaster Creek.

e. Outfall Observation
Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department, followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.

f. Water Treatment Additives
This permit does not authorize the discharge of water treatment additives without approval from the Department. Approval of water additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event that a permittee proposes to discharge water additives, including an increased discharge concentration of a previously approved water treatment additive, the permittee shall submit a request to the Department for approval. See Part I.A.15. for information on requesting water treatment additive use.

6. Final Effluent Limitations, Monitoring Point 007A

During the period beginning on the commencement of a discharge at Outfall 011 and lasting until the expiration date of this permit, the permittee is authorized to discharge an unspecified amount of storm water from Monitoring Point 007A through Outfall 007 to an unnamed tributary to Plaster Creek, provided that the permittee is in compliance with ADF Best Management Practices (Part I.A.9.) in this permit. Such discharges shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading			Maximum Limits for Quality or Concentration				
Parameter	Monthly	Daily	Units	Monthly	Daily	Units	Monitoring Frequency	Sample Type
Flow (10/1 – 5/31)	(report)	(report)	MGD	---	---	---	Daily	Report Total Daily Flow
Flow (6/1 – 9/30)	(report)	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	---	(report)	lbs/day	---	(report)	mg/l	*6	24-Hr Composite
Ammonia Nitrogen (as N)	---	(report)	lbs/day	---	(report)	mg/l	*6	24-Hr Composite
Outfall Observation	(report)	---	---	---	---	---	During ADF Sampling	Visual
				Minimum Daily	Maximum Daily			
pH	---	---	---	6.5	9.0	S.U.	During ADF Sampling	Grab
Dissolved Oxygen	---	---	---	(report)	---	mg/l	*6	Grab

*6 - For Monitoring Frequency see Part I.A.6.a

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Section A. Limitations and Monitoring Requirements

a. Storm Event Monitoring
$CBOD_5$, Ammonia Nitrogen, and Dissolved Oxygen shall be monitored once per month during distinct, separated, deicing discharge events between October 1 and May 31 of each year. A deicing discharge event is defined as a weather forecast for a predicted snowfall of at least 1 inch, or freezing precipitation anticipated to result in significant deicing activities at the airport. Monitoring shall begin immediately upon declaration of an event, and shall continue for the duration of five (5) days. ADF discharge events shall be sampled to capture peak ADF concentrations or loadings. Date, description, and duration of the related storm events with the precipitation measurement or estimate shall be reported. Samples should be collected as 24-hr composite samples and analyzed using USEPA approved methods. The Outfall Observation, measured flow, and pH shall be recorded daily for each storm event.

b. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities, which are or may become injurious to any designated use.

c. Nutrient Restriction
Nutrient discharges shall be restricted to the extent necessary to prevent the stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria, which are or may become injurious to any designated use.

d. Monitoring Location
Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to the unnamed tributary to Plaster Creek.

e. Outfall Observation
Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department, followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.

f. Water Treatment Additives
This permit does not authorize the discharge of water treatment additives without approval from the Department. Approval of water additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event that a permittee proposes to discharge water additives, including an increased discharge concentration of a previously approved water treatment additive, the permittee shall submit a request to the Department for approval. See Part I.A.15. for information on requesting water treatment additive use.

g. Monitoring Frequency Reduction for Flow, $CBOD_5$, Ammonia Nitrogen, Dissolved Oxygen, pH, and/or Outfall Observation
After the submittal of two-years of data following the completion of Outfall 011, the permittee may request, in writing, Department approval of a reduction of monitoring for Outfall 007. This request shall contain an explanation as to why the reduced or eliminated monitoring or observation is appropriate. Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.6. of this permit. The Department may revoke the approval for reduced or eliminated monitoring or observation at any time upon notification to the permittee.

h. Monitoring and/or Effluent Limitations for $CBOD_5$, Ammonia Nitrogen, and Dissolved Oxygen
The Department may modify the monitoring requirements for $CBOD_5$, Ammonia Nitrogen, and Dissolved Oxygen to include effluent limitations if discharge monitoring reports indicate that there is reasonable potential to exceed water quality standards. This permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules.

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Section A. Limitations and Monitoring Requirements

7. Final Effluent Limitations, Monitoring Point 011A

During the period beginning with the initiation of a discharge to Outfall 011 and lasting until the expiration date of this permit, the permittee is authorized to discharge an unspecified amount of treated storm water from Monitoring Point 011A through Outfall 011 to the Thornapple River (this effluent was previously discharged through Outfall 001 to an unnamed tributary to the Thornapple River and Outfall 007 to an unnamed tributary to Plaster Creek), provided that the permittee is in full compliance with ADF Best Management Practices (Part I.A.9.) and the Nuisance Biofilm Elimination and Prevention Program (Part 1.A.12.) in this permit. Such discharges shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading			Maximum Limits for Quality or Concentration				
Parameter	Monthly	Daily	Units	Monthly	Daily	Units	Monitoring Frequency	Sample Type
Flow (10/1 – 5/31)	(report)	(report)	MGD	---	---	---	Daily	Report Total Daily Flow
Flow (6/1 – 9/30)	(report)	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)								
	---	(report)	lbs/day	---	2,000	mg/l	*7	24-Hr Composite
$CBOD_5$ - combined loads from Outfalls 004 and 011								
March 1 - 31	---	18,000	lbs/day	---	---	---	Monthly	Calculation
April 1 - 30	---	21,000	lbs/day	---	---	---	Monthly	Calculation
Oct.1 – Nov. 30	---	3,600	lbs/day	---	---	---	Monthly	Calculation
Dec.1 – Feb. 28	---	13,000	lbs/day	---	---	---	Monthly	Calculation
Ammonia Nitrogen (as N)	---	(report)	lbs/day	---	(report)	mg/l	*7	24-Hr Composite
Ammonia Nitrogen (as N) - combined loads from Outfalls 004 and 011								
	---	120	lbs/day	---	---	---	Monthly	Calculation
Outfall Observation	(report)	---	---	---	---	---	During ADF Sampling	Visual

				Minimum Daily	Maximum Daily			
pH	---	---	---	6.5	9.0	S.U.	During ADF Sampling	Grab
Dissolved Oxygen	---	---	---	6.0	---	mg/l	*7	Grab

*7 - For Monitoring Frequency see Part I.A.7. h. & i.

a. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, odor, or deposits as a result of this discharge in unnatural quantities, which are or may become injurious to any designated use.

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b. Nutrient Restriction
Nutrient discharges shall be restricted to the extent necessary to prevent the stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria which are or may become injurious to any designated use.

c. Monitoring Location
Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to the Thornapple River.

d. Outfall Construction
The permittee shall notify the Department 30-days prior to transferring the effluent from Outfall 001 to Outfall 011.

e. Outfall Observation
Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department, followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.

f. Special Definitions used in this permit

"Anti-icing and De-icing or De-icer Fluids/Materials (ADF)" means substances or chemicals applied to aircraft to anti-ice or de-ice those surfaces.

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

g. Water Treatment Additives
This permit does not authorize the discharge of water treatment additives without approval from the Department. Approval of water treatment additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event a permittee proposes to discharge water additives, including an increased discharge concentration of a previously approved water additive, the permittee shall submit a request to the Department for approval. See Part I.A.15. for information on requesting water treatment additive use.

h. Storm Event Monitoring
$CBOD_5$, Ammonia Nitrogen, and Dissolved Oxygen shall be monitored two times per month during distinct, separated, deicing discharge events between October 1 and May 31 of each year. A deicing discharge event is defined as a weather forecast for a predicted snowfall of at least 1 inch, or freezing precipitation anticipated to result in significant deicing activities at the airport. Monitoring shall begin immediately upon declaration of an event, and shall continue for the duration of five (5) days. ADF discharge events shall be sampled to capture peak ADF concentrations or loadings. Date, description, and duration of the related storm events with the precipitation measurement or estimate shall be reported. Samples should be collected as 24-hr composite samples and analyzed using USEPA approved methods. The Outfall Observation, measured flow, and pH shall be recorded daily for each storm event.

i. Dry Weather Monitoring: pH, Outfall Observation
Dry weather samples shall not be collected within 72 hours of a deicing discharge event. Outfall Observation, flow, and pH shall be recorded for each dry weather monitoring event.

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Section A. Limitations and Monitoring Requirements

j. Monitoring Frequency Reduction for Flow, $CBOD_5$, Ammonia Nitrogen, Dissolved Oxygen, pH, and/or Outfall Observation
After the submittal of two-years of data, the permittee may request, in writing, Department approval of a reduction of monitoring for Outfall 011. This request shall contain an explanation as to why the reduced or eliminated monitoring or observation is appropriate. Upon receipt of written approval, and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.7. of this permit. The Department may revoke the approval for reduced or eliminated monitoring or observation at any time upon notification to the permittee.

k. Emergency Spillway Overflow
The Industrial Storm Water Detention Basin will be constructed with an emergency spillway overflow identified as Outfall 002. Discharges from Outfall 002 are not authorized. Any discharge from Outfall 002 shall be in compliance with the Bypass Prohibition and Notification requirements indicated in Part II.C.9. of this permit.

8. Deicing Materials

The use of deicing materials shall be limited to Federal Aviation Agency (FAA) approved ethylene and propylene glycol aircraft deicers, potassium acetate, sodium acetate, sodium formate, and potassium formate pavement/runway deicers, or any other materials approved by the Department. The use of urea-containing deicers is strictly prohibited for airfield pavement deicing. The permittee shall notify the Department if the permittee proposes to use deicing materials that have not been previously approved by the Department. Written approval from the Department to discharge such new materials shall be obtained prior to the discharge of these materials. This permit may be modified in accordance with applicable laws and rules if the materials or a constituent of the material require monitoring or effluent limitations.

9. ADF Best Management Practices

Best management practices shall be utilized to minimize the discharge of ADF to waters of the state, unless approved treatment or other controls are provided. Goals shall be to: 1) control ADF discharges to the fullest extent practicable, 2) minimize GFIA's contribution to nuisance biofilm growth or other forms of water quality degradation in waters of the state, and otherwise protect designated uses.

10. ADF Discharge Minimization Progress Tracking

On or before September 1 of each year, the permittee shall submit a report to the Department summarizing its ADF BMPs, including information, measures, and data to demonstrate the extent to which those BMPs are reducing ADF discharges to the unnamed tributaries to the Thornapple River, Thornapple River, and Plaster Creek. The report shall also include (for the period 10/1 to 5/31) the total gallons of Type I and Type IV ADF used, total gallons of ADF recycled, total gallons of ADF discharged or otherwise transported to the WWTP, and percent of total gallons of ADF used that was collected and prevented from being discharged to the environment.

Records shall be retained for a minimum of 3 years.

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11. Facility Contact

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

a. The facility contact shall be (or a duly authorized representative of this person):
- for a corporation, a principal executive officer of at least the level of vice president, or a designated representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the permit application or other NPDES form originates,
- for a partnership, a general partner,
- for a sole proprietorship, the proprietor, or
- for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.

b. A person is a duly authorized representative only if:
- the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
- the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section obviates the permittee from properly submitting reports and forms as required by law.

12. Nuisance Biofilm Elimination and Prevention Program

The permittee shall develop and implement an approvable ADF runoff management program for storm water discharges associated with industrial activity at the Gerald Ford International Airport (GFIA) to:
control the GFIA's discharge of ADF from outfall 001 to the unnamed tributary to the Thornapple River, and eliminate the GFIA's contribution to nuisance biofilm growths from occurring in that waterbody.

a. The permittee's ADF runoff management program shall be conducted in two phases:

1) The permittee shall assess and implement ADF best management practice (BMP) program enhancements required by Part 1.A.7.b. immediately after the effective date of this permit

2) The permittee shall develop and implement a long-term ADF runoff management program to eliminate the GFIA's contribution to the nuisance biofilm growth problem in the unnamed tributary to the Thornapple River in accordance with the schedule set forth in Part 1.A.7.c. of this permit.

b. The permittee shall continue to enhance the existing ADF - BMP program to further reduce discharges of ADF discharged to the unnamed tributary to the Thornapple River immediately after the effective date of this permit, concurrent with the development of the long-term ADF runoff management program required by Part 1.A.7.c. of this permit. The GFIA shall develop and implement ADF BMP program enhancements, including the following:

1) Identify and implement additional or improved BMPs to increase the collection of ADF impacted runoff,

2) Improve BMPs in the Cargo area.

3) Develop and implement a policy to ensure tenant aircraft ADF operations are conducted at designated areas,

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4) Develop and implement a policy and a plan to manage ADF impacted snow piles to enhance existing controls associated with ADF discharges from such snow piles to the unnamed tributary to the Thornapple River;

5) Engage with appropriate parties to determine the feasibility of discharging collected ADF impacted runoff to the local wastewater treatment plant (WWTP). If such an approach is deemed feasible, the GFIA shall design and implement a pilot program to further assess the long-term viability of discharging collected ADF impacted runoff to the WWTP.

c. The permittee shall develop and implement a long-term ADF runoff management program to eliminate the GFIA's contribution to the nuisance biofilm growth problem in the unnamed tributary to the Thornapple River. The program shall be developed according to the following schedule and conditions:

On or before September 1, 2011, the permittee shall submit a report to the Department that:

a) Describes and evaluates alternatives;

b) Describes and provides the basis for the selected long-term ADF runoff management alternative or alternatives proposed for implementation by the permittee; and

c) Provides a schedule for implementing the selected long-term ADF runoff management alternative(s).

The long-term ADF runoff management program shall be implemented by the permittee upon approval of the Department. Approval or actions on GFIA proposed alternatives that conform to state or federal law may not be unreasonably delayed or withheld.

d. On or before July 1, 2011, the permittee shall implement a water quality monitoring program to accomplish the following:

1) Assess nuisance biofilm growth in the unnamed tributary to the Thornapple River at the 36th Street, Thornapple River Drive, and Tricklewood Drive road crossings a minimum of every other month (July, September, November, January, March, and May) using the Field-Based Rapid Periphyton Survey (EPA Document #841-B-99-002) or another equivalent method employed by airports or other industries for similar purposes if approved by the Department. The permittee shall submit a written report of the nuisance biofilm growth assessment results to the Department within five (5) days of completing each assessment. Multiple sampling location reports may be combined and may be submitted electronically. Upon request, the Department may approve quarterly or semi-annual submittal of the assessment results. After submittal of six months of data, the Department may approve a reduction in assessment locations if assessments are sufficient to characterize the nuisance biofilm growth in the unnamed tributary. The Department may revoke the approval for reduced submittals or assessment locations at any time upon notification to the permittee.

e. On or before September 1st of each year following Department approval of the long-term ADF runoff management alternative(s), the permittee shall submit a status report to the Department that, at a minimum, includes:

1) A summary of the nuisance biofilm growth results collected from the unnamed tributary to the Thornapple River during the previous year, and

2) A summary of actions taken by the GFIA during the previous year to reduce or eliminate the discharge of Type I and Type IV ADF from Outfall 001.

f. The permittee may demonstrate that the Nuisance Biofilm Elimination Program is complete or that GFIA's contribution is removed and request that the program be considered completed. Such request and supporting justification demonstrating that GFIA has effectively eliminated its potential to contribute to the occurrence of nuisance biofilm growth in the unnamed tributary shall be submitted, in writing, to

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the Department. Upon receipt of written approval and consistent with such approval, the permittee may cease or reduce further monitoring and reporting as required by this section.

g. The permittee should visually assess the conditions in the Thornapple River monthly near the proposed location of Outfall 011 for bacterial slimes during the months of October 1 through May 31. The evaluation of the proposed discharge location will document baseline conditions that exist prior to the re-direction of the discharge from Outfall 001 to Outfall 011.

h. Once the discharge ceases at Outfall 001 and is initiated at Outfall 011, the permittee should continue to visually assess the unnamed tributary to the Thornapple River for bacterial slimes for the next two consecutive deicing seasons during the months of October 1 through May 31. Visual observations for bacterial slimes should be observed in the unnamed tributary of the Thornapple River upstream of the 36th Street road crossing or at a location(s) on the unnamed tributary to the Thornapple River proposed by the permittee for two consecutive deicing seasons after the discharge is initiated at Outfall 011 at a frequency consistent with final effluent monitoring during de-icing operations. If after two deicing seasons the permittee demonstrates the Nuisance Biofilm Elimination Program is complete or that GFIA's contribution is removed, the permittee can request the observations and the Nuisance Biofilm Elimination Program be considered completed. Such request and supporting justification demonstrating that GFIA has effectively eliminated its potential to contribute to the occurrence of nuisance bacterial slime growth in the unnamed tributary to the Thornapple River shall be submitted in writing, to the Department. Upon receipt of written approval and consistent with such approval, the permittee may cease or reduce further monitoring and reporting as required by this section. This recommendation is to ensure GFIA has taken appropriate actions to eliminate their contribution to the nuisance bacterial slime growth. If the visual observations in the unnamed tributary to the Thornapple River continue to find nuisance bacterial slimes at levels in violation of Rule 323.1050 of the Part 4 Michigan Water Quality Standards, the permittee must provide a response for why GFIA no longer contributes to the nuisance bacterial slime growth. This response should include a discussion of where the nuisance bacterial slimes were observed in the unnamed tributary to the Thornapple River, the distance the bacterial slimes occur, what areas of the airport property were reviewed that could potentially still contribute to the nuisance bacterial slime growth, and any actions taken to eliminate those potential sources.

i. If nuisance bacterial slimes begin to propagate in the vicinity of Outfall 011 after the discharge begins, as a result of the airport's discharge, the permittee shall implement alternative controls to eliminate GFIA's contribution to the bacterial slimes in the Thornapple River. Redirecting the discharge of ADF to the Thornapple River does not provide the permittee any authority to degrade water quality to a point which is or may become injurious to any designated use. Nutrient discharges shall be restricted to the extent necessary to prevent the stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi, or bacteria which are or may become injurious to any designated use. This permit may be modified in accordance with applicable laws and rules to include additional conditions and/or pollutant limitations as necessary to protect waters of the State.

13. Reopener Clause

The monitoring requirements in this permit are based on site-specific concerns regarding the discharge of ADF (Part I.A.1.e). If the criteria are reevaluated and the monitoring requirements for any parameters are to be changed, the Department may modify this permit in accordance with applicable laws and rules. The Department may modify the permit in accordance with applicable laws and rules to include additional conditions and/or pollutant limitations as a result of any evidence that the discharge is causing a negative impact that may be considered a violation of the permit narrative standard. The Department may modify the conditions and/or effluent limitations of the permit, even if the permittee is currently complying with all existing effluent limitations. This permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules.

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14. Nuisance Odor Conditions

Nuisance odor conditions can be an indicator that proper treatment and/or degradation of ADF is not occurring. The issuance of this permit does not authorize any violations of air quality standards, nor does it constitute a release of liability of any violations of air quality standards. The permittee shall attempt to minimize any and all nuisance odor conditions associated with the discharges that may cause a negative impact on neighboring communities.

15. Request for Discharge of Water Treatment Additives

In the event a permittee proposes to discharge water additives, the permittee shall submit a request to discharge water additives to the Department for approval. Such requests shall be sent to the Permits Section, Water Resources Division, Department of Environmental Quality, P.O. Box 30458, Lansing, Michigan 48909, with a copy to the Department contact listed on the cover page of this permit. Instructions to submit a request electronically may be obtained via the Internet (http://www.michigan.gov/deqnpdes; then click on Applicable Rules and Regulations which is under the Information banner and then click on Water Treatment Additive Discharge Application Instructions). Written approval from the Department to discharge such additives at specified levels shall be obtained prior to discharge by the permittee. Additional monitoring and reporting may be required as a condition for the approval to discharge the additive.

A request to discharge water additives shall include all of the following water additive usage and discharge information:

a. Material Safety Data Sheet;

b. the proposed water additive discharge concentration with supporting calculations;

c. the discharge frequency (i.e., number of hours per day and number of days per year);

d. the monitoring point from which the product is to be discharged;

e. the type of removal treatment, if any, that the water additive receives prior to discharge;

f. product function (i.e. microbiocide, flocculant, etc.);

g. a 48-hour LC_{50} or EC_{50} for a North American freshwater planktonic crustacean (either *Ceriodaphnia sp., Daphnia sp., or Simocephalus sp.*); and

h. the results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2) of the Water Quality Standards.

Prior to submitting the request, the permittee may contact the Permits Section by telephone at 517-241-1346 or via the Internet at the address given above to determine if the Department has the product toxicity data required by items g. and h. above. If the Department has the data, the permittee will not need to submit product toxicity data.

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16. Storm Water Pollution Prevention Plan

The permittee is authorized to discharge storm water associated with industrial activities as defined in 40 CFR 122.26(b)(14)(i-ix).

Storm water discharges are a violation of this permit if:

The receiving water will contain unnatural turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge; or:

The permittee has not implemented an acceptable Storm Water Pollution Prevention Plan (SWPPP).

a. Source Identification

To identify potential sources of significant materials that can pollute storm water and subsequently be discharged from the facility, the SWPPP shall, at a minimum, include the following:

1) A site map identifying the following: buildings and other permanent structures; storage or disposal areas for significant materials; secondary containment structures and descriptions of what is contained in the primary containment structures; storm water discharge outfalls (numbered or otherwise labeled for reference); location of storm water and non-storm inlets (catch basins, roof drains, conduits, drain tiles, retention pond riser pipes, and sump pumps) (numbered or otherwise labeled for reference) contributing to each outfall; location of NPDES permitted discharges other than storm water; outlines of the drainage areas contributing to each outfall; structural runoff controls or storm water treatment facilities; areas of vegetation (with brief description such as lawn, old field, marsh, wooded, etc); areas of exposed and/or erodible soils and gravel lots; impervious surfaces (roofs, asphalt, concrete); name and location of receiving water(s); and areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Michigan Act;

2) A list of all significant materials that could pollute storm water. For each material listed, the SWPPP shall include each of the following descriptions:

a) ways in which each type of significant material has been or has reasonable potential to become exposed to storm water (e.g., spillage during handling; leaks from pipes, pumps, and vessels; contact with storage piles, contaminated materials, or soils; waste handling and disposal; deposits from dust or overspray, etc.);

b) an evaluation of the reasonable potential for contribution of significant materials to runoff from at least the following areas or activities: loading, unloading, and other significant material handling operations; outdoor storage, including secondary containment structures; outdoor manufacturing or processing activities; significant dust or particulate generating processes; discharge from vents, stacks and air emission controls; on-site waste treatment, storage, and disposal practices; maintenance and cleaning of vehicles, machines and equipment; sites of exposed and/or erodible soil; Sites of Environmental Contamination listed under Part 201 (Environmental Response) of the Michigan Act; waste management units and areas of concern subject to corrective action under Part 111 (Hazardous Waste Management) or Part 115 (Solid Waste Management) of the Michigan Act; areas of significant material residues; areas where animals congregate (wild or domestic) and deposit wastes; and other areas where storm water may contact significant materials;

c) identification of the outfall(s) and the inlet(s) contributing the significant material to each outfall through which the significant material may be discharged if released;

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d) a listing of significant spills and significant leaks of polluting materials that occurred at areas that are exposed to precipitation or that otherwise discharge to a point source at the facility. The listing shall include spills that occurred over the three (3) years prior to the completion of the SWPPP or latest update of the SWPPP; the date, volume and exact location of release; and the action taken to clean up the material and/or prevent exposure to storm water runoff or contamination of surface waters of the state. Any release that occurs after the SWPPP has been developed shall be controlled in accordance with the SWPPP and is cause for the SWPPP to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss; and

e) the permittee shall determine whether its facility discharges storm water to a water body for which the Department has established a Total Maximum Daily Load (TMDL). If so, the permittee shall assess whether the TMDL requirements for the facility's discharge are being met through the existing SWPPP controls or whether additional control measures are necessary. The permittee's assessment of whether the TMDL requirements are being met shall focus on the effectiveness, adequacy, and implementation of the permittee's SWPPP controls; and.

3) A summary of existing storm water discharge sampling data (if available) describing pollutants in storm water discharges at the facility. This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected.

b. Preventive Measures and Source Controls, Non-Structural
To prevent significant materials from contacting storm water at the source, the SWPPP shall, at a minimum, include the following non-structural controls:

1) A program which includes a schedule for routine preventive maintenance. The preventive maintenance program shall consist of routine inspections and maintenance of storm water management and control devices (e.g., cleaning of oil/water separators and catch basins, routine housekeeping activities, etc.) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to the storm sewer system or the surface waters of the state. The routine inspection shall include areas of the facility in which significant materials have the reasonable potential to contaminate runoff. A written report of the inspection and corrective actions shall be maintained on file by the permittee, and shall be retained in accordance with Record Keeping, below;

2) Good housekeeping procedures to maintain a clean, orderly facility. Good housekeeping procedures shall include routine inspections that focus on the areas of the facility that have a reasonable potential to contaminate storm water runoff from the property. The routine housekeeping inspections may be combined with the routine inspections for the preventive maintenance program. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping below;

3) Regularly scheduled comprehensive site inspections. The inspections shall include, but not be limited to, the structural controls in use at the facility and the areas and equipment identified in the preventive maintenance program and good housekeeping procedures. The inspections shall also include a review of the routine preventive maintenance reports, good housekeeping inspections reports, and any other paperwork associated with the SWPPP. The comprehensive site inspection shall be conducted by the Certified Storm Water Operator at least quarterly. The permittee may request Department approval of an alternate schedule for comprehensive site inspections. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below. Included in the report shall be a certification that the facility is in compliance with this permit and the SWPPP;

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4) Material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the SWPPP and made available to the appropriate personnel. The procedures shall identify measures to prevent the spilled materials or material residues from contaminating storm water runoff from the property. The SWPPP shall include language describing what a reportable spill or release is and the appropriate reporting requirements in accordance with Part II.C.6. and Part II.C.7. of the permit. The SWPPP may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code); a Hazardous Waste Contingency Plan prepared in accordance with 40 CFR 264 and 265 Subpart D, as required by Part 111 of the Michigan Act; or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112;

5) Measures used to control soil erosion and sedimentation including identification of the areas that, due to topography, activities, or other factors, have a high potential for significant soil erosion. Gravel lots are to be included;

6) Employee training programs which will be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. The SWPPP shall include a description of the employee training programs and shall identify periodic dates for such training (recommended at least once per year). Records of the employee training program shall be retained in accordance with Record Keeping, below; and

7) Actions being taken to limit the discharge of significant materials in order to comply with TMDL requirements.

The SWPPP shall identify significant materials expected to be present in storm water discharges following implementation of non-structural preventative measures and source controls.

c. Structural Controls for Prevention and Treatment
Where implementation of the measures required by Preventive Measures and Source Controls, Non-Structural; above; does not control storm water discharges in accordance with Water Quality Standards, below, the SWPPP shall provide a description of the location, function, design criteria, and installation/construction schedules of structural controls for prevention and treatment. Structural controls may be necessary:

1) To prevent uncontaminated storm water from contacting or being contacted by significant materials, and/or

2) If preventive measures are not feasible or are inadequate to keep significant materials at the site from contaminating storm water. Structural controls shall be used to treat, divert, isolate, recycle, reuse or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with the Water Quality Standards, below.

d. Keeping SWPPPs Current
1) The permittee and/or the Certified Storm Water Operator shall review the SWPPP on or before June 1 of each year, and maintain written summaries of the reviews in accordance with Record Keeping, below. Based on the review, the permittee and/or the Certified Storm Water Operator shall amend the SWPPP as needed to ensure continued compliance with the terms and conditions of this permit.

2) The SWPPP developed under the conditions of a previous permit shall be amended as necessary to ensure compliance with this permit.

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3) The SWPPP shall be updated or amended whenever changes at the facility have the potential to increase the exposure of significant materials to storm water, significant spills at the facility occur, or when the SWPPP is determined by the permittee or the Department to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Updates based on increased activity at the facility shall include a description of how the permittee intends to control any new sources of significant materials or respond to and prevent spills in accordance with the requirements of Source Identification; Preventive Measures and Source Controls, Non-Structural; and Structural Controls for Prevention and Treatment; above.

4) The Department or authorized representative may notify the permittee at any time that the SWPPP does not meet minimum requirements. Such notification shall identify why the SWPPP does not meet minimum requirements. The permittee shall make the required changes to the SWPPP within 30 days after such notification from the Department or authorized representative and shall submit to the Department a written certification that the requested changes have been made.

5) Amendments to the SWPPP shall be signed and retained on-site pursuant to Record Keeping, below.

e. Certified Storm Water Operator Requirements
A Certified Storm Water Operator certified by the Department is required by Section 3110 of the Michigan Act. The Certified Storm Water Operator shall have supervision over the facility's storm water treatment and control measures included in the SWPPP. The names and certification numbers of the Certified Storm Water Operators shall be included in the SWPPP.

If the Certified Storm Water Operator is changed or an additional Certified Storm Water Operator is added, the permittee shall provide the name and certification number of the new Certified Storm Water Operator to the Department. If a facility has multiple Certified Storm Water Operators, the names and certification numbers of the Certified Storm Water Operators shall be included in the SWPPP.

f. Signature and SWPPP Review
1) The SWPPP shall be signed by the Certified Storm Water Operator and by either the permittee or an authorized representative in accordance with 40 CFR 122.22. The SWPPP and associated records shall be retained on-site at the facility which generates the storm water discharge.

2) The permittee shall make SWPPPs, reports, log books, storm water discharge sampling data (if collected), and items required by Record Keeping below, available upon request to the Department or authorized representative.

g. Record Keeping
The permittee shall maintain records of all SWPPP related inspection and maintenance activities. Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water runoff. All such records shall be retained for three (3) years.

h. Water Quality Standards
At the time of discharge, there shall be no violation of the Water Quality Standards in the receiving waters as a result of the storm water discharge. This requirement includes, but is not limited to, the following conditions:

1) In accordance with Rule 323.1050 of the Water Quality Standards, the receiving waters shall not have any of the following unnatural physical properties as a result of this discharge in quantities which are or may become injurious to any designated use: turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits;

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2) Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department followed by a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition; and

3) Any pollutant for which a level of control is specified to meet a TMDL established by the Department shall be controlled at the facility so that its discharge is reduced by/to the amount specified in the TMDL.

i. Prohibition of Non-storm Water Discharges
Discharges of material other than storm water shall be in compliance with an NPDES permit issued for the discharge. Storm water shall be defined to include the following non-storm water discharges provided pollution prevention controls for the non-storm water component are identified in the SWPPP: discharges from fire hydrant flushing, potable water sources including water line flushing, water from fire system testing and fire fighting training without burned materials or chemical fire suppressants, irrigation drainage, lawn watering, routine building wash down which does not use detergents or other compounds, pavement wash water where toxic or hazardous materials have not occurred (unless all contamination by toxic or hazardous materials have been removed) and where detergents are not used, air conditioning condensate, springs, uncontaminated groundwater, foundation or footing drains where flows are not contaminated with process materials such as solvents, and discharges from fire fighting activities. Discharges from fire fighting activities are exempted from the requirement to be identified in the SWPPP.

17. Storm Water Detention and Treatment System Report, Outfall 011

On or before July 1, 2017, the permittee shall submit a report to the Department summarizing the effectiveness of the constructed storm water detention and treatment system discharging to the Thornapple River via Outfall 011. The study shall address the following items:

a. The report shall include:
- a summary of overall effectiveness of the treatment system for loading removal and concentration reductions for $CBOD_5$ and Ammonia Nitrogen,
- a summary of influent data with a comparison to effluent data collected during the same de-icing event,
- a summary of seasonal and event based effectiveness (event based effectiveness shall compare events of varying duration and intensity); and
- additional sampling data collected per the requirements in Part I.A.17.b. below.

The permittee shall collect enough samples as to be considered representative of the discharge for the treatment system effectiveness report.

b. Additional Sampling Requirement
- As a condition of this permit, the permittee shall collect data from Monitoring Point 011 for the constituents, specified below, for two significant de-icing events.

Hardness
calcium carbonate

Metals (Total Recoverable), Cyanide and Total Phenols (Quantification levels in parentheses)

antimony (1 µg/l)	arsenic (1 µg/l)	available cyanide (2 µg/l) using Method OIA – 1677	
barium (5 µg/l)	beryllium (1 µg/l)	boron (20 µg/l)	cadmium (0.2 µg/l)
chromium (5 µg/l)	copper (1 µg/l)	lead (1 µg/l)	nickel (5 µg/l)
selenium (1 µg/l)	silver (0.5 µg/l)	thallium (1 µg/l)	zinc (5 µg/l)
total phenolic compounds			

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Volatile Organic Compounds

acrolein	acrylonitrile	benzene	bromoform
carbon tetrachloride	chlorobenzene	chlorodibromomethane	chloroethane
2-chloroethylvinyl ether	chloroform	dichlorobromomethane	1,1-dichloroethane
1,2-dichloroethane	trans-1,2-dichloroethylene	1,1-dichloroethylene	1,2-dichloropropane
1,3-dichloropropylene	ethylbenzene	methyl bromide	methyl chloride
methylene chloride	1,1,2,2,-tetrachloroethane	tetrachloroethylene	toluene
1,1,1-trichloroethane	1,1,2-trichloroethane	trichloroethylene	vinyl chloride

Acid-Extractable Compounds

p-chloro-m-cresol	2-chlorophenol	2,4-dichlorophenol	2,4-dimethylphenol
4,6-dinitro-o-cresol	2,4-dinitrophenol	2-nitrophenol	4-nitrophenol
Pentachlorophenol	phenol	2,4,6-trichlorophenol	

Base/Neutral Compounds

acenaphthene	acenaphthylene	anthracene	benzidine
benzo(a)anthracene	benzo(a)pyrene	3,4-benzofluoranthene	benzo(ghi)perylene
benzo(k)fluoranthene	bis(2-chloroethoxy)methane	bis(2-chloroethyl)ether	bis(2-chloroisopropyl)ether
bis(2-ethylhexyl)phthalate	4-bromophenyl phenyl ether	butyl benzyl phthalate	2-chloronaphthalene
4-chlorophenyl phenyl ether	chrysene	di-n-butyl phthalate	di-n-octyl phthalate
dibenzo(a,h)anthracene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene
3,3'-dichlorobenzidine	diethyl phthalate	dimethyl phthalate	2,4-dinitrotoluene
2,6-dinitrotoluene	1,2-diphenylhydrazine	fluoranthene	fluorene
Hexachlorobenzene	hexachlorobutadiene	hexachlorocyclo-pentadiene	hexachloroethane
indeno(1,2,3-cd)pyrene	isophorone	naphthalene	nitrobenzene
n-nitrosodi-n-propylamine	n-nitrosodimethylamine	n-nitrosodiphenylamine	phenanthrene
pyrene	1,2,4-trichlorobenzene		

Additional Parameters

Total Suspended Solids	Total Aluminum	Total Cobalt	Total Iron
Total Phosphorus	Total Manganese	Total Molybdenum	Nitrate-Nitrite (as N)
Oil & Grease	Sulfate (as SO4)	Propylene Glycol	Total Dissolved Solids
Total Vanadium	Total Alkalinity	Chloride	Total Calcium
Chemical Oxygen Demand	Total Potassium	Total Sodium	Conductivity
Acetate	Nitrogen, Total Organic (as N)		

If, upon review of the analysis, it is determined that additional requirements are needed to protect the receiving waters in accordance with applicable water quality standards, the permit may then be modified by the Department in accordance with applicable laws and rules.

Nothing in this section obviates the permittee from properly submitting reports and forms as required by law.

The Storm Water Detention and Treatment System Report for Outfall 011, including information, measures, and data, shall be used to quantify the parameters that may be present in the discharge. A detectable quantity of a pollutant does not necessarily indicate that the discharge is exceeding water quality standards.

PART II

Section A. Definitions

This list of definitions may include terms not applicable to this permit.

Acute toxic unit (TU_A) means $100/LC_{50}$ where the LC_{50} is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

Bioaccumulative chemical of concern (BCC) means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

Biosolids are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

Bulk biosolids means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

Chronic toxic unit (TU_C) means 100/MATC or $100/IC_{25}$, where the maximum acceptable toxicant concentration (MATC) and IC_{25} are expressed as a percent effluent in the test medium.

Class B Biosolids refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

Daily concentration is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. If the parameter concentration in any sample is less than the quantification limit, regard that value as zero when calculating the daily concentration. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen). When required by the permit, report the maximum calculated daily concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the Discharge Monitoring Reports (DMRs).

For pH, report the maximum value of any individual sample taken during the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs and the minimum value of any individual sample taken during the month in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. For dissolved oxygen, report the minimum concentration of any individual sample in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Daily loading is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs.

Department means the Michigan Department of Natural Resources and Environment.

Detection Level means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

PART II

Section A. Definitions

Discharge Event is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14 day period.

EC_{50} means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

Fecal coliform bacteria monthly is the geometric mean of the samples collected in a calendar month (or 30 consecutive days). The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMRs. FOR SEASONAL LAGOON DISCHARGES ONLY: If the period in which the discharge occurred was partially in each of two months, the monthly average shall be reported on the DMR of the month in which the last day of discharge occurred..

Fecal coliform bacteria 7-day is the geometric mean of the samples collected in any 7-day period. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. FOR SEASONAL LAGOON DISCHARGES ONLY: If the seven day period was partially in each of two months, the seven day average shall be reported on the DMR of the month in which the last day of discharge occurred.

Flow Proportioned sample is a composite sample with the sample volume proportional to the effluent flow.

Grab sample is a single sample taken at neither a set time nor flow.

Geometric Mean is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

IC_{25} means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference.]

Land Application means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

LC_{50} means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

Maximum acceptable toxicant concentration (MATC) means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

MGD means million gallons per day.

PART II

Section A. Definitions

Monthly monitoring frequency refers to a calendar month. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

Monthly concentration is the sum of the daily concentrations determined during a reporting month (or 30 consecutive days) divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMRs. FOR SEASONAL LAGOON DISCHARGES ONLY: If the period in which the discharge occurred was partially in each of two months, the monthly average shall be reported on the DMR of the month in which the last day of discharge occurred.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Monthly loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined in the reporting month (or 30 consecutive days). The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMRs. FOR SEASONAL LAGOON DISCHARGES ONLY: If the period in which the discharge occurred was partially in each of two months, the monthly average shall be reported on the DMR of the month in which the last day of discharge occurred.

National Pretreatment Standards are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

No observed adverse effect level (NOAEL) means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

Noncontact Cooling Water is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

Nondomestic user is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

Partially treated sewage is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's National Pollutant Discharge Elimination System permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

Pretreatment is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

POTW is a publicly owned treatment works.

Quantification level means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

PART II

Section A. Definitions

Quarterly monitoring frequency refers to a three month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

Regional Administrator is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

Significant industrial user is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Significant Materials Significant Materials means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111 of the Michigan Act; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Tier I value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

Tier II value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

Total Maximum Daily Loads (TMDLs) are required by the Federal Act for waterbodies that do not meet Water Quality Standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet Water Quality Standards and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

Toxicity Reduction Evaluation (TRE) means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

Water Quality Standards means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of Act No. 451 of the Public Acts of 1994, as amended, being Rules 323.1041 through 323.1117 of the Michigan Administrative Code.

Weekly monitoring frequency refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

Yearly monitoring frequency refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

24-Hour Composite sample is a flow proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period.

PART II

Section A. Definitions

3-Portion Composite sample is a sample consisting of three equal volume grab samples collected at equal intervals over an 8-hour period.

7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. FOR SEASONAL LAGOON DISCHARGES ONLY: If the seven day period was partially in each of two months, the seven day average shall be reported on the DMR of the month in which the last day of discharge occurred.

7-day loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during any 7 consecutive days in a reporting month. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs. FOR SEASONAL LAGOON DISCHARGES ONLY: If the seven day period was partially in each of two months, the seven day average shall be reported on the DMR of the month in which the last day of discharge occurred.

PART II

Section B. Monitoring Procedures

1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 - Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Chief of the Permits Section, Water Resources Division, Michigan Department of Environmental Quality, P.O. Box 30458, Lansing, Michigan, 48909-7773. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

3. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

PART II

Section C. Reporting Requirements

1. Start-up Notification

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Department within 14 days following the effective date of this permit, and then 60 days prior to the commencement of the discharge.

2. Submittal Requirements for Self-Monitoring Data

Part 31 of Act 451 of 1994, as amended, specifically Section 324.3110(3) and Rule 323.2155(2) of Part 21 allows the department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self Monitoring" the permittee shall submit self-monitoring data via the Michigan DNRE Electronic Environmental Discharge Monitoring Reporting (e2-DMR) system.

The permittee shall utilize the information provided on the e2-Reporting website @ **https://secure1.state.mi.us/e2rs/** to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the department no later than the **20th day of the month** following each month of the authorized discharge period(s).

3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Water Resources Division, Michigan Department of Natural Resources and Environment. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittee shall certify, in writing, to the Department, on or before January 10th of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous years monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the Michigan Act or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department.

5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a written notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

PART II

Section C. Reporting Requirements

6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the Michigan Act, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

a. 24-hour reporting - Any noncompliance which may endanger health or the environment (including maximum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.

b. other reporting - The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit, or if the notice is provided after regular working hours call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventative measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24-hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;

b. that the permitted wastewater treatment facility was, at the time, being properly operated; and

c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

PART II

Section C. Reporting Requirements

9. Bypass Prohibition and Notification

a. Bypass Prohibition - Bypass is prohibited unless:

1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and

3) the permittee submitted notices as required under 9.b. or 9.c. below.

b. Notice of Anticipated Bypass - If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9.a. above.

c. Notice of Unanticipated Bypass - The permittee shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated on the second page of this permit (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

d. Written Report of Bypass - A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.

e. Bypass Not Exceeding Limitations - The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.10. of this permit.

f. Definitions

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

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

PART II

Section C. Reporting Requirements

10. Notification of Changes in Discharge

The permittee shall notify the Department, in writing, within 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

11. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under Rule 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.12.; and 4) the action or activity will not require notification pursuant to Part II.C.10. Following such notice, the permit may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

12. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of Rules 323.1098 and 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

13. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

PART II

Section D. Management Responsibilities

1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the Michigan Act and/or the Federal Act and constitutes grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of an application for permit renewal.

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

2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the Michigan Act. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the Michigan Act.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or

b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

PART II

Section D. Management Responsibilities

6. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code). For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the Michigan Act.

7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the Michigan Act, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department or the Regional Administrator, upon the presentation of credentials, and in compliance with Kent Count Department of Aeronautics, Federal Aviation Administration, and Transportation Security Administration rules and regulations:

a. to enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (Rule 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Federal Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Act and Sections 3112, 3115, 4106 and 4110 of the Michigan Act.

PART II

Section E. Activities Not Authorized by This Permit

1. Discharge to the Groundwaters

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the Michigan Act.

2. POTW Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW must be by permit issued under Part 41 of the Michigan Act.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Federal Act except as are exempted by federal regulations.

5. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Federal Act.

6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Natural Resources and Environment permits, or approvals from other units of government as may be required by law.

Appendix B
GFIA Spill History/Std. Spill Reporting Form

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Michigan's Part 5 Spillage of Oil and Polluting Materials administrative rules were promulgated pursuant to Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act. The Rules address release prevention planning, secondary containment, surveillance, and release reporting requirements. They also include a list of "polluting materials" with threshold reporting quantities for "releases". Section 3.4 of the SWPPP discusses the release required to result in a "reportable spill". The definition of a "release" is defined further below:

Rule 324.2002(b) "**Release**" is defined in section 20101(1)(ll) of the act. For the purposes of this rule, "release" does not include any of the following:

(i) Spilling, leaking, or discharging less than 1000 gallons of a polluting material into a secondary containment structure that complies with these rules, if recovery of the material spilled, leaked, or discharged is initiated within 24 hours of detection, is completed as soon as practicable, but not more than 72 hours after detection, and if no polluting materials are released directly or indirectly to any public sewer system or to the surface waters or groundwaters of this state.

(ii) Spilling, leaking, or discharging less than 55 gallons of oil to the ground surface, if the spill, leak, or discharge is detected and the oil recovered within 24 hours of the spill, leak, or discharge, and if oil is not released directly or indirectly to any public sewer system or to the surface waters or groundwaters of this state.

(iii) Spilling, leaking, or discharging less than 55 gallons of oil to the surface waters of this state, if effective recovery measures are implemented in response to the spill, leak, or discharge immediately upon detection.

(iv) Releases of air contaminants as defined in section 5501(a) of the act.

(v) Permitted releases as defined in section 20101(1)(aa) of the act.

(ll) "**Release**" includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of a hazardous substance into the environment, or the abandonment or discarding of barrels, containers, and other closed receptacles containing a hazardous substance.

Appendix C
Inspection and Training Forms

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Comprehensive Quarterly Inspection Checklist
Gerald R. Ford International Airport, Grand Rapids, Michigan

Yes	No	N/A	Item
			1. Drainage
			Monthly outfall inspections completed since last inspection?
			Issues/problems identified during monthly outfall inspections? (if yes, include followup discussion)
			Onsite Drainage Network
			Have any catchbasins required maintenance since last inspection?
			Swales/Open Drains on-site showing signs of erosion?
			Any on-site indications of spills observed during daily airfield inspections?
			(If yes to any of the above, include followup discussion)
			Construction Projects
			Are there currently any construction projects on airport property that require an SESC permit?
			If yes, has the contractor/developer obtained SESC permits from the Township?
			2. Materials Storage
			Glycols/Pavement Deicing Materials
			Do the Glycol and Pavement deicing inventories in SWPPP Table 3-2 appear to be correct?*
			Do aircraft deicing fluid storage areas appear to be in a neat and orderly fashion?
			Are there any visual signs of spills and leaks?
			Are spill response materials/equipment available/nearby?
			Provide additional comments on issues and followup actions as appropriate.
			Fuel Handling (consider all fuel storage areas - Farm, FBOs, Tenants, KCDA, KCRC)
			Are Policies and Procedures being Followed (e.g. Handling/Storing of Haz. Substances and Materials)
			If yes, are tenant inspection records available (fuel storage areas and mobile refuelers)?
			Monthly KCDA SPCC inspection records completed since last semi-annual inspection?
			Overall condition of fuel storage areas checked
			Any maintenance/repairs required since last inspection?
			Signs of spills or leaks observed since last inspection?
			Are spill kits/equipment available/nearby?
			Do any storage containers show signs of corrosion or need for repair?
			Provide additional comments on issues and followup actions as appropriate.
			Other Materials Storage and/or Tenant activities
			Do the materials and general quantities shown in SWPPP Table 3-2 appear to be correct?*
			Are outdoor storage areas (KCDA and tenant areas) kept in a neat and orderly fashion?
			Do outdoor storage areas (KCDA and tenant areas) show any signs improper activities?
			Drums stored outside without proper containment?
			Municipal dumpsters with open lids?
			Other?
			Salt/Sand Storage (KCDA domes, KCRC domes, Car rental facilities)
			Is storage under roof or protected from precipitation?
			Are there any signs of outdoor storage, or unplanned releases to the environment?
			Other Issues
			Provide additional comments on issues and followup actions as appropriate.
			3. SWPPP Review, Recordkeeping and Documentation
			Training records current.
			Current version of Annual Deicing Management and Monitoring Plan included.
			Were any revisions made since the last comprehensive inspection?
			If yes, have the revisions been documented?
			Current versions of the Airport Rules and Regulations included?
			Current versions of the Airport Policies and Procedures on handling/storing hazardous substances included?
			Is the tenant list in Table 3-1 correct?
			Have any spills occurred since the last inspection?
			If yes, have they been reported or documented?
			Have any additional best management practices been added since the last inspection?
			Provide additional comments on issues and followup actions as appropriate.

* - Table 3-2 provides a general inventory based on the comphensive inspection
While the quantities will vary from inspection to inspection, please indicate if there are significant increases or decreases known to be present with respect to material storage and use.

Inspection Date: _____

Inspectors: _____

Quarterly Inspection Comments
Gerald R. Ford International Airport, Grand Rapids, Michigan

Comment No.

Comprehensive Quarterly Inspection Checklist

Gerald R. Ford International Airport, Grand Rapids, Michigan

The Airport continues to be in compliance with the SWPPP and terms of its NPDES permit.

Certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Completed By: _____ Date: _____

STORM WATER POLLUTION PREVENTION PLAN
MONTHLY OUTFALL INSPECTION FORM

Completed by:

Date: _____ Time: _____ a.m. _____ p.m.

Time since last precipitation: Type of precipitation:

Hours Days ☐ Rain ☐ Snow ☐ Sleet ☐ Hail

Quantity of precipitation: _____ Inches

Flow observed: ☐ Yes ☐ No

CONTINUE IF FLOW IS OBSERVED. Visual Inspection:

COLOR	ODOR	FOREIGN MATERIAL	OIL SHEEN
☐ Clear	☐ Not Present	☐ Not Present	☐ Not Present
☐ Cloudy	☐ Present	☐ Present	☐ Present
☐ NA	☐ NA	☐ NA	☐ NA

Outfall location (i.e., sewer manhole/drainage ditch location):
O

Temperature (use descriptors such as hot or cold if thermometer is not available:

Volume (gallons/minute):

☐ None ☐ Low ☐ Moderate ☐ High

Review of structural controls:

☐ Road Culvert ☐ Drainage Ditch ☐ Detention Basin Other:

Suspected potential sources of storm water contamination and comments:

General comments:

Employee Stormwater Management Training Record

Gerald R. Ford International Airport, Grand Rapids, Michigan

Training Date:	
Trainer:	
Trainer Signature	
Topics Covered:	

Employee Training Record		
Name	**Company**	**Signature**

Note: To be completed during initial and subsequent annual SWPPP training. Keep documentation of training with current copy of the SWPPP.

Appendix D
GFIA Rules and Regulations

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GERALD R. FORD INTERNATIONAL AIRPORT

RULES & REGULATIONS

Adopted: July 1, 2016
Amended: N/A

CONTENTS

GERALD R. FORD INTERNATIONAL AIRPORT AUTHORITY
RULES & REGULATIONS

1. ORGANIZATION

1.1 TITLE

This Resolution may be cited as the Gerald R. Ford International Airport Authority Rules and Regulations.

1.2 AUTHORITY

This Resolution is created pursuant to authority granted by the Michigan Aeronautics Code MCLA 259.133.

1.3 PURPOSE

A. The Airport is operated by the Gerald R. Ford International Airport Authority created by Public Act 95 of 2015 and is certified by the Federal Aviation Administration as a Commercial Service Airport.

B. These Rules and Regulations have been adopted by the Gerald R. Ford International Airport Authority Board, and are issued pursuant to the authority by the Aeronautics Code of the State of Michigan for the construction and operation of airports under its control and to safeguard the public. The provisions of this document are intended to provide for the safe, orderly, and efficient operation of the Airport.

C. Violation of these Rules and Regulations shall subject the offender to administrative action by the Gerald R. Ford International Airport Authority and to penalties for such violations as provided in Section 1.9 of these Rules and Regulations.

1.4 SCOPE

A. The Airport is governed by the Gerald R. Ford International Airport Authority Board under the Rules and Regulations set forth herein, the rules and regulations of the Michigan Aeronautics Commission, Federal Aviation Administration, Transportation Security Administration and other applicable Federal, State, and local rules and regulations.

B. All users of and any persons on the Airport property shall be governed by these Rules and Regulations and by any emergency directives issued by the President & CEO pursuant to these Rules and Regulations. It shall be the responsibility of all persons, firms, and corporations operating on the Airport to acquaint themselves with and adhere to the Rules and Regulations contained herein at all times. These Rules and Regulations supersede all those previously published, and are subject to change by the Board at any time.

C. These Rules and Regulations are not intended to amend, modify or supersede any provision of Federal, State, county, city or township law and/or ordinances, or any specific contractual agreement of the Gerald R. Ford International Airport Authority Board with which they may conflict, and shall, insofar as possible, be interpreted so that no such conflict shall exist.

1.5 DEFINITIONS

The following words and phrases, as used in the Gerald R. Ford International Airport Authority Rules and Regulations, shall have the meanings indicated herein:

(1) Accident: A collision between an aircraft, vehicle, person, stationary object or other property that results in property damage, bodily injury or death. An entry into or emerging from a moving vehicle or vehicle by a person, which results in bodily injury or death to such person or another person, or that results in property damage.

(2) Advertising: The action of calling something (as a commodity for sale, a service offer or desire) to the attention of the public by audio recording, posting, distributing or displaying signs, literature, circulars, pictures, sketches or other forms of printed or written material.

(3) Aeronautical Activity: Any activity or service that involves, makes possible, facilitates, is related to, assists with, or is required for the operation of Aircraft or another Aeronautical Activity, or which contributes to or is required for the safety of such operations.

(4) Agreement: A written contract, executed by both parties, and enforceable by law between the Board and an entity granting a concession, transferring rights or interest in land and/or improvements, and/or otherwise authorizing and/or prohibiting the conduct of certain Activities. Such Agreement will recite the terms and conditions under which the Activity will be conducted at the Airport including, but not limited to, term of the Agreement; rents, fees, and charges to be paid by the entity; and the rights and obligations of the respective parties. For purposes of clarification, the following terms may be substituted for the term Agreement – Lease or Concession.

(5) Air Operations Area (AOA): Restricted area of the Airport, either fenced or posted that provides access to locations where aircraft are parked or operated. Areas include, but are not limited to, the aircraft ramps, aprons, taxiways, runways, unimproved land attributed to the taxiways, runways and contiguous areas delineated for the protection and security of aeronautical activity.

(6) Air Traffic Control Tower (ATCT): Air traffic control facility located at the Airport, and operated by the Federal Aviation Administration, which controls activity on the Movement Areas of the Airport.

(7) Aircraft: Any contrivance now known or hereafter invented which is used or designed for navigation of or flight in the air, except a parachute or other contrivance designed for such navigation but used primarily as safety equipment.

This includes, but is not limited to, airplanes, airships, balloons, dirigibles, rockets, helicopters, gliders, gyrocopters, ground-effect machines, sailplanes, amphibians, and seaplanes.

(8) Aircraft Operator: A person who uses, causes to be used, or authorizes to be used an Aircraft, with or without the right of legal control (as owner, Grantee, or otherwise), for the purpose of air navigation including the piloting of Aircraft, or on any part of the surface of the Airport.

(9) Aircraft Rescue and Firefighting (ARFF): Fire protection and rescue for aircraft emergencies as provided by the Gerald R. Ford International Airport.

(10) Airport: Means the Gerald R. Ford International Airport and all land, improvements, and appurtenances within the legal boundaries of the Airport as it now exists on the Airport Layout Plan (or Exhibit A of the most recent FAA grant) and as it may hereinafter be extended, enlarged, or modified.

(11) Airport Certification Manual: A document required by the Federal Aviation Administration detailing the Airport's requirements as contained in 14 CFR Part 139.

(12) Airport Employee: Person of any organization, activity or government agency located on or contributing to the operation, maintenance or servicing of the Airport.

(13) Airport Management: The President & CEO, the Senior Vice President & COO, the Vice President & CFO, the Public Safety and Operations Director, the Facilities and Engineering Director, the Marketing and Communications Director, and the Human Resources Director complete the Airport management team referred to as Airport Management.

(14) Airport Operations: Part of Airport Management that provides oversight for all airport operations and administers personnel policies and procedures including discipline and is authorized to enforce airport rules and regulations.

(15) Airport Police: Airport Police Officers are provided by the Gerald R. Ford International Airport. They are authorized by statute with powers to arrest, and are responsible for the enforcement of the rules, regulations and laws applicable to the Airport, the State of Michigan and the Federal government.

(16) Airport Security Program: A document required by the Transportation Security Administration detailing the Airport's requirements as contained in Transportation Security Regulation Part 1542.

(17) Authority: The Gerald R. Ford International Airport Authority, a regional airport authority organized and existing by virtue of 2015 P.A. 95 and operated by the Gerald R. Ford International Airport Authority Board.

(18) Board: The Gerald R. Ford International Airport Authority Board, responsible for the administration of the Gerald R. Ford International Airport.

(19) Chief Executive Officer or CEO: The Authority's Chief Executive Officer as that term is used in The Regional Airport Authority Act, 2015 P.A. 95, or his designee, including anyone serving in the capacity of Interim or Acting CEO.

(20) Code of Federal Regulations (CFR): Codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

(21) Combustible Liquid: Any liquid having a flash point at or above 100 degrees Fahrenheit and below 200 degrees Fahrenheit.

(22) Commercial Activity: To provide or offer to provide goods, services or entertainment in return for financial remuneration or remuneration in kind or a promise of financial remuneration or remuneration in kind or to accept or agree to accept financial remuneration or remuneration in kind for the provision of goods, services or entertainment.

(23) Commercial Air Carrier: Any entity that undertakes directly by hire, lease or other arrangements to engage in the carriage by aircraft of persons or property for compensation. This definition includes, but is not limited to all classes of air carriers as defined by the Federal Aviation Administration.

(24) Commercial Transporter: Any entity operating a Commercial Vehicle or vehicles for the purpose of soliciting or transporting persons and/or baggage to and/or from the Airport for hire. Examples of Commercial Transporters include, but are not limited to taxicabs, limousines, hotel/motel courtesy vehicles, rental car courtesy vehicles, delivery vehicles and chartered or scheduled buses. This section is not intended to include the use of company owned/leased vehicles provided to employees for personal use.

(25) Commercial Transport Vehicle: Any vehicle used for the transportation of passengers, for hire or so constructed, or used to transport goods, wears or merchandise, and/or all vehicles designed and used for drawing other vehicles and so constructed as to carry any load thereon either independently or any part, or any part of, the weight of a vehicle or load so drawn.

(26) Commercial Vehicle Lane: Designated traffic lane, generally located in front of the Parking Structure. Such lane is reserved for use by Commercial Transporter Vehicles and is separated from the Vehicle Traffic Lane by a median.

(27) Concessionaire: An entity authorized by the Board through an agreement to undertake and profit by a specified activity including but not limited to a gift shop, restaurant or car rental agency.

(28) Contractor: A person or entity who, as part of an independent business, makes an agreement to do a specific piece of work, retaining control of the means and method of doing the job.

(29) Courtesy Vehicle: Any vehicle provided by a company to pickup customers and guests or others, and/or delivers said customers and guests or others to the Airport.

(30) Crosswalk: That portion of a roadway or parking lot included within the prolongation or connection of the lateral lines of sidewalks, intersections, or other portions of the roadway distinctly marked for pedestrian crossing by lines or other marking on the surface.

(31) Curb Front: Designated area along the Vehicle Traffic Lane and adjacent to the Airport Terminal Building for loading /unloading of passengers and baggage into and out of vehicles.

(32) Derelict Equipment: Any equipment that is not used on a regular basis for its intended purpose that is not reasonably required to be available for unscheduled use.

(33) Doping: The application of a preparation to strengthen and tighten aircraft fabric.

(34) Driver: A person who operates a vehicle or motor vehicle.

(35) Engine Run-up: The operation of any aircraft engine above idle speed for observation or maintenance purposes.

(36) Environmental Protection Agency (EPA): An agency of the Federal government responsible for the implementation and enforcement of Federal environmental laws and regulations.

(37) Escort: To accompany or supervise an individual(s) who does not have unescorted access authority to areas restricted for security purposes, as identified in the Airport Security Program.

(38) Federal Aviation Administration (FAA): The division within the Department of Transportation of the United States government that has the responsibility of promoting safety in the air, by both regulation and education.

(39) Firearm: Any weapon from which a dangerous object may be shot or propelled by the use of explosives, gas, air or mechanical means.

(40) First Amendment Rights Activities: All activities, including, but not limited to, leafleting and picketing that may be constitutionally protected forms of expression or religion.

(41) Fixed Base Operator (FBO): A commercial operator authorized and required, by agreement with the Board, to provide to the public the sale of products, services, and facilities to include, at minimum, the activities as required by the Airport's Minimum Standards.

(42) Flammable Liquids: Any liquid having a flash point of less than 100 degrees Fahrenheit when tested by closed-cup methods. This includes any other combustible liquids now used for aircraft fuels.

(43) Foreign Object Debris (FOD): Any object found in an inappropriate location that, as a result of being in that location, can damage equipment or injure airplane or airport personnel.

(44) Fueling Agent: Any entity, including its employees and agents, authorized by the President & CEO to dispense aviation or motor vehicle fuels at the Airport.

(45) Fuel Tanker Vehicle: A vehicle self-propelled or without power used to refuel aircraft or carry fuel.

(46) General Aviation: All phases of aviation other than aircraft manufacturing, military aviation and scheduled and non-scheduled Commercial Air Carrier operations.

(47) GRR: The FAA's identifier for the Airport.

(48) Hazardous Materials: Any hazardous or toxic substances, materials or wastes, including, but not limited to, those substances, materials, and wastes listed in the United States Department of Transportation Hazardous Materials Table (49 CFR 172.101) or by the Environmental Protection Agency as hazardous substances (40 CFR Part 302) and amendments thereto, or such substances, materials and wastes which are or become regulated under any applicable local, State or Federal law including, without limitation, any material, waste or substance which is petroleum or petroleum distillate, asbestos, polychlorinated biphenyls, defined as a "hazardous waste" pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. §6901, et seq. or defined as a "hazardous substance" pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §9601, et seq.

(49) Incident: An occurrence or event that interrupts normal procedure or operations, or precipitates an accident.

(50) Leafleting: The distribution of handbills, tracts, circulars, flyers, literature or other written or printed material for religious, charitable or other noncommercial purposes.

(51) Loading Gate: The space reserved for the loading and unloading of aircraft at the terminal concourse.

(52) Michigan Aeronautics Commission: The agency created by the State of Michigan under Public Act 327 of the Public Acts of Michigan for 1945 or any successor thereto established by law.

(53) Michigan Department of Environmental Quality (MDEQ): A department of the State of Michigan with authority for the Federal Clean Water Act and Michigan Waste Water Commission Act Part 31 of Public Act 451 of 1994, as amended.

(54) Minimum Standards: Those qualifications, standards, and criteria set forth, by the Board, as the minimum requirements that must be met as a condition for the right to engage in Aeronautical Activities at the Airport.

(55) Motor Vehicle: A vehicle which is self-propelled. This definition includes, but is not limited to, the following: automobiles, trucks, buses, limousines, semi-tractors, snowmobiles, motorcycles and mopeds.

(56) Movement Area: Runways, taxiways and their associated safety areas. Movement on these areas is controlled by the FAA/ATCT during periods when the ATCT is operational.

(57) Non-movement Area: Service areas (roads, ramps, taxiways) related to movement of aircraft and vehicles under the jurisdiction of the Airport. The ATCT may provide information for these areas that is advisory only and does not imply control or responsibility of non-movement areas.

(58) Off-Airport Rental Car Company: Any entity engaged in the business of renting motor vehicles to and for use by the public that conducts no part of its business operations, other than advertising, inside the Airport terminal.

(59) Operate: To physically manipulate the controls of an aircraft or motor vehicle necessary to put it in motion.

(60) Operating Directive: An immediate order issued by the President & CEO regarding procedures to insure handling, policing, and protection of the public while at the Airport and to insure compliance with all of the Federal, State and local laws, ordinances and regulations.

(61) Passenger Loading and Unloading Zone: An area at the Airport designated by the President & CEO and reserved for the exclusive use of vehicles that are actually engaged in loading or unloading of passengers and/or baggage.

(62) Permit: An operating certificate issued by the Board enabling a commercial entity to conduct Commercial and/or specific Aeronautical Activities at the airport.

(63) Person: Any individual, firm, partnership, corporation, company, association, and any trustee, receiver, assignee or similar representative thereof.

(64) Picketing: To demonstrate or protest, as part of a labor demonstration or otherwise, by assembling, patrolling, walking, marching, parading, posting or sitting-in.

(65) President & CEO: The Authority's Chief Executive Officer as that term is used in The Regional Airport Authority Act, 2015 P.A. 95, or his designee, including anyone serving in the capacity of Interim or Acting CEO.

(66) Private Vehicle: A vehicle (registered to an individual) transporting persons or property for which no charge is paid directly or indirectly by the passenger or by any

other entity, excepting and excluding any vehicle that is a courtesy vehicle as defined herein.

(67) Ramp (Apron): An area of the Airport within the AOA designated for the loading, unloading, servicing, or parking of aircraft.

(68) Rental Car: Any motor vehicle including, but not limited to, any automobile, truck, van or motorcycle whose owner holds such vehicle out for hire for the general public.

(69) Revocation: The discontinuance of a driver or firm's privilege to operate at the Airport with reinstatement of operating privileges to be permitted upon written approval of the President & CEO.

(70) Rules and Regulations: The provisions of duly passed resolutions and operating directives of the Board as well as any operating directives issued by the President & CEO.

(71) Runway: A surface reserved exclusively for the landing and take-off of aircraft.

(72) SASO (Specialized Aeronautical Service Operator): A commercial aeronautical operator that provides any one or a combination of Aeronautical Activities or aeronautical services. Examples of these services may include aircraft rental; flight training; aircraft maintenance; air ambulance; aircraft sales; avionics, instrument or propeller services; ground service equipment repair; aircraft ground handling; or other specialized commercial flight support businesses.

(73) Secured Area: A portion of an airport, specified in the airport security program, in which certain security measures specified in Part 1542 of 49 CFR Chapter XII are carried out. This area is where aircraft operators and foreign air carriers that have a security program under Parts 1544 or 1546 of this chapter enplane and deplane passengers and sort and load baggage, and any adjacent areas that are not separated by adequate security measures.

(74) Security Identification Display Area (SIDA): That portion of the AOA requiring each person to continuously display, on his/her outermost garment, above waist level, an Airport approved identification medium unless the individual is accompanied by an Airport approved escort.

(75) Significant Materials: Any material which could degrade or impair water quality, including but not limited to : raw materials, fuels, solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101 (14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code); Hazardous Waste as defined in Part 111 of the Michigan Act; fertilizers;

pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

(76) Smoking: Inhaling, exhaling, burning or carrying any lighted cigar, cigarette, pipe, weed, or plant. Also to include electronic cigarettes and personal vaporizers.

(77) Solicitation: A request, direct or indirect, for money, credit, property, financial assistance, or other thing of value in pursuit of a commercial activity or for religious, political or charitable purposes. Solicitation, as defined herein, shall be deemed completed when communicated to any person located upon the Airport regardless of whether or not the person making such solicitation receives any contribution or makes any sale referred to herein. Solicitation includes any entreaty or appeal where the soliciting person initiates face-to-face contact with any person, such as, without limitation, the gathering of signatures or circulation of a petition.

(78) Sterile Area: A portion of an airport defined in the airport security program that provides passengers access to boarding aircraft and to which that access generally is controlled by TSA, or by an aircraft operator under Part 1544 or 49 CFR Chapter XII or a foreign air carrier under Part 1546 of said chapter, through the screening or persons and property.

(79) Stopping, Standing or Parking: Any stopping or standing of a vehicle, whether occupied or not, except when necessary to avoid conflict with other traffic or in compliance with the direction of a law enforcement officer or traffic control signal, sign, or device.

(80) Storm Water Pollution Prevention Plan (SWPPP): A guide that provides pollution prevention planning guidance for facilities with a National Pollutant Discharge Elimination System (NPDES) storm water permit. The Airport has developed a SWPPP, which is an official document of the Airport that documents processes and procedures for ensuring that significant materials associated with activities at the airport do not come into contact, or have minimized contact with storm water.

(81) Substantial Damage: Damage or structural failure which adversely affects the structural strength, performance, or flight characteristics of the Aircraft and which would normally require major repair or replacement of the affected component(s).

(82) Suspension: The temporary discontinuance for up to 30 days of a driver's or a firm's privilege to operate at the Airport.

(83) Taxicab, Taxi, or Cab: A licensed public motor vehicle carrier which is not designed to carry more than 9 passengers and is licensed as such by the City of Grand Rapids or any other municipality.

(84) Taxicab Loading Zone: Designated area adjacent to the Airport Terminal Building for the loading/unloading of passengers and baggage into and out of Taxicabs under contract with the board.

(85) Taxicab Stand: An area assigned for the exclusive use of taxicabs (under contract with the Board) awaiting passengers.

(86) Taxiway: A surface used primarily by aircraft to proceed to and from ramps and runways.

(87) Tenant (Grantee/Permitee): A person, corporation, or any other entity who occupies or rents property on the Airport or who is authorized to conduct business operations of any kind upon the Airport premises regardless of whether or not a written agreement with the Board for such business exists.

(88) Terminal Building: Means the main airline terminal building at the Airport, including concourses and passenger loading bridges.

(89) Three Strikes Program: A program developed to ensure continued security awareness and compliance among Airport Employees, Tenants, Vendors and contractors.

(90) Transportation Security Administration (TSA): A division of the Department of Homeland Security created as a result of the Aviation and Transportation Security Act of 2001. The TSA is charged with the responsibility of day-to-day Federal security screening operations for passenger air transportation.

(91) Transportation Security Regulation (TSR): Federal regulation of the Transportation Security Administration as published in Title 49 of the Code of Federal Regulations.

(92) Ultralight Vehicle: A vehicle that is used only for aviation recreation, or sport aviation purposes, and satisfies all criteria and requirements of 14 CFR Part 103, including subsequent amendments.

(93) Vehicle: Every device in, upon, or by which a person or property is, or may be transported or drawn upon a roadway regardless of means of propulsion, except devices moved upon stationary rails or tracks.

(94) Vehicle Traffic Lane: Designated traffic lane, immediately adjacent to the front of the Airport Terminal Building. Such lane is generally reserved for use by non-Commercial Transporter Vehicles, valet, and private vehicles, unless otherwise authorized/designated.

(95) Vendor: Any person or entity that sells real property, goods, or services.

1.6 ADMINISTRATION AND POLICY

A. Administration of the terms of these Rules and Regulations shall be under the authority and control of the President & CEO.

B. Policymaking aspects of these Rules and Regulations reside with the Authority Board.

1.7 EMERGENCY POWERS OF THE PRESIDENT & CEO

When an emergency exists at the Airport, the President & CEO or his/her designated representative is empowered to issue such directives and to take such action that, within his/her discretion and judgment are necessary or desirable to protect persons and property and expedite the operation of the Airport. Such directives and actions of the President & CEO shall have the force of a regulation hereunder so long as said emergency exists.

1.8 CONFLICT WITH OTHER AUTHORITY

Should any part of these Rules and Regulations conflict with Federal or State law or local ordinance, then such Federal, State, or local authority will take precedence. The Rules and Regulations promulgated herein shall in no way supersede or abrogate regulations set forth in TSR Part 1542 (Airport Security) or 14 CFR Part 139 (Certification and Operations of Land Airports). If any provision of these Rules and Regulations or the application thereof to any person or circumstances is held invalid, the remainder of the Rules and Regulations shall not be affected thereby.

1.9 ENFORCEMENT

The President & CEO shall enforce the provisions of these Rules and Regulations and may call upon Airport Operations or Airport Police for such assistance as the President & CEO may from time to time require.

Civil Enforcement

Removal from the Airport: Any person who fails or refuses to comply promptly with the Rules and Regulations contained herein following notice of violation by the President & CEO, where such noncompliance interferes with the management, regulation or operation of the Airport and its facilities or creates any hazard or condition that endangers the public or Airport personnel or property, may be promptly removed or ejected from the Airport by the authority of the President & CEO.

Civil Fines: Any individual that violates these Rules and Regulations or violates the Airport Security Program or permits violations to occur on/in areas under their control shall be subject to fines by the President & CEO according to the schedule of fines set forth in Exhibit A. Fines not remitted within 30 calendar days from the date of issue shall increase by a factor of two; fines not remitted within 90 days of the date of issue shall increase by a factor of three.

A. Airport Employees: An Airport Employee's Airport-issued identification badge may be suspended during the period of time when an investigation into an

incident is taking place. Payment of any subsequent fines shall be required to reinstate the badge. Failure to pay fines may result in the permanent revocation of the employee's Airport-issued identification badge and loss of access privileges.

B. Concessionaires, Contractors, Tenants and Vendors: fines shall be regarded as additional rent, fees or contract back charges as the case may be and shall be enforced in the same manner and to the same extent as nonpayment of rent and fees under the lease or concession agreement or back charge against retainage, default or other remedy under contract.

1.10 APPEAL PROCESS

Any Company or individual may appeal any civil enforcement under section 1.9 or any violation of the Three Strikes Program under section 3.2, by following the steps below. Any revocation imposed pursuant to the 3rd Violation under section 3.2 shall be imposed immediately and not stayed pending an appeal hereunder. With respect to all other appealable penalties or violations, the imposition of same will be held in abeyance pending a proper and timely appeal to Step 1 or Step 2 as the case may be.

STEP #1 Appeal violation in writing to the Airport Police Chief. The Chief may rescind the violation if additional information presented establishes innocence. A decision will be made within three working days. If the Airport Police Chief is unavailable, an appeal may be initiated at Step 2.

STEP #2 If not satisfied with the outcome of a Step 1 appeal, an appeal may be brought to the Public Safety & Operations Director within three working days of the Step 1 decision. The Public Safety and Operations Director will render a decision within three working days of receipt of such appeal.

STEP #3 If not satisfied with the outcome of Step 2 appeal, an appeal may be brought to the Operations and Marketing Committee. The appeal should be presented in writing. The Committee typically meets once every month and appeals should be submitted by the end of the preceding month. The third step in the appeal process is final.

2. PERSONAL CONDUCT

2.1 COMPLIANCE WITH SIGNS

All persons shall observe and obey all posted signs, fences, doors, and barricades prohibiting entry into specified areas or governing the activities and demeanor of the public while on the Airport.

2.2 TRESPASSING

Any person or persons who fail to leave the Airport, or a specified area thereof; or any person or persons who knowingly or willingly violate these Rules and Regulations, or who refuse to comply therewith after proper request to do so by the President & CEO, shall be regarded as trespassing and shall be subject to removal from and denial of access to the Airport for such period of time as may be specified by the President & CEO.

A. No person(s), singly or in association with others, shall by his/her or their conduct or by congregating with others prevent any person or persons lawfully entitled thereto from the use and enjoyment of the Airport and its facilities or any part thereof, or prevent any other person or persons lawfully entitled thereto from passage from place to place, or through entrances, exits, or passageways on the Airport.

B. It shall be unlawful for any person to remain in or on any public area, place, or facility at the Airport in such a manner as to hinder or impede the orderly passage in or through or the normal or the customary use of such area, place, or facility by persons or vehicles entitled to such passage or use.

C. A person shall not trespass upon the area within the boundary of an approved or licensed airport, landing field, or other aeronautical facility, or operate or cause to be operated a vehicle or device, or conduct an activity upon or across a licensed airport, landing field, or other aeronautical facility, unless that operation or activity is authorized by the President & CEO.

2.3 PRESERVATION OF PROPERTY

No person may destroy, injure, deface, or disturb any building, sign, equipment, marker, or other structure, tree, flower, lawn, or other property on the Airport. Any person causing or being responsible for such actions will immediately report such event to the President & CEO. Failure to report such incidents may result in an assessed penalty.

2.4 PUBLIC SAFETY

No person shall adversely affect, or endanger the health or safety of the public or employees of the Airport.

3. SECURITY

The following provisions govern Airport Security at the Gerald R. Ford International Airport. The Airport Authority has overall responsibility for security at the Airport as described in TSR Part 1542 and further defined in the Airport's approved Airport Security Program. TSA directed security enhancements or measures as implemented by the Airport may supersede these Rules and Regulations. The Airport Authority reserves the right to deny, suspend or revoke the Airport-issued identification badge of any individual when, in the sole opinion of the Authority, that person poses a security threat.

3.1 SECURITY COMPLIANCE

Each Airport Tenant shall be responsible for the security of its leased/assigned premises, its employees and compliance with the Airport Security Program and other applicable programs and procedures (e.g. Three Strikes Program).

Each Airport Tenant shall be responsible for reimbursing the Authority any fines levied against the Authority by the TSA as a result of their failure or their employee's failure to comply with the provisions of the Airport Security Program or the Three Strikes Program.

All Airport Employees, Tenants, Vendors and Contractors shall comply with the provisions of this document. This will ensure security awareness in compliance with provisions of the Airport Security Program and the Three Strikes Program.

Any fines resulting from a violation of the Airport's Rules and Regulations not attributable to an individual employee shall be assessed to the appropriate Tenant, Vendor, or Contractor.

No person may make, or cause to be made, any of the following:

A. Any fraudulent or intentionally false statement in any application for any access or identification medium.

B. Any fraudulent or intentionally false entry in any record or report that is kept, made, or used to show compliance with the Airport Security Program.

C. Any reproduction or alteration, for fraudulent purposes, of any access or identification medium issued by the Authority.

No person may:

D. Tamper or interfere with, compromise, modify, attempt to circumvent, or cause a person to tamper or interfere with, the system, measure, or procedure of the Airport Security Program.

E. Enter or be present within a secured area, AOA, SIDA or sterile area without complying with the systems, measures or procedures being applied to control access to, or presence of or movement in such areas.

F. Use, allow to be used, or cause to be used, any Airport-issues or Airport-approved access or identification medium that authorizes the access, presence, or movement of persons or vehicles in secured areas, AOAs, or SIDAs in any other manner than for which it was issued.

It is a violation for any person to open or leave open, unlock or leave unlocked or leave unattended any perimeter security gate/door as described in the Airport Security Program, except when the gate/door is operated in compliance with the provisions of the Airport Security Program.

It is a violation for any person to enter an area which is controlled for security purposes unless they are appropriately displaying an Airport issued or Airport approved identification badge, or are under proper escort.

Each individual issued an identification badge by the Authority shall be responsible for challenge requirements as contained in the Airport Security Program.

Each individual/employee is responsible for their Airport issued ID badge. In the event a badge is lost or stolen, the employee shall report such to Airport Communications. If an individual/employee losses their Airport issued identification badge they shall be required to pay a lost badge fee, in addition to fees associated with the replacement of that badge.

It is a violation of any person to operate a vehicle (motorized or other) which is not identified in compliance with the Airport Security Program.

3.2 THREE STRIKES PROGRAM

The purpose of the Three Strikes Program is to develop and ensure continued security awareness and compliance among Airport Employees, Tenants, Vendors and Contractors. The program is applicable to all persons who have been issued a GRR Identification Badge.

A. INDIVIDUAL VIOLATIONS

Under the Three Strikes Program, a 3rd violation of the Airport Security Program may result in permanent revocation of the individual's ID Badge and access privileges. The process is as follows:

1st Violation - results in a warning notice, a copy of which is sent to the individual's employer. The individual is also required to complete an appropriate security training program within ten (ten) business days. Failure to do so will result in the temporary suspension of the individual's ID badge.

2nd Violation - results in a (3) working day suspension of the individuals GRR Secured Area, Sterile Area, Cargo or AOA Badge and the requirement to complete an appropriate security training program.

3rd Violation – may result in permanent revocation of the individual's GRR Secured Area, Sterile Area, Cargo or AOA Badge.

Below are the individual violations that are applicable to the Three Strikes Program:

- Failure to properly display identification badge
- Unauthorized presence in restricted area
- Failure to properly challenge
- Failure to properly identify a vehicle
- Failure to properly escort
- Using someone else's badge
- Allowing someone to use your badge
- Failure to secure an access point
- Piggybacking
- Failure to comply with any other provision of the Airport Security Program or applicable TSA Security Directive

All violations will be entered into a database for record keeping purposes. Violations will remain on file for a 12- month period.

B. TENANT, CONTRACTOR OR VENDOR VIOLATIONS

Any violation not attributable to an employee shall be assessed to the Tenant, Contractor, or Vendor responsible for the violation. The penalties are as follows:

1st Violation - results in a warning notice.

2nd Violation - results in a fine of $100

3rd Violation - results in a fine of $200

Fines assessed against Tenants, Contractors or Vendors for security violations will double with each subsequent offense. (Example: $100, $200, $400, $800, $1,600, etc.) All violations will be entered into a database for record keeping purposes. Violations will remain on file for a 12- month period.

4. PARKING AND VEHICLE OPERATIONS

4.1 PUBLIC PARKING

A. No person shall park or leave standing any vehicle, whether occupied or not, on Airport premises except within designated parking areas and then only in accordance with regulations governing the use of said areas.

B. No person shall double park any vehicle in any area.

C. No person shall park or leave any vehicle within areas designated as passenger loading and unloading zones other than while actually boarding or discharging persons or freight from the motor vehicle.

D. No person shall park, stop or leave standing any vehicle of any type, except within areas designated for the particular type of vehicle involved and then only in accordance with the posted regulations relating to the area and type of vehicle.

E. No person shall park a vehicle in excess of 60 days in the Long Term or 30 days in the Short Term Airport Parking Facilities. Vehicles parked in excess of the number of days mentioned herein are subject to tow or impound.

F. No person shall park any vehicle in such a manner that the vehicle shall not be entirely within one stall as designated by the lines or marks on the pavement. Persons using two or more parking spaces shall compensate the Authority according to the number of spaces used.

4.2 ENFORCEMENT OF VEHICLE PARKING

A. Airport Police Officers are authorized to immediately tow any vehicle parked in such a manner as to obstruct Airport vehicular traffic or such that it disrupts the orderly flow of pedestrian traffic.

B. A vehicle towed under this section shall be transported to a location for subsequent retrieval by the owner(s) thereof.

C. The owner of any vehicle parked at the Airport shall be deemed to have consented to pay the cost of removal and storage of the vehicle when the same is parked contrary to the provisions of this regulation.

4.3 EMPLOYEE PARKING

A. Parking is provided to airport-based employees. Parking for non-based crewmembers of Tenant airlines and their affiliates may be provided at the discretion of the Tenant manager and the President & CEO. Failure to comply with the use of the assigned parking area may result in the loss of parking privileges and/or loss of the Airport-issued identification badge or Airport-issued parking card.

B. Employee automobile parking permits or decals will be issued only to persons authorized by the President & CEO and will be valid only when used by the person to whom it was issued and while that person is an employee of an Airport Tenant.

C. The President & CEO is authorized to determine the period of time that any particular employee parking permit or decal will be valid and the fee to be required.

D. Lost, stolen, or unserviceable parking permits will be replaced at the employee's expense.

E. Employees utilizing parking permits will display, in the lower left-hand corner of the vehicle windshield, a numbered airport decal in serviceable condition. Parking permits are the property of the Authority and must be surrendered upon termination of parking privileges or upon sale or transfer of the vehicle.

F. Employees shall park only in the areas designated for employee parking by the President & CEO. Employees are not allowed to park in the parking structure even if they are willing to pay the parking fee unless using the structure for personal use.

G. Employees shall comply with any additional parking lot procedures and regulations promulgated by the President & CEO.

H. No person shall park a vehicle in excess of 30 days in the Airport Employee Parking Lot. Vehicles parked in excess of 30 days are subject to tow and impound. The Airport Employee will be responsible for all associated fees.

4.4 VEHICLE OPERATING REQUIREMENTS

Any person operating a motor vehicle on the Airport must possess a valid motor vehicle driver's license. Any person that has been granted Movement Area or Non-movement Area driving privileges must immediately inform Airport Communications upon having their motor vehicle driver's license suspended or revoked and refrain from driving on the Airport until otherwise allowed by the Authority. It shall be unlawful and in violation of these Rules and Regulations for any person to knowingly:

A. Fail to comply with any lawful order or direction of any law enforcement officer invested by law with authority to direct, control or regulate traffic.

B. Violate established programs controlling the operation of vehicles on the AOA or any other portion of the Airport. Vehicles operated on any portion of the AOA will also be identified and controlled in compliance with the Airport Security Program.

C. Operate any vehicle other than an aircraft on the movement area of the Airport without using an Authority approved light. Vehicles accompanied by an approved escort vehicle with an Authority approved light shall be exempt from application of this subsection.

D. Clean or make repairs to vehicles on the Airport, except those vehicles owned and operated by a Tenant. All cleaning and repair of vehicles approved by the President & CEO shall be performed in designated areas meeting Federal, State and local laws and regulations covering vehicle cleaning and repair activities.

E. Operate a vehicle on the AOA without a functioning exhaust system.

F. Operate a vehicle on the AOA without fully functioning emergency brakes, taillights and, during the hours between one half hour before sunset and one half hour after sunrise and during other times when visibility is less than 3 miles, headlights. If the vehicle's lights are inoperative, the vehicle shall not be operated during the above time period until repairs are completed.

G. Operate a vehicle on the Non-movement Area without a "D" or "M" designation on their airport issued identification badge. Vehicles accompanied by an approved escort vehicle shall be exempt from this requirement.

H. Operate a vehicle on the Movement Area without prior approval from the Authority and proper clearance from the ATCT.

I. Fail to maintain ground equipment free from leakage of engine fluids, excessive discharge of exhaust gasses, and excessive noise. If any of the above conditions exist, the vehicle shall be repaired in a timely manner. The President & CEO may order the equipment out of service until necessary repairs are completed.

J. Operate a vehicle in excess of 20 mph on the ramp and 15 mph within 50 feet of an aircraft or building.

K. Fail to give aircraft and pedestrians the right of way over vehicles on the AOA.

L. Operate any vehicle between an aircraft and a gate or under a passenger loading bridge.

M. Park a vehicle near any aircraft in such a manner so as to prevent it or the other ground equipment from being readily driven or towed away from the aircraft in case of an emergency.

N. Park a vehicle or equipment in such a manner as to restrict the safe and efficient movement of other motorized ground equipment or aircraft on any portion of the AOA.

O. Park a vehicle of equipment in an area that is not approved by the President & CEO for such parking.

P. Park vehicles or equipment not related to baggage handing in the baggage makeup area.

Q. Use studded tires or chains on any paved Airport surface.

4.5 ACCIDENTS

All persons involved in an accident on the Airport shall report to an Airport Law Enforcement Officer or in the event of an aircraft related incident report to an Operations Supervisor, as soon after the accident as possible, furnishing their names, addresses, and any other required information. The individual concerned is responsible for making such additional reports as may be required by Federal, State and local laws and regulations.

5. COMMERCIAL GROUND TRANSPORTATION

A. No Commercial Transporter, unless authorized by the President & CEO may use the facilities of the Airport for soliciting for the transportation of passengers from the Airport unless the transportation has been prearranged by the passenger.

B. Compliance with Federal, State and Local Laws and Ordinances: No Commercial Transport vehicle shall be operated in violation of traffic

ordinances established by Federal, State and local laws or ordinances, nor in any event without proper regard for the public safety and welfare.

C. Compliance with Rules and Regulations: No Commercial Transport vehicle shall be operated in violation of the Rules and Regulations

D. Compliance with Federal, State and Local Licensing Regulations: No Commercial Transport vehicle shall be operated on the property of the Airport until such vehicle has been registered in accordance with all appropriate requirements of Federal, State and local laws or ordinances and all proper licenses have been obtained therefore.

E. Vehicles Subject to Inspection: The President & CEO or his/her designee shall have the right at any time (upon display of proper identification) to enter into or upon any Commercial Transport vehicle for the purpose of determining that all the provisions of these Rules and Regulations are being properly adhered to. After such inspection, any vehicle found to be unsuitable in accordance with provisions as set forth in these Rules and Regulations may be immediately barred from Airport property by the President & CEO.

F. Commercial Loading/Unloading Zones: Upon entry onto Airport property without passengers or after discharging passengers at the airport terminal, each Commercial Transport vehicle shall proceed to the proper parking area designated by the President & CEO or leave the Airport property.

G. Loading and Unloading: Commercial Transport vehicles authorized to operate on the property of the Airport shall use only the commercial loading/unloading areas designated by the President & CEO for such purpose. Use of the commercial loading/unloading areas shall be in accordance with any regulations set forth by the President & CEO.

Ground transportation concessionaire's transporters shall remain in queue while in the taxicab hold area and proceed to the taxicab loading zone on a "first-in/first-out" basis. The taxicab in position to be loaded may not refuse a properly presented fare. Taxicabs in the taxicab loading zone that have been hired for an incoming fare which has not arrived must proceed out of the taxicab loading zone to the nearest open space within the passenger loading/unloading zone.

H. Soliciting: No person may solicit passengers or fares on the property of the Airport except as allowed under these Rules and Regulations.

I. Vehicle Appearance and Condition: All Commercial Transporter Vehicles must conform to a standard of cleanliness established by the President & CEO.

(1) The exterior of Commercial Transport Vehicles shall be maintained in a clean, undamaged condition and present a favorable appearance. Exterior of Commercial Transport

Vehicles shall include body paint, all glass, hubcaps, head and tail lights, grills, bumpers and body trim. Commercial Transport Vehicles that have been damaged and can be driven safely in accordance with State law and without reduction to the customers' comfort shall be given a 3 week grace period to perform needed repairs. After such time, the vehicle will be restricted from operating at the airport until proper repairs are made.

(2) The interior of approved Commercial Transport Vehicles, including the trunk, shall be maintained in a condition so as to be free of grease, dirt and trash. Passengers shall be able to use the seats and trunk of the vehicles without fear of soiling or damaging either their wearing apparel or their luggage. Interior seat fabric must not be ripped, torn or have holes.

(3) All Commercial Transport Vehicles must be free from leakage of engine fluids, excessive discharge of exhaust gasses and excessive exhaust noise. In addition, all heating and/or air conditioning units must be operational.

(4) Driver's Appearance: Commercial Transport Vehicle drivers shall be properly attired in a clean shirt or blouse with collar, and slacks or skirts. Drivers shall wear shoes or dress boots with socks (no sandals permitted). Drivers shall be clean shaven or have facial hair neatly trimmed and maintain a well groomed appearance and sanitary hygiene.

(5) Driver Conduct: Each driver of a Commercial Transport Vehicle shall remain in his/her vehicle or immediately adjacent to his/her vehicle at all times while such vehicle is upon the property of the Airport except for those drivers who get out and leave their vehicle in the queue to use the restroom facilities. Taxicab drivers must remain in their vehicles when in the taxicab hold area and the taxicab loading zone. Nothing in this Section shall be held to prohibit any driver from aligning to a street or sidewalk for the purpose of assisting passengers into or out of his/her vehicle.

Each driver of a Commercial Transporter Vehicle shall treat members of the public with the utmost courtesy, at all times. No driver shall solicit patronage in a loud or annoying tone of voice, nor shall any driver annoy any person by any sign, nor shall any driver obstruct the movement of any person.

J. Insurance: Commercial Transporter shall procure and maintain the following insurance coverage limits as required in the Fiscal Insurance Requirement policy adopted by the board.

In order to effect a waiver of insurance subrogation rights, to the extent permitted by law, each party its elected and appointed officials, employees and volunteers and others working on its behalf does hereby release the other from liability from any loss or damage to the Leased Space, building, personal property, fixtures and equipment of the other to the extent that such loss is covered, or would be covered if such insurance were in effect, by fire and extended coverage insurance in the full insurable value of such real or personal property, even though such loss may be due to the negligence or fault of such other party, its agents, representatives or employees. Commercial Transporter's policies of insurance shall contain a clause or endorsement that such release shall not adversely affect or impair such policies or prejudice the right of Commercial Transporter or Authority as additional insured, to recover hereunder. Commercial Transporter must fully indemnify and hold Gerald R. Ford International Airport harmless from any and all claims whatsoever arising out of business operations in accordance with these rules and regulations.

From time to time the Authority may review applicable insurance limits and coverage's and Commercial Transporter agrees to provide insurance as shall then comply with current policy requirements of the Authority.

K. Penalties for Violation: Any driver or Commercial Transporter who violates any provision of these Rules and Regulations shall be subject to penalty as set forth herein. Such driver or transporter shall be subject to such penalty as may be determined by the President & CEO not to exceed $1,000.

L. Rental Car Parking:

(1) Rental cars shall park only in spaces designated in the rental car ready lot or designated service facility. The rental car ready lot shall be utilized only by on-airport rental car companies having a contractual relationship with the Board authorizing the use of said lot.

(2) Rental cars owned by an off-airport rental car company may be parked in areas designated for public parking and shall conform to all regulations applicable to privately owned vehicles.

(3) Any vehicle including any rental car which is parked in a public parking area of the Airport shall be treated as a privately owned vehicle for purposes of determining the applicable parking fee.

(4) Courtesy vehicles operated by off-airport rental companies shall utilize spaces provided in the Commercial Vehicle Lane and shall have no more than one vehicle in the Commercial Vehicle Lane at any one time.

6. AIR OPERATIONS AREA

No person shall operate any aircraft to, from, or on the Airport, or service, repair or maintain any aircraft, or conduct any aircraft operations on or from the Airport, except in conformity with all applicable regulations of the FAA, TSA, State of Michigan and Airport Rules and Regulations governing such operations. It shall be the responsibility of all persons, firms, and corporations operating on the Airport to acquaint themselves with and adhere to the Rules and Regulations contained herein at all times.

A. Whenever the President & CEO believes the condition of the Airport or any part of the Airport to be unsafe for Aeronautical Activity, the President & CEO has the authority to close the Airport or any part thereof.

B. The President & CEO may delay or otherwise restrict any flight activity or other operation of any aircraft at the Airport for reasons related to the public health, safety or welfare. This includes, but is not limited to, the following types of specialized Aeronautical Activity: ultralights, balloons, gliders, skydiving or banner towing.

C. No air meets, air shows, aerial demonstrations or other special activities shall be held at the Airport or above any lands owned by Gerald R. Ford International Airport unless advance written permission is obtained from the President & CEO.

D. All air carriers using the terminal shall load/unload passenger from aircraft gate positions unless prior approval is obtained from the President & CEO.

E. Tenants shall monitor and control their passenger ramp loading/unloading activities to ensure passenger safety at all times.

F. All aircraft utilizing aircraft gate positions must be parked in accordance with parking position markings unless prior approval is obtained from the President & CEO.

G. General aviation aircraft may not use the air carrier ramp (main airline terminal) or facilities unless authorized by the President & CEO.

H. Supplemental Parking: Requests for parking unscheduled aircraft on non-leased areas must be made in advance by calling Airport Communications. Such requests shall be granted on a first come, first served basis.

I. Disabled Aircraft: It is the responsibility of the aircraft owner or operator to promptly remove disabled aircraft and parts thereof upon approval from the appropriate governmental authorities. If any person refuses or is unable to move an aircraft or part thereof as directed by the President & CEO, the aircraft or part may be moved by the President & CEO at the owner's or operator's expense and without liability on the part of the Authority for damage which may result in the course of or by reason of such moving. The

same shall apply to the removal of wrecked or damaged aircraft and parts on any portion of the Airport.

J. Derelict Aircraft: No person shall park or store any aircraft in non-flyable condition on Airport property, including leased premises, for a period in excess of 90 days, without written permission from the President & CEO.

K. Aircraft Accident Reporting: Persons involved in aircraft accidents or incidents which occur on the Airport and which involve Substantial Damage shall make a full report thereof to the President & CEO as soon after the accident as possible. It shall be a violation of these Rules and Regulations to withhold or deny information to the President & CEO. Such an infraction will be punishable by a fine or other administrative action deemed appropriate.

L. Towing of Aircraft: The President & CEO may authorize the towing or otherwise movement of aircraft parked in violation of these Rules and Regulations at the owner's or operator's expense and without liability on the part of the Authority, its officers, employees or agents for damage which may result in a course of or by reason of such moving. All aircraft towing must be done with aircraft running lights on or with a qualified marshal at each wing tip. Aircraft shall not be parked in a manner that could disrupt or impede other operations, without prior permission from the President & CEO.

M. No person shall operate any aircraft weighing more than the designated load bearing capacity of any pavement being a part of the Airport premises without permission from the President & CEO.

N. No Tenant holding a lease for a paved area or operating under a use agreement may permit aircraft or equipment to exceed the weight-bearing capability of any portion of pavement under their control without permission from the President & CEO.

O. No person shall operate any aircraft contrary to an Airport issued Notice to Airmen (NOTAM) as published by the FAA.

P. Unless otherwise approved by the President & CEO, no person shall enter any portion of the AOA unless such access is required in order to perform official duties.

Q. No person may enter the movement area without approval from the Authority except for aircraft operators with proper ATC clearance.

R. No person shall conduct any snow removal activity on the AOA without prior coordination and approval of the President & CEO. No person may create an unsafe condition when creating snow piles/ridges.

S. The starting or operating of aircraft engines inside any hangar is prohibited.

T. No person shall use chain or metal cable to tie an aircraft down.

U. No person shall put in motion any aircraft without permission of the owner.

V. No person shall use salt on the AOA.

7. AIRPORT BUSINESS AND COMMERCIAL OPERATIONS

It shall be unlawful and a violation of these Rules and Regulations for any person or entity:

A. To engage in any Commercial Activity or service on the premises of the Airport without first obtaining an Agreement from the Board.

B. To engage in any Commercial Activity not specifically authorized by Agreement with the Airport.

C. To violate Airport Minimum Standards for any aeronautical or service activity.

D. To solicit for any purpose, at the Airport, in any manner unless such solicitation is approved pursuant to a written Agreement with the Board.

E. To post, distribute or display signs, advertisements or distribute circulars except pursuant to conditions of an agreement with the Board.

8. FIRST AMENDMENT RIGHTS ACTIVITIES

8.1 PURPOSE

These Rules and Regulations shall apply to all First Amendment activities which includes Picketing, Leafletting and Solicitation conducted on any area of the Airport. The Airport is a security-sensitive environment, designed and used as an air transportation facility. The Airport is neither designed nor intended as a public forum for First Amendment activities. Such activities will only be permitted in or upon the Public Areas of the Airport, in areas designated by the President & CEO and in the manner prescribed by these Rules and Regulations, and by the President & CEO.

These Rules and Regulations will be enforced in a content-neutral manner without regard to either the identity of the person or organization seeking to engage in First Amendment activities or the viewpoint of the message sought to be communicated.

These provisions are adopted in order to maintain and enhance the efficient operation of the Airport for the following purposes:

A. To ensure the free and orderly flow of pedestrian traffic through the Airport premises and to ensure the efficient functioning of Airport operations and services by avoiding congestion, operational disruptions, duress and disturbance to passengers, patrons, concessionaires and tenants.

B. To ensure that the security of the Airport is properly maintained.

C. To protect persons using the Airport from fraud, deceptive practices, harassment, intimidation, interruption and inconvenience.

D. To protect the business operations of Airport Concessionaires and Tenants.

E. To ensure a reasonable balance between persons wishing to exercise constitutional freedoms, commercial Tenants and Concessionaires, the traveling public and the Airport's orderly and efficient operation.

8.2 SOLICITATION

No person shall engage in any solicitation on Airport property unless authorized to do so in writing by the President & CEO.

8.3 GENERAL RESTRICTIONS APPLICABLE TO ALL FIRST AMENDMENT ACTIVITIES

All persons engaged in First Amendment activities at the Airport shall be subject to the following general restrictions:

A. All First Amendment activities on Airport property require a written permit from the President & CEO. No more than 1 organization may possess a permit at any given time for a single location. A permit may be issued for a period not exceeding 10 business days.

B. All individuals, groups and organizations shall register with the President & CEO during normal business hours, not less than 24 hours in advance of conducting activities. Registration shall consist of providing the names, addresses (no post office boxes) and telephone numbers of the persons expected to engage in activities, the dates, times and specific details of the activities and the name, address and telephone number of the group or organization.

C. No person shall conduct such activities within 8 feet of premises leased or assigned to or provided for a Concessionaire or Tenant (such as a restaurant or shop), rest rooms, stairs, elevator, doorways or entranceways, information desk, and not within 16 feet of passenger or baggage screening locations.

D. No person shall conduct such activities upon any street, roadway, drive or parking lot at the Airport.

E. No person shall use sound or voice amplification systems, musical instruments, radio communication systems or other mechanical sound devices.

F. No person shall make a loud noise or shout or speak at a level which disturbs or interferes with the ability of others to hear announcements over the Airport public address system or to transact business at the Airport.

G. No person shall in any way obstruct, delay or interfere with the free movement of any person, nor shall any person assail, coerce, threaten or physically disturb any other person.

H. Parades, drive-by's or congregations of vehicles are prohibited on Airport roadways.

I. No person conducting First Amendment activities shall contact, verbally engage or call the attention of any Airport patron or passenger unless the patron or passenger initiated the contact with the person.

J. No person shall set up any table, chair, stationary rack, vending machine or other structure or use any stationary or wheeled device, with the exception of persons requiring the use of a wheelchair or other disadvantaged related device; provided, that the President & CEO may authorize a small table, space provided, for a nominal fee.

K. No person shall wear or carry a sign or placard larger than 24" x 28" in size. No signs, placards or other material shall be affixed to the exterior or interior of any building or other appurtenance within the Airport premises without the President & CEO's approval.

L. All persons conducting First Amendment activities at the Airport agree to indemnify the Authority, its agents and employees, from and against any and all claims and demands by any third parties, whether just or unjust, for personal injuries (including death) or property damage (including theft or loss) caused by or alleged to be caused by the activities of such person on Airport property.

M. First Amendment activities within Airport Terminal Building:

(1) Picketing or Soliciting anywhere inside the Airport Terminal Building or between the Terminal Building and the Airport Parking Garage is prohibited.

(2) Leafleting activities shall be confined to the areas in the Airport Terminal Building depicted on Exhibit B and described as the Main Hall. The President & CEO is authorized to wholly or partially revoke, restrict or suspend a permit or to temporarily alter the location for conduct under the permit in the event of disruptions to normal activities by construction, cleaning and maintenance activities, peak passenger times, security threats, or emergencies that disrupt the normal operations or threaten the security of the public, including, but not limited to, strikes, aircraft or traffic accidents, riots, civil unrest, power failures or other emergency conditions or circumstances that disrupt the operations of the Airport.

(3) Leafleting shall be conducted in person by not more than 2 persons from a single group, organization or cause in each location at a time.

(4) Leafleting may only be conducted between the hours of 8:00 AM to 5:00 PM., Monday through Friday when Airport Administration personnel are on duty.

(5) At the conclusion of his or her leafleting, each person shall pick up all discarded leaflets and properly dispose of them or remove them from the premises.

N. First Amendment activities outside the Airport Terminal Building:

(1) First Amendment activities shall be confined to the areas of the Airport described as public sidewalks, as designated by the President & CEO, other than those immediately in front of or adjacent to the Terminal Building and the Airport Parking Garage.

(2) Leafleting and Picketing shall be conducted in person by not more than 3 persons from a single group, organization or cause in each location at a time.

(3) Leafleting may only be conducted only between the hours of 8:00 AM to 5:00 PM., Monday through Friday when Airport Administration personnel are on duty.

(4) At the conclusion of his or her leafleting, each person shall pick up all discarded leaflets and properly dispose of them or remove them from the premises.

O. If any portion or section of this Chapter 8 shall be declared unconstitutional by a judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining portions or sections of this Chapter 8.

8.4 INSTALLATION AND DISPLAY OF ADVERTISING AND PROMOTIONAL MATERIAL

The Authority maintains designated areas in the Airport for advertising and promotional displays. Airport Management or the Authority's Advertising Concessionaire as the case may be, should be contacted directly regarding available locations and pricing. This Section applies only to contracts for the limited amount of space available for commercial advertising at the Airport. The Authority has different rules for free speech activities as referred to in Sections 8.1 – 8.3 above.

The regulation of advertising and promotional material at the Airport is intended to: (i) maintain neutrality on religious and political issues; (ii) avoid creating an uncomfortable environment for the travelling public potentially generated by controversial subjects; (iii) avoid the potential for violating the Establishment Clause of the U.S. Constitution, which prohibits a public entity from advancing religion; (iv) prevent a potential reduction in revenue from selling advertising space, because commercial advertisers might be dissuaded from using the same forum used by those wishing to communicate controversial messages.

The following standards shall apply to all contracts for the installation, display and maintenance of advertising and promotional material on properties and facilities operated by the Authority.

A. Permitted Subject Matter: The subject matter of the advertisement or promotional display shall be limited to speech which is within one or more of the following permissible areas:

(1) Proposes a commercial transaction;

(2) Proposes the patronage of a commercial business;

(3) Promotes a commercial industry'

(4) Promotes economic development; or

(5) Promotes tourism;

B. Limitations Upon Advertisements: The advertisement or promotional display shall not display anything that:

(1) Contains a religious or political message;

(2) Contains false, misleading or deceptive information or information that is libelous;

(3) Promotes unlawful or illegal goods, services or activities;

(4) Implies or declares an endorsement by the Authority of any service, product or point of view without the written authorization of the Authority;

(5) Violates the intellectual property rights of another;

(6) Contains obscene material or depictions of sexual conduct as those terms are defined in 1984 P.A. 343, as amended.

(7) Contains depictions of nude or semi-nude persons;

(8) Depicts, by language or graphics, violence or anti-social behavior;

(9) Promotes an escort service, dating service, or sexually-oriented business;

(10) Contains images or information that demeans an individual or group of individuals on account of race, color, religion, national origin, ancestry, gender, age, disability or sexual orientation.

C. Severability: If any portion or section of these advertising standards shall be declared unconstitutional by a judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining portions of this Section 8.4

8.5 TENANT AND CONCESSIONAIRE ADVERTISING AND PROMOTIONAL DISPLAYS

Airport tenants, concessionaires and operators shall apply in advance to the President & CEO, or his designee, for permission to use any of its demised or assigned space for advertising or promotional displays of any kind. At a minimum, any such advertising or display shall avoid anything contained in Section 8.4 B. above.

9. ENVIRONMENTAL AND SAFETY

9.1 NOISE CONTROL PROCEDURES

The Authority requests that aircraft follow the published voluntary departure and arrival noise abatement procedures.

Maintenance engine run-ups shall only be conducted at the following locations:

Location	Heading
8L Hold Apron	260-080
Runway 26L Hold Apron	080
Taxiway K at K1	350
Runway 17 Hold Apron	350
Runway 8R Hold Apron (Air Carriers)	090-240
Southeast Terminal Ramp (Turbo props only)	300

Idle power maintenance engine run-ups are allowed on the ramps.

9.2 FLAMMABLE AND EXPLOSIVE MATERIALS

No person, without prior permission from the President & CEO, shall keep, transport, handle, or store at, in or upon the Airport, any cargo or explosives or other hazardous articles which are barred from lading in, or for transportation by civil aircraft in the United States under Federal, State and local laws and regulations controlling the use or transportation of flammable and/or explosive materials.

Compliance with said laws and regulations shall not constitute or be construed to constitute a waiver of the required notice or an implied permission to keep, transport, handle, or store such explosives or other dangerous articles at, in, or upon the Airport. Advance notice of at least one business day shall be given to the President & CEO to permit full investigation and clearances for any operation requiring a waiver of this rule.

A. Doping/Spray-Painting/Stripping: The use of "dope" (cellulose nitrate or cellulose acetate dissolved in volatile flammable solvents) within any hangar is prohibited. The process of doping shall be carried out as set forth by

nationally recognized fire prevention standards and applicable local codes. For paint, varnish, or lacquer spraying operations, the arrangement, construction, ventilation, and protection of spraying booths and the storing and handling of materials shall be in accordance with nationally recognized fire prevention standards and Cascade Township codes.

B. Flammable Gases or Liquids: Gasoline, kerosene, ethyl jet fuel, ether, lubricating oil, or other flammable gases or liquids, including those used in connection with the process of "doping" shall be stored in accordance with the applicable codes, standards, and recommended practices of nationally recognized fire prevention standards. Buildings shall be provided with suitable fire appliances and first aid equipment.

C. Use of Cleaning Fluids: Cleaning of aircraft parts and other equipment shall preferably be done with non-flammable cleaning agents or solvents. When the use of flammable solvents cannot be avoided, only liquids having flash points in excess of 100° F shall be used and special precautions shall be taken to eliminate ignition sources in accordance with nationally recognized fire prevention standards. Cleaning processes that emit odors affecting the terminal building are not allowed.

9.3 FUELING/DE-FUELING OPERATIONS

A. Normal Operations: Guidelines, as established by nationally recognized fire prevention standards and Federal, State, and local authorities, including Spill Prevention, Control, and Countermeasures (SPCC) regulations shall be followed.

B. Prohibited Operations: No aircraft shall be fueled or de-fueled while inside any building or structure. No aircraft shall be fueled or de-fueled while one or more of its engines are running or while combustion heaters (e.g. wing and tail surface heaters, integral cabin heaters) are operating except under the following conditions:

If an aircraft auxiliary power unit has failed on a jet aircraft and a suitable ground power unit is not available, a jet engine mounted at the rear of the aircraft or on the wing on the side opposite the fueling point may be operated during fueling operations to provide power provided that the aircraft is not parked within 50 feet of any other aircraft, building, hangar, concourse or passenger loading bridge.

C. All persons, Tenants, employees, and agencies involved in fueling operations shall abide by the following:

(6) Fuel trucks shall not be parked within 50 feet of any aircraft, fuel storage facility, or building unless they are engaged in a fueling or defueling operation. This prohibition shall not apply to the repair of such equipment. In such cases, the fuel truck shall be electrically grounded upon entering the building.

(7) Fuel trucks, whether loaded or empty, shall never be operated or parked within a distance of 10 feet of another fuel truck and shall be chocked when stationary.

(8) No aircraft shall be fueled or de-fueled while passengers are on board unless such activity is allowed by the aircraft operator and all safety provisions adopted by the operator for such activity are adhered to.

(9) No fuel vehicle shall be backed within 20 feet of an aircraft unless a person is posted to assist or guide, or cones are placed for guidance.

(10) No person shall engage in aircraft fueling or de-fueling operations without adequate fire extinguishing equipment readily accessible at the point of fueling.

(11) No person shall start the engine of an aircraft on the Airport if there is any gasoline or other volatile fluid on the ground within the vicinity of the aircraft, unless directed to do so by the President & CEO.

(12) No person shall operate a radio transmitter, receiver, cell phone or two-way pager while an aircraft is being fueled or defueled unless authorized to do so by the President & CEO.

(13) Except for passengers, no person other than persons engaged in the fueling, servicing, and operation of an aircraft shall be permitted within 100 feet of such aircraft during fueling or de-fueling.

(14) Fueling and de-fueling operations shall conform to the standards, and regulations set forth in the Authority's Storm Water Pollution Prevention Plan (SWPPP) and shall conform to all required secondary containment Rules and Regulations.

(15) Fueling or de-fueling operations shall not be conducted when lightning is occurring in the immediate vicinity of the Airport.

(16) Aircraft fuel servicing personnel shall not carry lighters or matches on their person while performing fuel servicing operations.

(17) Aircraft and motor vehicles shall be fueled on the Airport only at locations and with equipment approved by the President & CEO.

(18) A fueling agent shall not permit any employee or agent to fuel/defuel and aircraft unsupervised unless he/she has first completed an FAA approved training program in acceptable fueling procedures, fire extinguishing procedures and procedures to summon the Airport Fire Department. Certification that each fueler has received this training shall be in compliance with the Authority's Handling and Storage of Hazardous Substances and Materials Policies and Procedures.

(19) Handling and storage of fuel shall be conducted in accordance with the Authority's Handling and Storage of Hazardous Substances and Materials policies and procedures.

(20) All spills greater than 49 gallons, and any spill that enters a storm sewer or designated waters of the State, shall be immediately reported to the MDEQ at 1-800-292-4706. All appropriate and necessary response actions to contain and collect spilled materials shall be taken. All reporting requirements per Local, State and Federal requirements must be complied with.

(21) Each Class II and Class III fuel spill shall be investigated by the manager of the Tenant fueling agent involved in the spill to determine whether standard operating procedures were properly carried out, and what corrective measures are required. A copy of the investigation report must be sent to the Aircraft Rescue Firefighting Chief.

(22) A Tenant shall be responsible for the clean up and disposal of any hazardous waste in accordance with the Authority's Handling and Storage of Hazardous Materials Policies and Procedures.

9.4 SMOKING

A. Smoking or carrying lighted smoking materials, striking matches or other lighting devices shall not be permitted anywhere on the AOA, or in any hangars, shops, buildings, or other areas in which flammable liquids are stored or used except in cases where specific smoking areas have been designated by the President & CEO for that purpose. It shall be unlawful and in violation of this subsection to light or carry lighted smoking materials inside any ground vehicle anywhere on the AOA.

B. Smoking within any portion of the terminal building or within 10 feet of entrances, windows, and ventilation systems is prohibited.

Any person violating this subsection shall be subject to a warning. Upon being warned, the individual shall extinguish the smoking materials or leave the premises. If the individual refuses to either leave the premises or to extinguish smoking materials, he or she shall be subject to a fine.

9.5 OPEN FLAME OPERATIONS

No person shall conduct any gas or open flame operations, including gas or charcoal grills, on the AOA or in any building unless specifically approved by the President & CEO.

9.6 LEASEHOLD/ASSIGNED SPACE HOUSEKEEPING

All persons occupying space at the Airport shall keep the space allotted to them policed, free from rubbish or accumulation of any material, and in a sanitary & sightly

condition. All floors shall be kept clean and free from fuel and oil. The use of volatile or flammable solvents for cleaning floors is prohibited. Metal receptacles with self-extinguishing covers shall be used for the storage of oily waste rags and similar material. Persons occupying space shall remove the contents of the receptacles daily. Drip pans shall be placed under leaks as necessary. Clothes lockers shall be constructed of metal or fire-resistant material. No Tenant, Grantee, Concessionaire, or agent thereof doing business on the Airport may:

A. Keep uncovered trash containers adjacent to sidewalks or roads in a public area of the Airport.

B. Dispose of any fill, building materials, receptacles or discarded or waste materials on Airport property except as approved in writing by the President & CEO. No liquids shall be placed or dumped into Airport property storm drains or the sanitary sewer system at the Airport that will damage such drains or system or will result in water pollution upon having passed through such drain or system.

C. Store property or equipment not normally used for flight operations or other aviation activities. Storage of property or equipment of a non-aviation nature must be provided for by written permission from the Board.

D. Keep derelict equipment on the Airport. Persons or Tenants responsible for derelict equipment are subject to recurrent and compounding fines plus any costs incurred by the Authority for the removal and disposal of such equipment.

E. Spill any solid or liquid material at the Airport. In such event, it shall immediately be cleaned up by the person responsible for such spillage, and disposed of properly.

F. Cause unnecessarily or unreasonably any smoke, dust, fumes, gaseous matter or any other matter to be emitted into the atmosphere or carried by the atmosphere.

G. Operate an uncovered vehicle to haul trash, dirt or any other material on the Airport without prior permission of the President & CEO.

H. Dispose of garbage, papers, refuse or other forms of trash, including cigarettes, cigars and matches, except in receptacles provided for such purpose.

I. Dump or dispose of materials other than storm water into the Airport's storm water drainage system.

If a tenant, grantee, or concessionaire fails to keep and maintain the premises and improvements in good condition and repair, reasonable wear and use excepted, and in a sanitary and sightly condition for a period of 30 days after written notice from the President & CEO to do so, the President & CEO, upon the expiration of such 30 day period, may, but shall not be obligated to, enter upon

the premises involved and perform the obligation of the Tenant, Grantee or Concessionaire. The Tenant, Grantee or Concessionaire will be charged the reasonable cost and expense thereof. If such Tenant, Grantee or Concessionaire's failure to perform any such obligation adversely affects or endangers the health or safety of the public or of employees at the Airport, the President & CEO may, but shall not be obligated to, perform such obligation at any time with or without prior notice, and charge to the Tenant, Grantee or Concessionaire the reasonable cost and expense plus any reasonable administrative costs of such performance. The Tenant Grantee or Concessionaire agrees to pay the Authority such charge in addition to any other amounts payable. In the event the President & CEO deems it necessary to enter and repair without providing prior notice, the President & CEO will provide notice to the Tenant, Grantee, or Concessionaire as soon as practicable after such entry and repair.

It is further stipulated that if the President & CEO shall perform any of the Tenant, Grantee, or Concessionaire obligations in accordance with provisions of this subsection, the President & CEO, or any affiliates or associates therein shall not be liable to the Tenant, Grantee or Concessionaire for any loss of revenue to it resulting from such performance.

9.7 FIRE EXTINGUISHERS

Fire extinguishing equipment at the Airport shall not be tampered with at any time nor used for any purpose other than fire fighting or fire prevention. All such equipment shall be maintained in accordance with applicable standards. Tags showing the date of the last inspection shall be attached to each unit or records acceptable to fire underwriters shall be kept showing the status of such equipment.

All Tenants or Grantees of hangars, aircraft maintenance buildings, or shop facilities shall supply and maintain an adequate number of readily accessible fire extinguishers. Fueling vehicles designed for the transport and transfer of fuel shall carry on board at least two 20 BC fire extinguishers, one located on each side of the vehicle.

Terminal tenants shall provide and maintain (at their sole expense) hand fire extinguishers for the interior of all exclusive lease areas in accordance with applicable safety codes and National Fire Protection Association Standards.

9.8 POWDER ACTIVATED TOOLS

No person shall use powder or explosive cartridge activated tools or fastening devices anywhere on the Airport without prior approval of Airport Police and the President & CEO.

9.9 HEATED HANGARS

Heating in any hangar shall only be through or by approved systems or devices as listed by the Underwriters Laboratories, Inc. as suitable for use in aircraft hangars

and shall be installed in the manner prescribed by the Underwriters Laboratories, Inc. and in compliance with applicable Federal, State and local codes.

9.10 AIRCRAFT REPAIRS

Unless authorized by the President & CEO, no person shall repair an aircraft or aircraft engine, propeller, or other aircraft apparatus in any area of the Airport other than those areas specifically designed for such repairs, except that minor adjustments or repairs may be made while the aircraft is at an aircraft parking position. No person shall repair or cause repairs to be made to any aircraft, aircraft engine, propeller or other aircraft apparatus by any person on the Airport other than those specifically approved to conduct such operations through written agreement or authorization of the President & CEO.

9.11 FIREARMS AND WEAPONS

No person, except those persons authorized to do so under Michigan State Law and Federal government regulations may carry or transport any firearm or weapon on the Airport except when such firearm or weapon is properly encased for shipment and not in the individual's immediate possession. The Authority reserves the right to restrict the carrying of firearms and weapons by contract security or Tenant security personnel on the Airport.

A. Conditions Governing Use: No person shall discharge any firearm or weapon on the Airport except in the performance of official duties requiring the discharge thereof.

B. The carrying of a firearm or weapon on the Airport must be in compliance with all applicable Federal, State, and local regulations.

9.12 ANIMALS

Prohibitions:

A. No person other than in conduct of an official or permitted act shall hunt, pursue, trap, catch, injure or kill any animal on the Airport.

B. No person shall feed or do any other act to encourage the congregation of birds or other animals on the Airport, unless authorized to do so by the President & CEO.

C. No person shall bring into the Airport Terminal Building any animal that is not appropriately caged with the exception of service animals. While in the terminal, all animals, with the exception of service animals, shall remain caged.

9.13 FUEL STORAGE TANKS

A. No Tenant or other person shall install, maintain, or permit to be installed or maintained fuel storage tanks on the Airport without the express written approval of the President & CEO. All approved tanks must be installed and maintained in accordance with all Federal, State and local laws, regulations and ordinances. All fuel storage tanks on the Airport must be registered with the appropriate governing body(s). A current copy of each fuel storage tank registration, copies of the Michigan Class A and Class B Underground Storage Tank (UST) System Operators picture certifications, and copies of the proof of financial responsibility (insurance forms are acceptable) must be provided to the Authority.

B. No Tenant or other person shall operate GFIAA fuel dispensing equipment without receiving Class C Operator training. Pursuant to Federal, State, and Local regulations all users of GFIAA UST fuel dispensing facilities must be trained by a GFIAA Class A/B Operator prior to using these facilities and/or equipment in order to meet the Class C Operator training criteria.

9.14 ENVIRONMENTAL REGULATIONS

A. President & CEO's Consent Required: No person shall cause or permit any Hazardous or Significant Materials, as defined in Section 1.5(48, 74) to be stored or used on or about the Airport, except in compliance with Environmental Laws as described below and as permitted in writing by the President & CEO.

B. Compliance with Environmental Laws: Persons shall at all times and in all respects comply with all local, State, and Federal laws, ordinances, regulations, and orders relating to industrial hygiene, environmental protection, or the use, generation, manufacture, storage, disposal, or transportation of Hazardous and Significant Materials on, about or from the Airport (collectively "Environmental Laws").

C. Hazardous and Significant Materials Storage and Handling: All persons shall, at their own expense, procure, maintain in effect, and comply with all conditions of any permits, licenses, and other governmental and regulatory requirements or approvals required for their activities or use of the Airport, including, without limitation, discharge of materials or wastes into or through any storm or sanitary sewer serving the premises. Except for permitted discharges into the sanitary sewer, persons shall cause any and all Hazardous and Significant Materials removed from the premises to be removed and transported solely by duly licensed haulers to duly licensed facilities for disposal. Persons shall in all respects handle, store, treat and manage any and all Hazardous and Significant Materials on or about the Airport in conformity with all applicable Environmental Laws and prudent industry practices regarding the management of such Hazardous and Significant Materials. Upon the expiration or earlier termination of the term of any lease/sublease, operating agreement or permit, the user shall cause all Hazardous and Significant Materials to be removed from the Airport and to be transported for use, storage, disposal or recycling in accordance and

compliance with all applicable Environmental Laws; provided, however, that such person shall not take any remedial action in response to the presence of any Hazardous or Significant Materials in or about the premises, nor enter into any settlement agreement, consent decree, or other compromise with respect to any claims relating to any Hazardous or Significant Materials in any way connected with the premises without first notifying the President & CEO of the person's intention to do so and affording the President & CEO ample opportunity to appear, intervene, or otherwise appropriately assert and protect the Authority's interest with respect thereto.

D. Notices: If at any time any person shall become aware, or have reasonable cause to believe, that any Hazardous or Significant Material has come to be located on or about the Airport in violation or potential violation of Environmental Laws, he shall, immediately upon discovering such presence or suspected presence of the Hazardous or Significant Material, provide the President & CEO with written notice of that condition. In addition, such person shall immediately notify the President & CEO in writing of (1) any enforcement, cleanup, removal, or other governmental or regulatory action instituted or threatened pursuant to any Environmental Laws, (2) any claim made or threatened against the person or the premises relating to damage, contribution, cost recovery, compensation, loss, or injury resulting from or claimed to result from any Hazardous or Significant Materials, and (3) any reports made to any local, State, or Federal environmental agency arising out of or in connection with any Hazardous or Significant Materials on or removed from the Airport, including any complaints, notices, warnings, or asserted violations in connection therewith. Such person shall also supply to the President & CEO as promptly as possible, and in any event within 5 business days after the person first receives or sends the same, copies of all claims, reports, complaints, notices, warnings, or asserted violations relating in any way to the Airport or the person's use thereof. Such person shall promptly deliver to the President & CEO copies of hazardous waste manifests reflecting the legal and proper disposal of all Hazardous and Significant Materials removed from the Airport.

E. Indemnification: All persons shall indemnify, defend and hold harmless the Board and the Authority, including their agents, officers, employees, successors and assigns, from and against any and all claims, liabilities, penalties, fines, judgments, forfeitures, losses, damages (including damages for the loss or restriction on use of usable space or of any amenity of the premises) costs, or expenses (including attorneys' fees, consultant fees, and expert fees) for the death of or injury to any person or damage to the Airport or any property whatsoever, arising from or caused by the person's failure to comply with any Environmental Laws or any covenants, terms or conditions relating to environmental matters in any lease/sublease, operating agreement or permit. Such person's obligations under this section shall include, without limitation, and whether foreseeable or unforeseeable, any and all costs incurred in connection with any investigation of the condition of the premises, and any and all costs of any required or necessary repair, cleanup, decontamination or remediation of

the premises and the preparation and implementation of any closure, remedial action, or other required plans in connection therewith should the President & CEO have a reasonable basis to believe that such person has caused the presence of Hazardous or Significant Materials in violation of Environmental Laws and such person fails to first conduct its own environmental investigation, and any and all costs of any required or necessary repair, cleanup, decontamination or remediation of the premises and the preparation and implementation of any closure, remedial action, or other required plans in connection therewith and resulting from such person's violation of Environmental Laws. Such person's obligations under this section shall survive the expiration or earlier termination of the term of any lease/sublease, operating agreement or permit.

F. Inspection: The President & CEO, at his sole discretion, shall have the right to enter and inspect any premises on the Airport, including a person's business operations thereon, upon reasonable notice and in a manner so as not to unreasonably interfere with the conduct of such person's business, to investigate the presence or potential presence of Hazardous or Significant Materials on the premises in violation of Environmental Laws. During such inspection, the President & CEO shall have the right to visually inspect the premises and to take such soil, sludge or groundwater samples and conduct such tests as he may determine, in his sole discretion, to be necessary or advisable. The Authority shall pay for the costs of such investigations; provided, however, that if the results of such investigation indicate the presence of Hazardous or Significant Materials on or about the premises is in violation of Environmental Laws and such violation was caused by the user, then such person shall fully reimburse the Authority for such expenses within 10 days of receiving the President & CEO's written request for reimbursement.

G. NPDES Permit: All persons are on notice that the Authority holds a National Pollutant Discharge Elimination System ("NPDES") permit authorizing the discharge of storm water from the Airport ("Permit"). The Permit requires, in part, the implementation of best management practices (BMPs) with regard to the use of anti-icing and deicing materials (collectively "Deicing Materials") and the collection of storm water containing Deicing Materials. The BMPs are described in the Authority's Storm Water Pollution Prevention Plan (SWPPP). The Permit and the Plan are incorporated by reference into these Rules and Regulations as if printed in their entirety herein.

H. Tenants shall continuously monitor and control the loading, unloading, or transfer of fuel, glycol, or any other hazardous or significant material on the Airport

I. Washing of aircraft is prohibited on any ramp. Washing must be done in an aircraft hangar that has a drainage system that will prevent contaminants from entering the storm water system in compliance with the current NPDES storm water permit, and BMP program.

J. No fuel, grease, oil, dopes, paints, solvents, acids, flammable liquids or contaminants of any kind shall be allowed to flow into or be placed in any Airport sanitary or storm drain system, or onto any other portion of the Airport.

K. No person shall use urea or salt at any time on the AOA.

L. De-icing: All de-icing activities shall only be conducted at locations approved by the President & CEO. All de-icing spills are to be properly contained, cleaned up, and disposed of. Large uncontrolled spills or any spills that reach an Airport storm drain shall be immediately reported to Airport Communications. No person shall conduct de-icing operations until they have received training regarding company/tenant spill response procedures and best management practices.

M. Tenants shall inspect all the new or used liquid storage or transport/delivery equipment for defects or damage (tanks, hoses, pipes, connections, fittings, nozzles, etc.) which may allow leaking of materials. Inspections shall occur immediately upon receiving each new or used piece of equipment. Should the tenant not be able to inspect the equipment immediately the tenant shall ensure that the equipment has appropriate containment until the equipment can immediately be inspected. Tenants shall not accept delivery of new or used equipment with liquid in the tanks. This equipment shall arrive on site empty and stay empty until an inspection has been completed and all necessary corrections have been made to ensure the equipment will function properly without leaking any liquids. Tenants shall notify the Authority of delivery of all new or used liquid storage of all new or used liquid storage and transport/delivery equipment. Tenants shall be responsible for any equipment leaks and pay all fines issued as a result of equipment leaks.

10. GENERAL PROVISIONS

10.1 LIMITED LIABILITY

The Gerald R. Ford International Airport Authority will not be responsible for, nor assumes any liability for loss, injury, or damage to persons or property on the Airport or using Airport facilities.

10.2 CONSTRUCTION ACTIVITY

Tenants desiring to construct, enlarge, modify, alter, repair, move, demolish, or change the occupancy of property or to install or erect a sign of any description shall do so in accordance with the standards set by the Authority and any written agreement. Written approval in the form of a Construction Permit issued by the Authority is required for this activity. Authority approval does not relieve the tenant from the responsibility to comply with all local, state, and national building codes, or to obtain all necessary permits.

10.3 CONDUCT

A. All alcohol consumption shall be conducted in designated areas within the Terminal Building controlled by vendors holding a liquor license. Alcohol consumed in such areas shall have been purchased from the vendor.

B. No person shall commit any nuisance or any disorderly, obscene, indecent, or unlawful act on Airport premises.

C. No person shall use or remain on the Airport for any purpose other than air transportation and activities related thereto and activities expressly authorized by the President & CEO.

D. No person shall operate or release any model aircraft, flare, projectile, rocket, kite, balloon, or parachute or other similar contrivance at or upon the Airport without the prior written approval of the President & CEO. Such prohibition shall not apply to the National Weather Service when such activities are a regular operational function on its part.

E. No person shall throw, drop, or otherwise propel any object or substance of any kind from any vehicle window or roof of any structure on the Airport. No person shall create FOD. No person shall fail to properly dispose of FOD in an approved container.

F. No person shall travel upon the premises of the Airport other than on roads, walks, or other facilities provided for such specific purpose.

G. No person shall use the roads or walks of the Airport in such manner as to hinder or obstruct their proper use.

H. No person may interfere or tamper with any aircraft without permission of the owner thereof. This provision is not intended to include the moving of aircraft as authorized by the President & CEO.

I. No person shall use Glycol unless reported to the Authority for cleanup.

J. No person shall use the Airport public address system for other than official purposes or in any means which is unprofessional or indecent as determined by the President & CEO.

11. SEVERABILITY

If any section, subsection, sentence, clause or phrase of these Rules and Regulations is for any reason held to be invalid or unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of these Rules and Regulations.

12. SUBORDINATION TO GRANTOR'S FEDERAL OBLIGATIONS

These Rules and Regulations shall be subordinate to the provisions of any existing or future agreement between the Board and the United States, the execution of which has been or may be required as a condition precedent to the expenditure of federal funds for the development of the Airport. In the event that the Board, through its President & CEO, reasonably determines that these Rules and Regulations, or any provision contained herein, causes or may cause a violation of any agreement between the Board and the United States, the Board shall have the unilateral right to modify these Rules and Regulations to ensure the Board's compliance with all such agreements with the United States.

EXHIBIT A - FINES

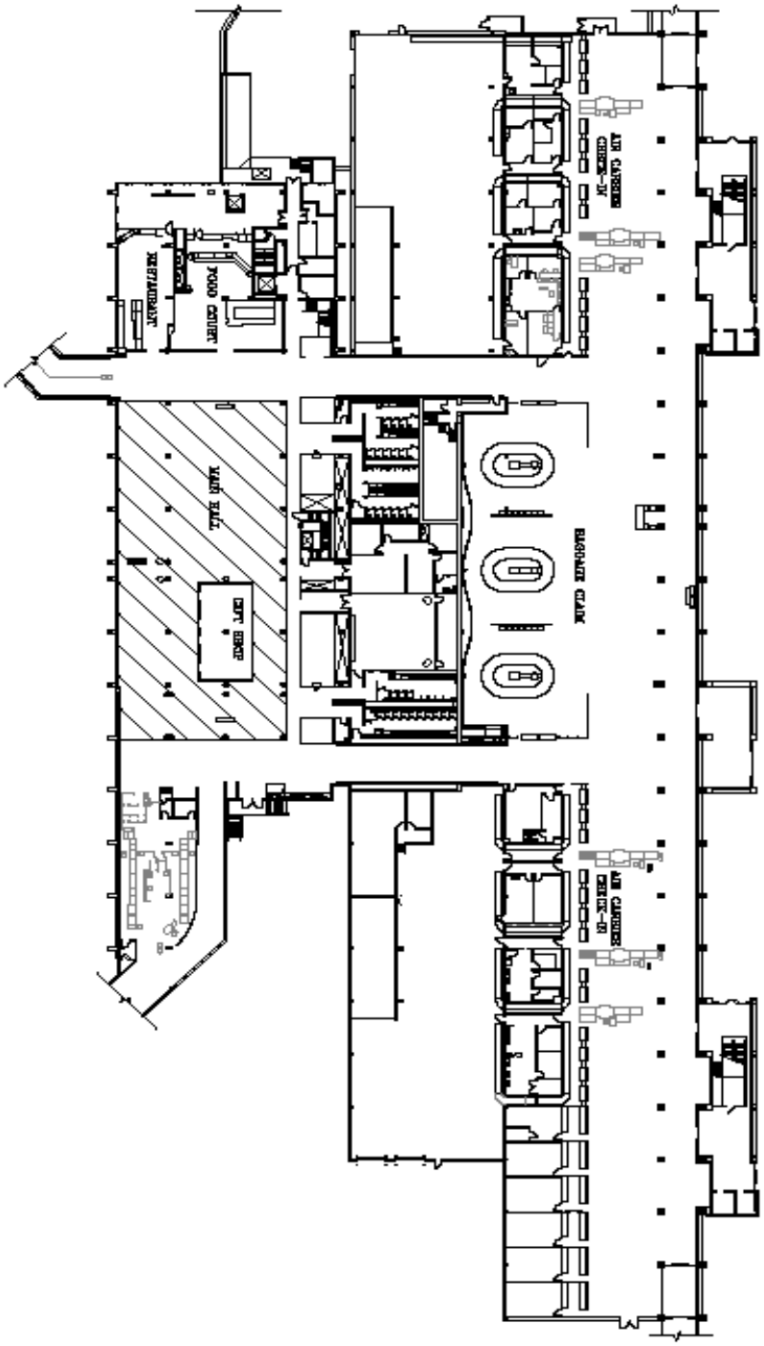
Violation Section	Fine	Penalty
2.1	Compliance with signs	$ 50
2.2	Trespassing	$ 100
2.3	Preservation of property	$ 100
2.4	Public safety	$ 100
3.1	Security compliance	$ 100
4.1	Public parking	$ 50
4.3	Employee parking	$ 50
4.4	Vehicle operating requirements	$ 100
5	Commercial ground transportation	$ 150
6	Air operations area	$ 100
7	Airport business and commercial operations	$ 150
8.2	Solicitation	$ 50
8.3	Non-commercial/first amendment activities	$ 50
9.1	Noise control procedures	$ 100
9.2	Flammable and explosive materials	$ 250
9.3	Fueling/de-fueling operations	$ 100
9.4	Smoking	$ 50
9.5	Open flame operations	$ 100
9.6	Leasehold/assigned space housekeeping	$ 250
9.7	Fire extinguishers	$ 100
9.8	Powder activated tools	$ 100
9.9	Heated hangars	$ 100
9.10	Aircraft repairs	$ 100

9.11	Firearms and weapons	$ 100
9.12	Animals	$ 50
9.13	Fuel storage tanks	$ 250
9.14	Environmental regulations	$ 250
10.2	Construction activity	$ 150
10.3	Conduct	$ 100

The listed fines are applicable for the first infraction: For multiple infractions of the same rule within a 1 year period, the fine for each subsequent infraction is double the fine of the last infraction.

Fines imposed under these Rules and Regulations are independent of any fines, judgments, lawsuits or penalties imposed by other agreements with the Board or other agencies with jurisdiction.

EXHIBIT B - Airport Terminal Building



Appendix E
KCDA Handling and Storage of Hazardous Substances and Materials Policy and Procedures – 2010

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KENT COUNTY DEPARTMENT OF AERONAUTICS
HANDLING AND STORING OF
HAZARDOUS SUBSTANCES AND MATERIALS

POLICY AND PROCEDURES
November 4, 2010

Original Date: 12-3-04
Revision Date: 11-4-10

Exhibit #9
139.321

FAA Approval 12/6/2010

SECTION I
GENERAL

1.1 The Kent County Department of Aeronautics, under 14 CFR, Part 139, is required to establish and maintain standards for protecting against fire and explosions in storing, dispensing, and handling fuel, lubricants, and oxygen. This program is a result of that requirement.

1.2 Consistent with regulatory requirements, each tenant of the Department of Aeronautics that operates a fuel storage facility and/or fueling vehicle on the Airport is required to comply with the requirements of this program.

1.3 Inspections shall be made by qualified Department of Aeronautics personnel to ensure and enforce compliance with this program and with applicable Federal, State, and Local Regulations. The Gerald R. Ford International Airport is located in Cascade Township. Cascade Township has adopted the International Fire Code as amended by the State of Michigan.

SECTION 2
FIRE SAFETY - HANDLING AND DISPENSING FUEL

2.1 Fuel Farms – Storage Areas

2.1.1 Overall, the Fuel Storage Area should be:

a. Fenced and signed to reduce chance of unauthorized entry and/or tampering.

b. Posted with "FLAMMABLE - NO SMOKING" signs.

c. Free of materials, equipment, functions and activities, which would be ignition sources.

d. Marked with letters at least 3 inches high to identify the type and grade of fuel.

2.1.2 Fueling stations will be:

a. Equipped with two (2) accessible fire extinguishers (one of which may be on a vehicle), that have been approved by a recognized laboratory and hold at least a 20 BC rating for each.

b. Equipped with hoses, nozzles and outflow connectors that are controlled by a spring-loaded, non-by-passable automatic (dead-man) fuel cut-off feature that is capable of overriding all other controls and stopping, with one physical movement, all fuel flow.

c. If a top load system, equipped with metallic drop tube (having anti-splash deflector) long enough to reach bottom of the deepest fuel tank.

d. Equipped with a dead-man control.

e. Equipped with a boldly marked emergency cutoff.

f. Equipped with a bond wire and appropriate connector clamp for bonding fueling vehicles.

2.1.3 Electrical equipment, switches and wiring will be:

a. Protected from heat, abrasion or other impact which could cause failure of insulation.

b. Explosion proof in design and approved for such use by a recognized testing laboratory.

2.2 Mobile Fuelers

2.2.1 Overall, this equipment will:

a. Be marked on all sides with a standard hazardous material placard with ID number and NO-SMOKING both on the outside and inside of the crew compartment.

b. Be equipped with hoses, nozzles and outflow connectors that are controlled by a spring-loaded, non-by-passable automatic (dead-man) fuel cut-off feature that is capable of overriding all other controls and stopping, with one physical movement, all fuel flow.

c. Be equipped with two (2) accessible fire extinguishers that have been approved by a recognized laboratory and hold at least a 20 BC rating.

d. Contain no feature, which would allow fuel or concentrated fumes to contact exhaust system, hot exhaust gasses or any other ignition source.

e. Not be equipped with ABC type fire extinguishers where they may be used on aircraft fires.

f. Be equipped with wheel chocks to be used anytime the mobile fueler is parked to prevent any inadvertent movement.

2.2.2 Fuel tanks will be:

a. Closed and equipped with gasket dome covers which:

(1) Contain a 3 psi emergency vapor pressure relief valve.

(2) Are adequate to prevent fuel spillage during vehicle movement.

b. Equipped with a tank bottom outflow cutoff valve which can block fuel flow and spill in event of piping rupture or other valve failure (Emergency shut-off).

2.2.3 Piping will be protected from impact/stress, which could cause rupture/fuel spillage.

2.2.4 Hoses, nozzles and outflow connectors will be controlled by a spring-loaded, non-by-passable automatic (dead-man) flow cut-off feature that is capable of overriding all other controls and stopping, with one physical movement, all fuel flow.

2.2.5 Electrical equipment and wiring will be:

a. Protected from heat, abrasion or other impact which could cause failure of insulation.

b. Explosion proof in design and be approved for such use by a recognized testing laboratory.

2.2.6 Bonding and grounding equipment will:

a. Provide electrical continuity between all metallic or conductive components.

b. Utilize clamps and wires to facilitate a definite electrical bond connection between the mobile fueler and aircraft being fueled or the mobile fueler and the fueling station.

SECTION 3
FUELING PERSONNEL

3.1 Fueling Agent Training Requirements

3.1.1 Supervisors

At least one supervisor with each fueling agent must have completed an FAA-approved aviation fuel training course in fire safety prior to initial performance of duties unless this individual is enrolled in an authorized aviation fuel training course that will be successfully completed within 90 days of initiating duties. This individual must also receive recurrent instruction at least every 24 consecutive calendar months. Following initial training, supervisory personnel will:

a. Understand and be able to explain the purpose of and safely perform periodic inspections/checks needed to keep equipment operational and functioning safely.

b. Understand and be able to explain what should be done when a required component of a fuel storage system or mobile fueler is inoperable.

c. Understand the basic "fire triangle" and be able to identify the more common ignition sources found on airports.

d. Understand static-generation/retention misting of fuels and the dangers associated with filtering and pumping fuels to and from storage tanks, mobile fuelers and aircraft.

e. Understand the three classes of fuel spills, and be able to implement the required actions when a spill occurs.

f. Understand and be able to explain the hazards of atmospheric electric phenomena, including lightning and static charging of aircraft in flight.

g. Understand and be able to explain the main features of proper fire fighting techniques using and demonstrating use of the fire extinguishers normally maintained at fuel storage areas and on mobile fuelers.

h. Understand and be able to explain de-fueling procedures and precautions.

i. Understand the purpose and proper procedures for bonding mobile fuelers to aircraft and bonding/grounding mobile fuelers to fueling stations.

j. Maintain records of individual training and recurrent training of all fueling employees for at least 24 consecutive calendar months.

3.1.2 Other staff

All other employees who fuel aircraft accept fuel shipments, or otherwise handle fuel shall receive at least initial on-the-job training and recurrent instruction every 24 consecutive calendar months in fire safety from the supervisor trained in accordance with Section 3.1 of this program. Following initial training, personnel providing fueling service will:

a. Understand and be able to explain the purpose of and safely perform periodic inspections/checks needed to keep equipment operational and functioning safely.

b. Understand and be able to explain what should be done when a required component of a fuel storage system or mobile fueler is inoperable.

c. Understand the basic "fire triangle" and be able to identify the more common ignition sources found on airports.

d. Understand static-generation/retention misting of fuels and the dangers associated with filtering and pumping fuels to and from storage tanks, mobile fuelers and aircraft.

e. Understand the three classes of fuel spills, and be able to implement the required actions when a spill occurs.

f. Understand and be able to explain the hazards of atmospheric electric phenomena, including lightning and static charging of aircraft in flight.

g. Understand and be able to explain the main features of proper fire fighting techniques using and demonstrating use of the fire extinguishers normally maintained at fuel storage areas and on mobile fuelers.

h. Understand and be able to explain de-fueling procedures and precautions.

i. Understand the purpose and proper procedures for bonding mobile fuelers to aircraft and bonding/grounding mobile fuelers to fueling stations.

3.2 Fueling Agent Training Records

Each fueling agent shall provide written confirmation to the Department of Aeronautics once every 24 consecutive months that the training in section 3.1 has been accomplished.

3.3 Clothing and Footwear

Fueling personnel shall be appropriately clothed (garments other than silk, polyesters, nylon with wool, or other static generating fabrics; shoes containing no taps, hobnails or other material which could generate sparks on pavement).

3.4 Supervision

Fueling personnel shall be supervised and periodically checked to assure training and knowledge levels are maintained, all equipment and required components are kept fully operational, required periodic checks and inspections are made when due, required records are kept and the proper grounding and bonding connections are being made.

3.5 Other

Fueling personnel shall not carry on their persons (at any time within 100 feet of any tank, dock, storage area, mobile fueler or aircraft) any igniting device, including safety matches, strike-anywhere matches, cigarette lighters, or other items which could become ignition sources if operated, bumped, hit or dropped.

SECTION 4
FUELING OPERATIONS

4.1 Fueling Safety

Fueling agents will ensure that:

a. Only qualified personnel are allowed to operate a fuel storage system or equipment or to fuel aircraft.

b. Fueling is performed only outside; never in a building.

c. Mobile fuelers are always parked at least 10 feet away from each other and 50 feet away from any building or aircraft not being fueled/de-fueled.

d. No smoking or other ignition sources are permitted within 100 feet of a fueling operation or facility.

e. Before commencing any unloading, loading, fueling or de-fueling operations, all fueling vehicle motors, engines, radios, and other electrical and mechanical equipment (except auxiliary power units) not needed for that specific operation are turned off and kept off.

f. All systems and mobile fuelers are bonded and/or grounded as appropriate before commencing and during all fuel handling operations.

g. Before commencing any unloading, loading, fueling or de-fueling operation, all fuel storage areas and mobile fuelers are in safe operating condition.

h. Before commencing any unloading, loading, fueling or de-fueling operation, the dead-man control is operable and is used to control fuel flow.

i. Fuel storage areas and all equipment are kept neat and free of trash and combustible items which could cause or contribute to a fire.

j. All fire extinguishers are checked for charge and condition at least monthly.

k. All fuel operations are suspended when there are lightning discharges within 5 miles of the Airport.

SECTION 5
INSPECTIONS, MAINTENANCE AND REPORTING

5.1 Inspections of Fuel Storage Areas, Mobile Fuelers and Records.

a. Department of Aeronautics personnel will inspect each fuel storage area, mobile fueler and all records that are required under this program at least every three (3) months. Results of these records shall be maintained for at least 12 consecutive calendar months.

b. Department of Aeronautics personnel shall observe tenant fueling operations on a regular basis.

c. Each tenant must provide a contact person that will be responsible for record keeping and assisting the Department of Aeronautics in the required inspections.

d. The Department of Aeronautics will report all problems that are not corrected within the allotted time to the FAA Regional Airports Division Office in accordance with FAR Part 139.

SECTION 6
FUEL SPILLS - FIRE SAFETY

6.1 Classification of Fuel Spills

All fuel spills are classified as follows:

Class I Spill	A non-continuous spill less than 5 square feet that has not entered the storm system or soil.
Class II Spill	A non-continuous spill between 5 and 50 square feet that has not entered the storm system or soil.
Class III Spill	A spill that is greater than 50 square feet, continuous in nature, has entered the storm system or soil, or is a threat to persons or property.

6.2 Fire Safety for Fuel Spills

a. Class I and II spills will be immediately cleaned by the fueling agent using an appropriate absorbent material. The fueling agent will clean Class III spills under the direction of Department of Aeronautics personnel.

b. The fueling agent will take every measure to prevent spills from reaching soil or entering the Airport storm drain system.

c. The fueling agent will immediately notify Airport Communications of all Class II and III spills. The fueling agent shall remain at the site of a Class III spill until such time as ARFF releases them.

d. All materials used to clean hazardous spills will be stored as contaminated agent in a designated area that has been approved by the Department of Aeronautics and disposed of in accordance with Federal and State environmental law. The proper disposal of this contaminant will be the responsibility of the fueling agent.

e. Each fueling agent is required to maintain its own supply of fuel absorbent materials for Class I, II and III spills both on the mobile fuelers and in fuel storage areas. This supply is an inspection item. A list of required materials shall be provided to each fueling agent tenant.

f. Each fueling agent must complete a Fuel Spill Report for all Class II and Class III spills and deliver it to the ARFF Section within 48 hours of the spill. This report is to be completed by the fueling agent immediately following the incident.

SECTION 7
ENFORCEMENT

7.1 Fines

Any tenant violation of Federal, State or Local laws which results in a fine issued to the Department of Aeronautics will be the responsibility of the violating tenant. This shall include, but is not limited to, the requirements set forth in this program.

Non compliance with any part of this program also subjects the tenant to fines issued by the Department of Aeronautics as defined in the Airport Rules and Regulations.

7.2 Action

a. The Department may close and/or remove from service any portion of the affected system it deems unsafe until such time as the condition is corrected.

b. In the event that a violation (non-emergency condition) of the requirements as set forth in this program are not corrected within a time frame set forth by the Department, the Department may, at its discretion, close the facility or remove from service the equipment in violation until the non-complying conditions are corrected.

c. In the event of contamination of the environment occurs, the Department of Aeronautics shall notify the appropriate Federal, State or Local environmental authorities at its discretion. The Department of Aeronautics is the only agency to make such notification.

GERALD FORD INTERNATIONAL AIRPORT
FUEL FARM STORAGE AREAS

AGENCY: _____ DATE: _____ INSPECTOR: _____

ANY QUESTIONS SHOULD BE DIRECTED TO THE
INSPECTOR NOTED ABOVE AT 233-6079

	DATE						
	TYPE OF FUEL						
1.	FUEL LABELING/MARKING						
2.	FUEL MARKING/UNLOADING STATION						
3.	FUEL MARKING/LOADING STATIONS						
4.	NO SMOKING SIGNS						
5.	GROUNDING/BONDING CABLES						
6.	CONDITION OF HOSES						
7.	FIRE EXTINGUISHERS						
8.	EVIDENCE OF SMOKING						
9.	FENCING/GATES/LOCKS						
10.	LOADING PORT LOCKS						
11.	GROUNDED RODS AVAILABLE						
12.	FUELING PROCEDURES OBSERVED						
13.	PERSONNEL TRAINING REQUESTS						

****

ITEMS BELOW THAT ARE NOTED AS A DEFICIENCY IMMEDIATELY CLOSE THE FUEL STORAGE AREA UNTIL THESE ITEMS ARE CORRECTED.

14.	EMERGENCY CUTOFF - LOADING STATION						
15.	DEADMAN CONTROLS						
16.	FUEL LEAKS						
17.	IGNITION SOURCES						
DATE OF MOST CURRENT CONTINUITY CHECK							

REMARKS:

S - SATISFACTORY U - UNSATISFACTORY R - REMARK X - FUEL FARM CLOSED

GERALD FORD INTERNATIONAL AIRPORT MOBILE FUELERS

Original Date: 12-3-04

Revision Date: 11-4-10

Exhibit #9
139.321

Kenneth M. Tarin
FAA Approval
12/8/10

AGENCY:____________________ INSPECTOR:______________________________

A QUESTIONS SHOULD BE DIRECTED TO THE INSPECTOR NOTED ABOVE AT 233-6079

	DATE						
	TYPE OF FUEL						
	TRUCK NO.						
1.	FUEL LABELING/MARKING						
2.	NO SMOKING SIGNS						
3.	FLAMMABLE SIGNS/PLACARDS						
4.	FIRE EXTINGUISHERS (BC)						
5.	NOZZLE SCREENS						
6.	CONDITION OF HOSES						
7.	GASKETED DOME COVERS						
8.	VEHICLE EXHAUST SYSTEM						
9.	EVIDENCE OF SMOKING						
10.	FUEL VEHICLE PARKING						

****

A NIT SHALL IMMEDIATELY BE TAKEN OUT OF SERVICE FOR DEFICIENCIES RELATED TO ANY ITEMS LISTED BELOW UNTIL THE DEFICIENCIES ARE CORRECTED.

11.	EMERGENCY FUEL CUTOFF/MARKED						
12.	BONDING CABLES						
13.	EMERGENCY FUEL CUTOFF/OPERABLE						
14.	FUEL LEAKS						
15.	IGNITION SOURCES						
DATE OF MOST CURRENT CONTINUITY CHECK							

REMARKS:

S - SATISFACTORY U - UNSATISFACTORY R - REMARK X - FUEL FARM CLOSED

Kenneth R. Taira
FAA Approval 12/8/2010

GERALD FORD INTERNATIONAL AIRPORT
FUEL SPILL REPORT

Date: _____ Time: _____ Location:_____

Class of Fuel Spill: _____ Gallons of Fuel Spilled: _____

Name of Fuel Operator: _____

Aircraft Type: _____ Tail Number: _____ Operator:

Was the spill due to an equipment failure? Yes ( ) No ( )

Was the equipment failure on an aircraft or fuel truck?

Fueling agent's statement:

Supervisor's Statement:

Explain How the Spill was Cleaned Up and Disposed of:

This report is due at the ARFF Building not later than 48 hours after the spill occurred. Questions please call 233-6079.

Remarks & Follow-Up:

Or. Date: 12-3-04

Revision Date: 11-4-10

Exhibit #9
139.321

FAA Approval 12/8/2010

Appendix F
Current Deicing Management and Monitoring Plan

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2016-2017 Deicing Runoff Management and Monitoring Program Plan

Prepared for:
Gerald R. Ford International Airport

October 2016

Prein&Newhof
Engineers ▪ Surveyors ▪ Planners ▪ Environmental ▪ Laboratory

Mead & Hunt

LimnoTech
Water Environment | Scientists Engineers

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LimnoTech
Water Environment | Scientists Engineers

501 Avis Drive
Ann Arbor, MI 48108
734.332.1200
www.limno.com

2016-2017 Deicing Runoff Management and Monitoring Program Plan

Prepared for:
Gerald R. Ford International Airport

October 2016

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1 Introduction

To aid in complying with its National Pollutant Discharge Elimination System (NPDES) Permit number MI0055735 (modified and effective August 1, 2013), the Gerald R Ford International Airport (GFIA) had developed its Deicing Runoff Management and Monitoring Program. The plan provides a description of the continuing efforts and actions being conducted to control stormwater discharges of aircraft deicing fluid (ADF) and airfield deicers. This plan includes the following near-term program enhancements to augment the collection of ADF impacted runoff, including:

- Improved best management practices (BMPs) in the Cargo area,
- A policy to ensure that tenant aircraft ADF operations are conducted at designated areas, and
- A policy to manage ADF impacted snow piles.

This document describes monitoring procedures that will help ensure Permit compliance and support the evaluation of BMP performance, but it does not create any legal obligations not otherwise specifically enumerated in GFIA's NPDES Permit.

1.1 Background

The Kent County Department of Aeronautics (KCDA) discharges stormwater associated with industrial activities under an individual NPDES permit for the Gerald R. Ford International Airport issued by the Michigan Department of Environmental Quality (MDEQ). This permit authorizes discharges of stormwater runoff to unnamed tributaries to the Thornapple River and Plaster Creek.

Compliance with the NPDES permit is based on implementation of BMPs and program enhancements to reduce the presence of ADF and airfield pavement deicers in stormwater being discharged off-site. These requirements are intended to protect the receiving streams from loadings of biochemical oxygen demand (BOD) contributed by the deicers that can provide a food source for naturally occurring stream bacteria.

Figure 1-1 contains a chronology of BMP implementation under GFIA's deicing management program.

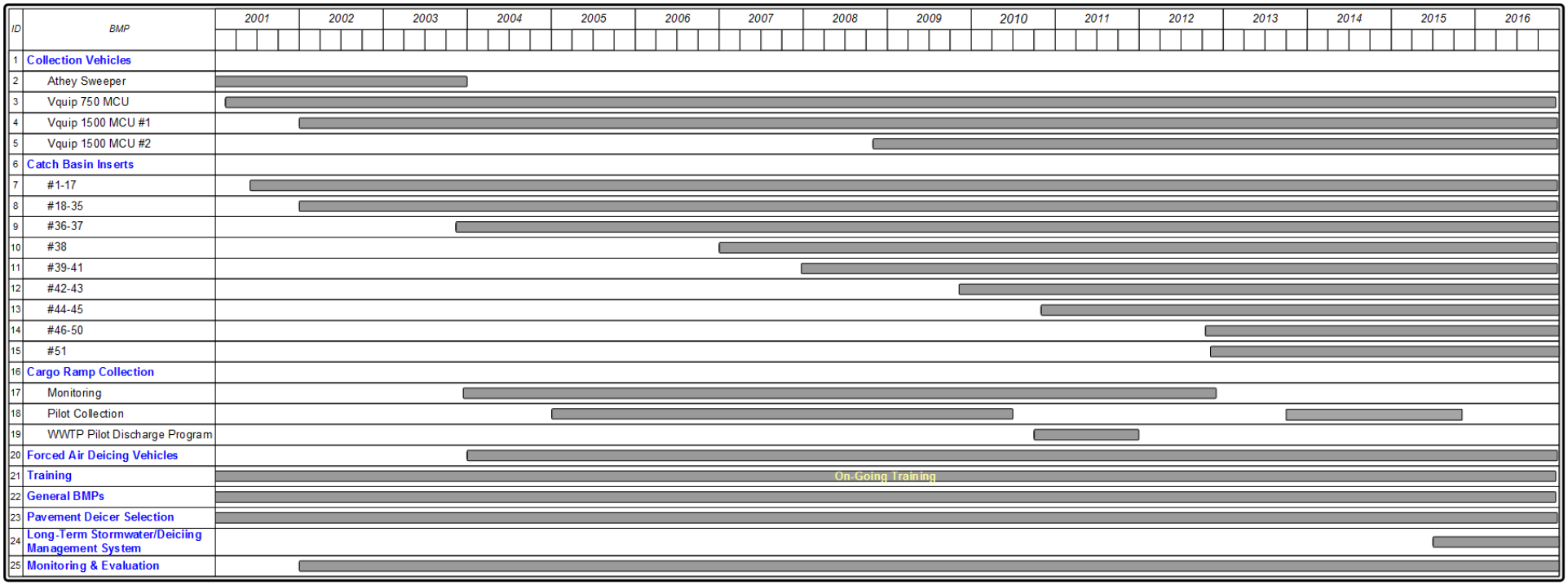

Figure 1-1. Chronology of GFIA Deicing Management Program BMP Implementation.

For the 2016-2017season, this Deicing Runoff Management and Monitoring Plan has been developed to aid in complying with GFIA's August 2013 NPDES permit through the continued and expanded efforts initiated during the previous deicing seasons, with a focus on improving collection and control of deicing fluids and reducing their presence in stormwater discharges from GFIA. A combination of efficient aircraft and pavement deicing practices and aircraft deicing runoff collection, control, and treatment efforts are used to achieve these goals. In addition, the Plan includes procedures that will be used for monitoring deicer usage and discharge water quality. GFIA also continues to track and evaluate new techniques and practices that have the potential to contribute to future reductions in deicing-related BOD loads.

In parallel with the program described in this plan, GFIA has implemented a new stormwater/deicing management system which was the selected alternative from the Long-Term Deicing Runoff Management Program Study. The management system was implemented to help eliminate GFIA's contribution to biofilm growth conditions in an unnamed tributary to the Thornapple River (known locally as Trout Creek) and was completed prior to the 2015-2016 deicing season, in accordance with permit requirements. Elements of the management system include the consolidation of runoff from aircraft deicing operations, redirection of stormwater away from the unnamed tributary to the Thornapple River, detention, and sediment and trash removal, and a Natural Treatment System (NTS) designed to reduce BOD concentrations and loads to comply with the Final Effluent Limitations in the August 2013 permit. All stormwater formerly discharged through outfall 001, as well as that from primary deicing areas in the outfall 004 and outfall 007 drainage areas is now routed to the NTS and discharged through Outfall 011 during the deicing season (Outfall 011 is a submerged diffuser). As such, the majority of runoff from deicing areas now goes through the treatment system.

1.2 Purpose

The purpose of this document is to describe all aspects of GFIA's program to manage runoff from deicing activities during the 2016-2017 deicing season to assist the airport to comply with all NPDES permit requirements.

1.3 Overview of the Deicing Management Program

The Deicing Runoff Management Program is administered by a team of individuals representing the airport, consultants, and tenants who are responsible for supervising and operating the system of controls and practices. The organizational structure of this team and the system of controls are described in the following subsections.

1.3.1 Organization

The roles and responsibilities of each organizational element within the Deicing Management Program are presented in Figure 1-2.

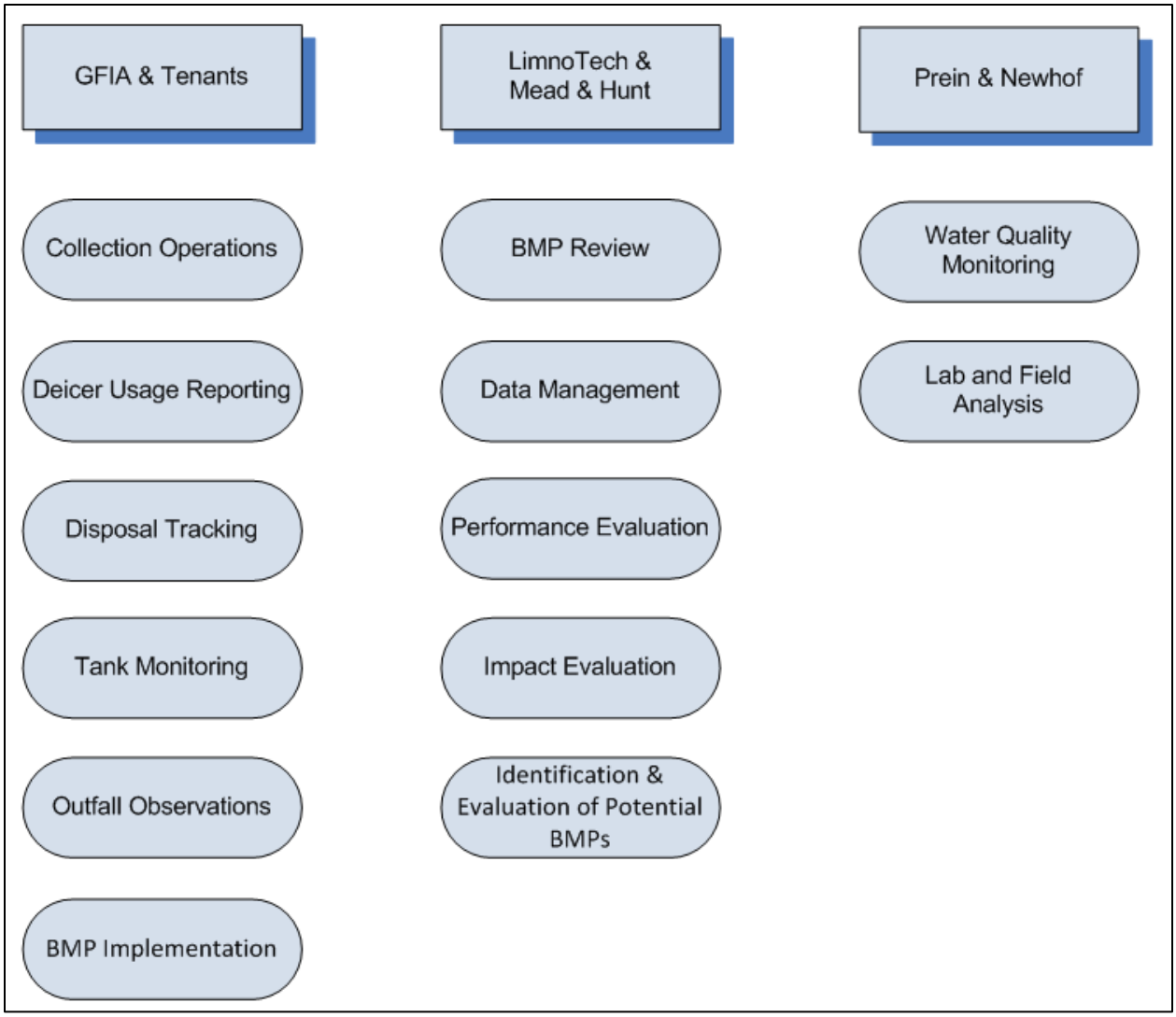

Figure 1-2. Organizational responsibilities of the GFIA Deicing Management Program team members.

1.3.2 Control Program Components

The elements of the GFIA Deicing Management Plan fall into several categories that help reduce pollutant loading of stormwater discharges as summarized in Table 1-1.

Table 1-1. Major Elements and Expected Benefits of the Deicing Management Program.

BMP Category	Management Practice/Activity	Expected Benefit(s)
General	Deicing materials storage Deicing materials spill management education Education and training of employees, contractors, and tenants ADF-impacted snow management	Reduced stormwater BOD loading
Landside Pavement Deicing	Mineral salt based deicer	Reduced stormwater BOD and ammonia loading
Airfield Pavement Deicing	Urea ban Availability of sodium formate from GFIA Heated sand Proactive anti-icing Plowing/Brooming Pavement deicing materials selection Pavement deicing application Pavement deicing application area Materials management Materials use tracking	Reduced stormwater BOD and ammonia loading
Aircraft Deicing	Aircraft deicing mixtures blended to temperature Aircraft deicing equipment Heating aircraft deicing mixtures Application technique for aircraft deicing mixtures Proactive aircraft anti-icing Two-step aircraft application method Isolation and collection of aircraft deicing runoff Location of aircraft deicing in contained areas Physical removal of accumulations Materials management Materials use tracking	Reduced stormwater BOD loading
Deicing Runoff Storage and Disposal	Tankage and transfer Off-site disposal Investigation of alternative disposal options	Reduced stormwater BOD loading
Long-Term Stormwater/Deicing Management System	Detention basin and trash screens Natural treatment system (NTS)	Reduced stormwater BOD loading; sediment and trash removal
Training and Awareness	Training programs Awareness building Tenant Inspections	Reduced stormwater BOD and ammonia loading
Monitoring	Performance of controls Stormwater discharges to receiving waters	Evaluation of BMP performance
New Technology	Information exchange with other airports Tracking new technology Annual review of new controls	Ensure that GFIA and tenants are aware of new opportunities for reducing stormwater BOD loading
Annual Program Evaluation and Refinement	Performance measures Annual Report	Evaluation of overall Program performance and identification of improvements if necessary

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2 General Best Management Practices

The GFIA Deicing Management Program consists of a suite of BMPs that help reduce the environmental impacts from both aircraft and pavement deicing activities. General BMPs are the first tier management approaches that will continue to be implemented to minimize or prevent the exposure of stormwater runoff to deicing materials, as necessary and appropriate. Each General BMP is described below.

2.1 Deicing Materials Storage

Deicing materials will be stored and maintained in accordance with manufacturer guidance, as well as the preventive measures and structural source control BMPs described in GFIA's Stormwater Pollution Prevention Plan.

2.2 Deicing Materials Spill Management Education

A continuing program of employee, contractor and tenant orientation and education is maintained to help ensure awareness of the necessity of good facility control and quick and proper action in the event of a spill, accident, or equipment failure.

2.3 Education and Training of Employees, Contractors and Tenants

Because the control of deicing impacts on stormwater generally is dependent on the conscientious efforts of airlines, fixed base operators (FBOs), Service Operators, GFIA Operations, and others, specific efforts will be undertaken to help ensure that all individuals who are involved in the aircraft and pavement deicing processes are aware of both the environmental issues surrounding these activities, as well as the Airport's program for controlling their impacts.

The following subsections refer to education and awareness raising activities that are planned at GFIA.

2.3.1 Airlines and FBOs

A major component of the Deicing Management Program is the active participation of airlines, freight carriers, service providers, and FBO representatives in the development of deicing runoff control strategies and procedures. The airlines and FBOs operating at GFIA conduct annual training programs that include the following topics:

- Aircraft deicing and anti-icing procedures,
- Approved aircraft deicing and anti-icing locations,
- Materials handling and management

These annual training programs are conducted by each airline, freight carrier, service provider, and FBO to ensure awareness of how tenant deicing operations relate to the overall GFIA Deicing Management Program.

2.3.2 GFIA Employees and Tenants

GFIA conducts employee, contractor, and tenant education to inform and train personnel directly involved in deicing operations or deicing materials collection, treatment, and discharge. This program focuses on the environmental effects of deicing materials and material handling techniques that help minimize the amount of deicing materials entering the stormwater system.

As part of the Deicing Management Program, GFIA Field Maintenance staff receives annual training in the following areas:

- Operation of the V-Quip mobile collection units (MCUs)
- Definition of glycol use areas
- Location and operational use of manhole inserts, covers, and containment devices
- Instruction on collection methods
- Instruction on collection efficiency
- Direction on storage of recovered product
- Handling and use of pavement anti-icing product
- Glycol-impacted snow management

Training sessions are generally conducted during October and November of each year. Additional training sessions are conducted throughout the season on an as-needed basis when new equipment or materials are received. All new employees are trained as part of program involvement.

3
Pavement Deicing Best Management Practices

Pavement deicing activities are separated into airside and landside practices. In both instances, control efforts rely principally on the use of the most environmentally friendly deicing materials that meet Federal Aviation Administration (FAA) and safety requirements. In addition, the Airport employs application practices to maximize safety and effectiveness.

3.1 Airside Pavement Deicing

Airside pavement deicing practices at GFIA employ deicing chemicals selected to minimize environmental impact, and application techniques designed to help maximize safety and effectiveness while minimizing over-application and waste. These practices are described in the following subsections.

3.1.1 Heated Sand

The primary material used at GFIA for improving airfield pavement traction is heated sand, pre-wetted with liquid deicer when conditions require. GFIA Field Maintenance uses a dedicated storage facility that has a heated floor and ceiling-mounted infrared heating units. By continuing to use this facility for the storage and heating of sand, GFIA will continue to receive benefits of this technology (e.g. reduced pavement deicing chemical usage).

3.1.2 Pavement Deicing Materials Selection

GFIA discontinued the use of urea for airfield pavement deicing during the 2000-2001 deicing season because of concerns over elevated ammonia concentrations in runoff from pavement treated with urea.

For the 2016-2017 deicing season, potassium acetate and sodium formate will again be used as the primary airfield pavement deicing products. Potassium acetate, which is a liquid product, has a lower BOD content than ethylene glycol, which had historically been used in conjunction with urea. Sodium formate is a granular product that has replaced urea because of negative environmental impacts associated with urea use and its virtual ban by USEPA.

3.1.3 Airside Pavement Deicing Application

Strategies for improving the efficiency of pavement deicer application while maintaining safe operating conditions in aircraft operating areas, focus principally on proactive anti-icing and plowing prior to chemical application.

Proactive Anti-icing. Proactive anti-icing involves application of deicers prior to the onset of a snow or ice event to act as a bond inhibitor at the pavement surface so that mechanical means (plows and brooms) can be used for removal of snow and ice once the event has begun. Proactive anti-icing is important because it has been estimated that it may take 5 to 10 times as much deicing chemical to break the ice-pavement bond than to prevent it. Airport operations also benefit from proactive anti-icing. By being proactive, the chemical applications can usually be timed so as to minimize runway closures and consequent impacts on traffic flow. Additionally, the duration of closures are minimized because it takes less time to apply less chemical, and there is little or no time wasted waiting for friction readings to recover.

Plowing/Brooming Prior to Chemical Application. When appropriate, plowing and brooming will be conducted prior to chemical application to minimize waste and avoid the contamination of plowed snow.

3.1.4 Airfield Deicing Application Area

As appropriate under the right circumstances, GFIA will continue to minimize the application area for airside pavement deicing to reduce the volume of materials necessary.

3.2 Landside Pavement Deicing

The use of a mineral salt product that has no BOD has effectively eliminated BOD loading from landside pavement deicing activities, which are covered under GFIA's MS4 permit but help with overall airport environmental protection.

Awareness training will again be conducted for all personnel involved in pavement deicing activities at GFIA to ensure that mineral salts are not applied on the aircraft operating area (AOA) or in areas where it might be tracked onto the AOA.

3.3 Tenant Pavement Deicing Materials

Since 2001, the GFIA Maintenance Department has offered sodium formate at its cost to the tenants at the airport. The purpose of this program is to ensure that the tenants have a source for an appropriate environmentally friendly airside pavement deicing chemical for use at their facilities. For the 2016-2017 season, the GFIA Maintenance Department will again make sodium formate available for purchase at its cost by any tenants needing an approved airside pavement deicing material.

3.4 Materials Handling and Management

To prevent the contamination of stormwater by spills or leaks of any deicing/anti-icing materials, GFIA utilizes appropriate spill response techniques, per the Airport's Spill Prevention Control and Countermeasures (SPCC), Pollution Incident Prevention Plan (PIPP), and Stormwater Pollution Prevention Plans (SPPP). Any spilled material will be contained, cleaned up, and disposed of properly.

3.5 Record-Keeping and Reporting

Daily GFIA airside pavement deicer usage is tracked by GFIA Maintenance. This information will help provide estimates of total amounts of airside deicers used during the season.

4
Aircraft Deicing Best Management Practices

Aircraft deicing/anti-icing is first and foremost an issue of flight safety. The FAA strictly regulates deicing/anti-icing procedures and materials. Pertinent FAA regulations provide:

> "...no person may takeoff an aircraft when frost, ice or snow is adhering to the wings, control surfaces, propellers, engine inlets or other critical surfaces of the aircraft."
>
> "...no person may dispatch, release or takeoff an aircraft anytime conditions are such that frost, ice or snow may reasonably be expected to adhere to the aircraft, unless the certificate holder has an approved ground De/Anti-icing program in its operations specifications and unless the dispatch, release, and takeoff complies with that program."
> (FAR 121.629)

Each airline at GFIA has an FAA approved deicing/anti-icing program, and is required to comply with that program. However, in carrying out their general safety obligations, GFIA will continue to promote conservation practices to the air carriers, as appropriate.

Controls on the impacts of aircraft deicing activities are focused on protecting flight safety while helping to minimize the use of deicing/anti-icing fluids through maximizing application efficiency, and on containment of runoff at the locations where aircraft are deiced. The airlines are also evaluating several procedures that should reduce the volume and BOD concentrations of aircraft deicing runoff discharges.

4.1 Aircraft Deicing Practices

Air carriers and operators are responsible for all aircraft deicing operations at GFIA. GFIA staff and contractors are responsible for the collection, handling, and disposal of the resulting deicing runoff. The responsibilities associated with aircraft deicing BMPs are consistent with these roles.

The following subsections provide details on the aircraft deicing controls and discharge reduction efforts that will be implemented at GFIA during the 2016-2017 deicing season.

4.1.1 Forced Air/Fluid Deicing Vehicle

This deicing technology combines warm air at near sonic speed with traditional deicing mixtures dispensed at relatively low flow rates. The goal is to deice effectively while reducing the amount of glycol used. A carrier at GFIA has used Tempest® forced air/fluid deicing vehicles since the 2003-2004 season. A series of side-by-side comparisons between the forced air/fluid and traditional deicing vehicles conducted during past seasons indicated that glycol usage can be reduced by approximately 49%. GFIA will continue to promote the use of forced air/fluid deicing vehicles by its tenants.

4.1.2 Aircraft Deicing Equipment

Consistent with FAA regulations, standards, and requirements, GFIA will continue to encourage each carrier to use, and have available for use, deicing fluids and associated equipment which facilitate the use of efficient deicing mixtures, or otherwise reduce the total amount of glycol required to deice aircraft.

4.1.3 Heating Aircraft Deicing Mixtures

GFIA encourages each carrier to heat deicing mixtures to a minimum temperature of 140°F prior to application to ensure maximum fluid effectiveness.

4.1.4 Application Technique for Aircraft Deicing Mixtures

Consistent with their FAA-approved deicing plans, each carrier is encouraged to apply deicing mixtures to aircraft surfaces in a manner and with equipment that maximizes the effectiveness of the deicing mixture, while not significantly overusing the amount of mixture necessary to ensure safe aircraft operations.

4.1.5 Aircraft Anti-icing

Because only glycol-based aircraft deicing fluids (ADFs) and aircraft anti-icing fluids (AAFs) are approved for use on aircraft, source reduction strategies necessarily focus on improving the efficiency of application techniques. Type IV AAFs provide much longer protection from ice and snow accumulation after application (i.e., hold-over times) than Type I fluids. As a result, aircraft can be treated with a Type IV AAF upon arrival, when the aircraft is assumed to be clean, and in many cases remain effectively protected from snow and ice accumulation until takeoff. Thus, the need for conventional deicing prior to departure can often be significantly reduced. In addition, because Type IV fluids are thicker and cling to the aircraft, they tend to be applied more efficiently, with reduced losses due to overspray and drippage.

Each carrier at GFIA during the 2016-2017 deicing season is encouraged to apply Type IV aircraft anti-icing fluid to aircraft in order to reduce BOD loading and in a manner consistent with FAA approved deicing plans when the use of anti-icing fluids will retard or prevent the formation of ice or frost on aircraft. Application of Type IV anti-icing fluids will be promoted for remaining overnight (RON) aircraft when snowfall is predicted during the overnight period.

4.1.6 Two-Step Aircraft Application Method

Consistent with FAA regulations, standards, and requirements, each carrier is encouraged to utilize a "two-step" method of deicing and anti-icing whereby Type IV anti-icing solution is applied to an aircraft after deicing is complete for the purpose of reducing the total volume of deicing and anti-icing materials that otherwise may be required.

4.1.7 Aircraft Deicing Mixtures

Each carrier is encouraged to apply an efficient deicing mixture that complies with FAA regulations and requirements, and the particular airline's FAA-approved deicing plan. "Efficient" in this context generally means the ratio of deicing fluid to water (the ratio is determined by freeze-point depression tables for the fluid, allowing for the FAA required temperature buffer) that provides effective deicing performance in the current and reasonably anticipated weather and operation conditions while minimizing BOD loading.

Airlines at GFIA have typically used a 50/50 mixture of glycol/water for deicing purposes. The FAA requirements for ADF application mixtures to achieve a "clean aircraft" are based on the difference in temperature between the outside air temperature and the freeze point temperature of the deicing mixture. For instance, a typical 50/50 mixture of a standard Type I deicing fluid has a freeze point of -18 ºF and therefore can be used when the outside air temperature is as low as 0 ºF. Under typical GFIA winter conditions, more moderate temperatures accompany conditions that require deicing/anti-icing. Under these moderate temperatures, a mixture with as little as 20% glycol may be effective. Hence, appropriate "blend to temperature" practices are strongly encouraged.

4.1.8 Physical Removal of Accumulations

Certain carriers at GFIA have removed large accumulations of snow from aircraft with brooms prior to ADF application to reduce the amount of deicing fluid necessary to achieve a clean aircraft condition. GFIA will continue to promote this practice to its tenants as appropriate.

4.1.9 Voluntary Use of Propylene Glycol Based Products

Since 2002, all carriers and FBOs have used propylene glycol based products exclusively, which helps to facilitate recycling of glycol from collected runoff. GFIA's tenants will continue their voluntary use of propylene glycol based products during the 2016-2017 season.

4.2 Isolation and Collection of Aircraft Deicing Runoff

GFIA generally collects aircraft deicing runoff from the areas where aircraft deicing is conducted. The airport accomplishes a high collection volume by utilizing NexGen (formerly V-Quip) tow-behind Mobile Collection Units (MCUs) in conjunction with catch basin inserts installed in the aircraft deicing areas. The airport uses three MCUs (one T750 and two T1800s) for the collection of spent deicing fluid from pavement surfaces. Collection activities will generally be conducted whenever aircraft deicing operations are underway and collection is necessary and appropriate. Coordination and communications between carriers and FBOs and the GFIA deicing program staff will be used to facilitate collection of deicing runoff as it occurs. Note that in limited instances, defrosting activities will require tenants to use deicing materials that pose no environmental threat that also do not require MCU use.

Appendix B presents the details of the MCU operations plan.

4.2.1 Location of Aircraft Deicing

Even though the majority of runoff from deicing areas is now routed to the NTS for treatment prior to discharge, GFIA requires each carrier generally to deice aircraft in areas equipped to facilitate the retention and collection of deicing runoff. Figure 4-1 shows the designated aircraft deicing and anti-icing areas for the 2016-2017 season.

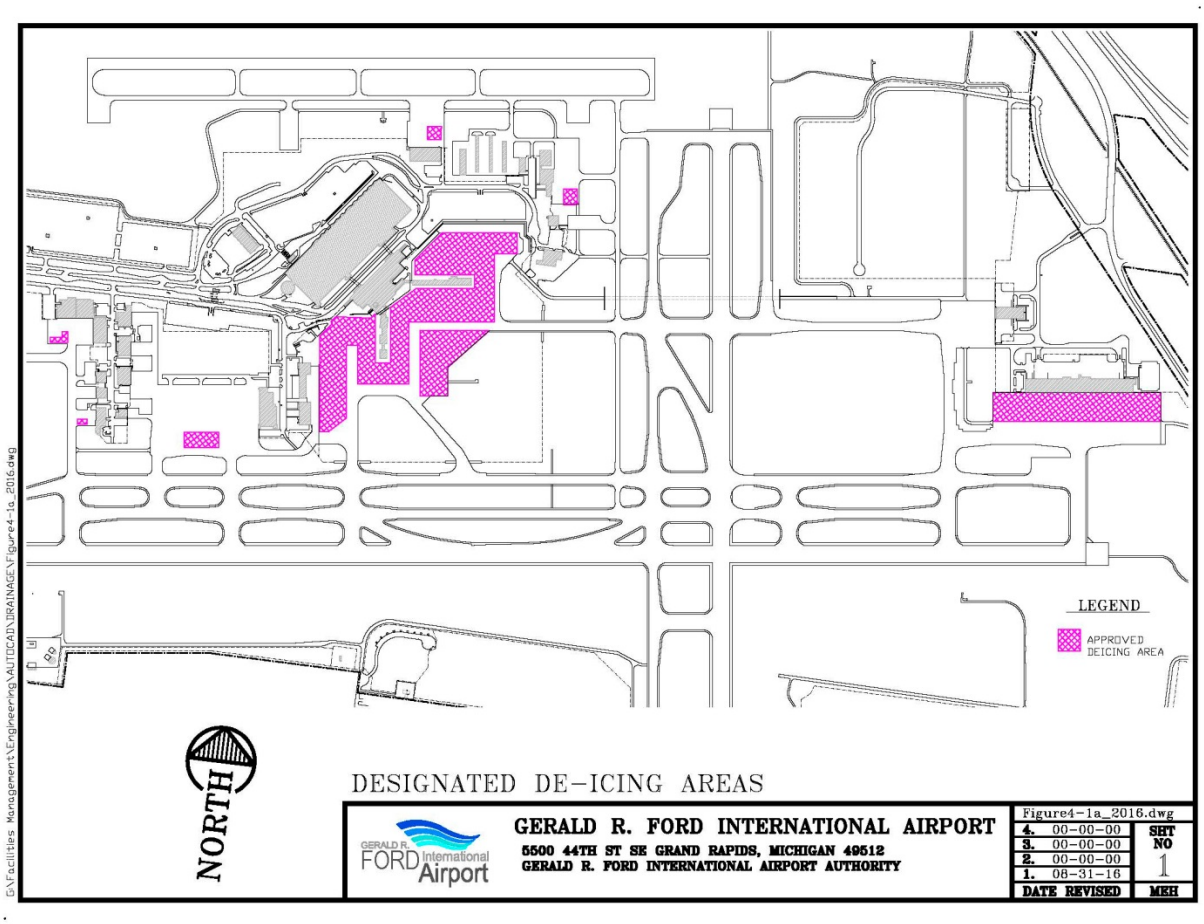

Figure 4-1. Approved Locations for Aircraft Deicing/Anti-icing.

In the interest of continuing to promote the efficient use of aircraft deicing fluids and increase the recovery of those fluids, GFIA requests that airlines and FBOs perform deicing operations on pavement areas adjacent to their gates that have been plowed. GFIA also requests that aircraft deicing be conducted as close to departure time as possible. The goal of these requests is to minimize both the area where deicing fluids are applied and the time elapsed between deicing and when the MCUs can move in and collect the runoff, thereby facilitating the collection of spent deicing fluid from pavement surfaces.

4.2.2 Catch Basin Inserts

GFIA uses catch basin inserts to prevent spent ADF from entering the storm sewer system and facilitate the collection of high concentration runoff by the MCUs that is suitable for recycling. The inserts have valves that are closed when deicing activity begins, thus impounding runoff for collection by a MCU. The current configuration of 51 inserts ensures that runoff in the primary apron deicing areas is contained. GFIA continually evaluates candidate locations for additional catch basin inserts. Inserts may be added during the deicing season if additional opportunities are identified. Figure 4-2 shows the current locations of the catch basin inserts.

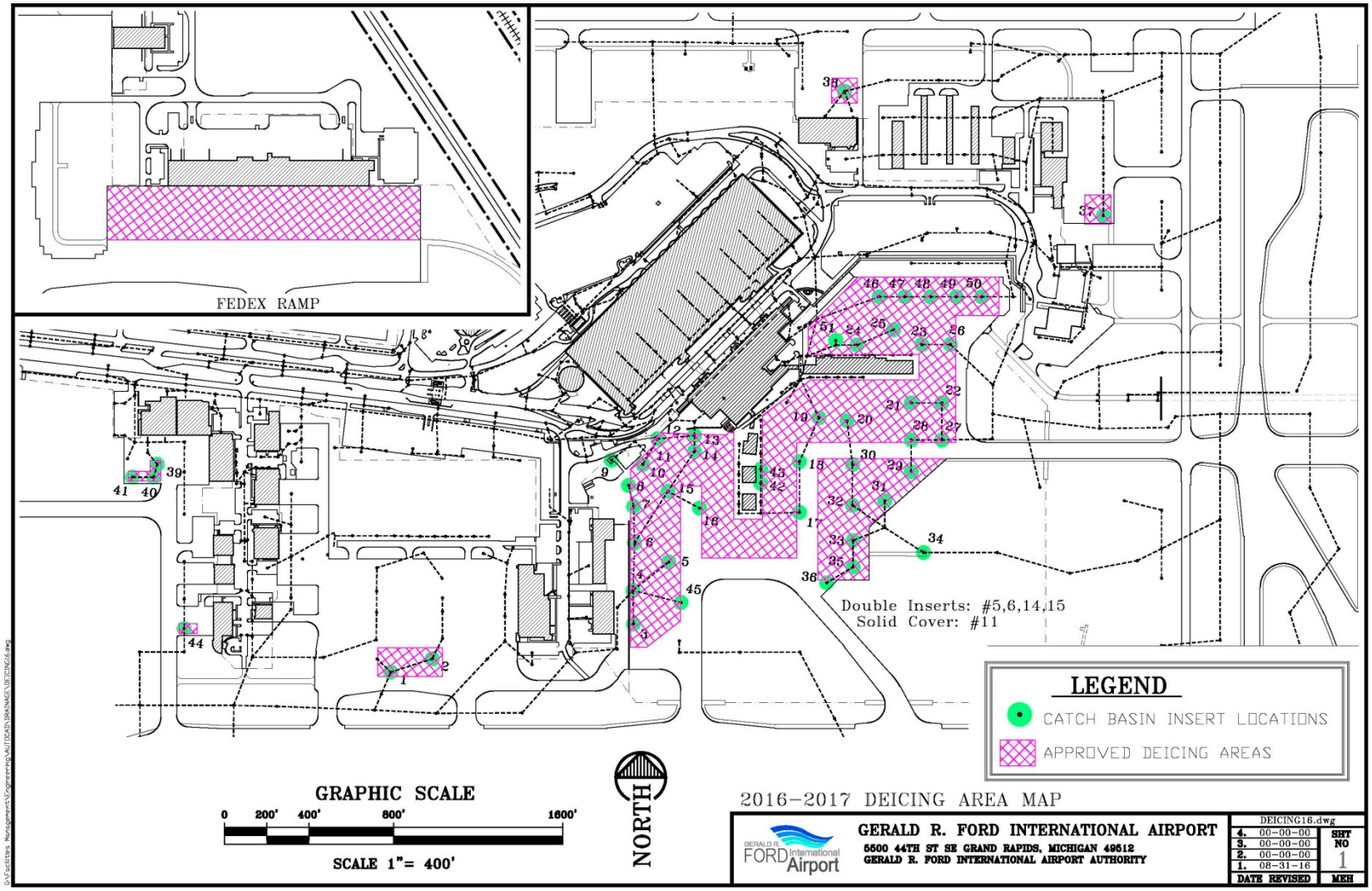

Figure 4-2. Apron Catch Basin Insert Locations.

4.2.3 Management of ADF Impacted Snow

GFIA has developed and implemented a policy to manage ADF impacted snow piles. The goal of the policy is to enhance existing controls associated with ADF and keep impacted snow in the 011 drainage area if possible. By attempting to keep plowed snow within the 011 drainage area, GFIA tries to ensure that snowmelt is routed through the NTS for treatment prior to discharge. GFIA's ability to contain runoff from ADF impacted snow is significantly constrained by space limitations near the terminal apron. Nevertheless, GFIA is committed to using the available space, infrastructure, and equipment to enhance the control of ADF discharges. Snow is removed to infield areas including the existing snow storage area west of the terminal, as appropriate.

Alternative plowing practices are being implemented to minimize the amount of spent ADF removed from the terminal apron surface during snow removal operations. Snow will be removed from the apron travel lanes prior to the departure of the first bank of morning flights, allowing aircraft to push-back from the gates and conduct deicing operations on pavement that is relatively free of snow. This will help facilitate collection of spent ADF by the MCUs.

GFIA will continue to evaluate additional strategies and practices for managing glycol impacted snow in the context of its current operational environment.

4.2.4 Cargo Ramp Runoff

Currently, it is impracticable for GFIA to collect deicing runoff with propylene glycol (PG) concentrations below one percent (1%) due to the lack of available disposal/recycling options for these lower concentrations. Collected runoff must contain PG at concentrations above 1% to warrant possible collection and shipment to the Environmental Quality Company (EQ) in Romulus, Michigan for recycling. Monitoring and collection activities conducted at the cargo ramp during previous seasons resulted in the collection of nominal volumes of ADF. With completion of the long-term stormwater/deicing management system, runoff from the cargo ramp is now routed to the NTS for treatment prior to discharge through Outfall 011.

4.2.5 Pavement Maintenance

To help minimize the amount of spent fluid getting into the drainage system, GFIA Maintenance uses a sealant around the perimeter of each catch basin insert. GFIA also continues to monitor pavement conditions and seal pavement joints and cracks as appropriate as part of its pavement management program.

4.3 Materials Handling and Management

To help minimize the contamination of stormwater, airlines and FBOs are required to utilize appropriate spill response techniques, per their company spill response plan, for spills or leaks of any deicing/anti-icing materials. Any spilled material will be contained, cleaned up, and disposed of pursuant to such plans. Oversprays and drips in the course of applying ADFs and AAFs are not spills or leaks.

4.4 Disposal of Collected Runoff

GFIA will dispose of all collected deicing runoff in compliance with its Permit. At the present time, the primary disposal alternative continues to be off-site over-the-road transport to EQ's Romulus, Michigan facility for recycling of PG. On-site provisions will be established to store collected runoff prior to hauling, and take maximum advantage of EQ's available transport and processing capacity.

For each load of runoff hauled off site, volume, and % glycol will be recorded to provide an estimate of total glycol and BOD exported from the facility.

All off-site disposal will be documented under bills of lading and handled in compliance with all applicable laws and regulations regarding non-hazardous materials.

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5 Monitoring Program

As in previous years, a variety of monitoring efforts will be conducted as part of the 2016-2017 Program.

The Monitoring Plan contained in this section describes the locations, methods, and frequencies of monitoring deicer usage, BMP performance, and stormwater discharges that are planned for the 2016-2017 deicing season. Stormwater discharge monitoring activities will be conducted in accordance with the requirements of the NPDES permit. The discharge monitoring requirements are described in Section 5.5.

5.1 Organization

The Monitoring Program is organized according to the types of data and information to be collected. The following sections describe these monitoring elements. Figure 5-1 provides an overview of the elements of the program.

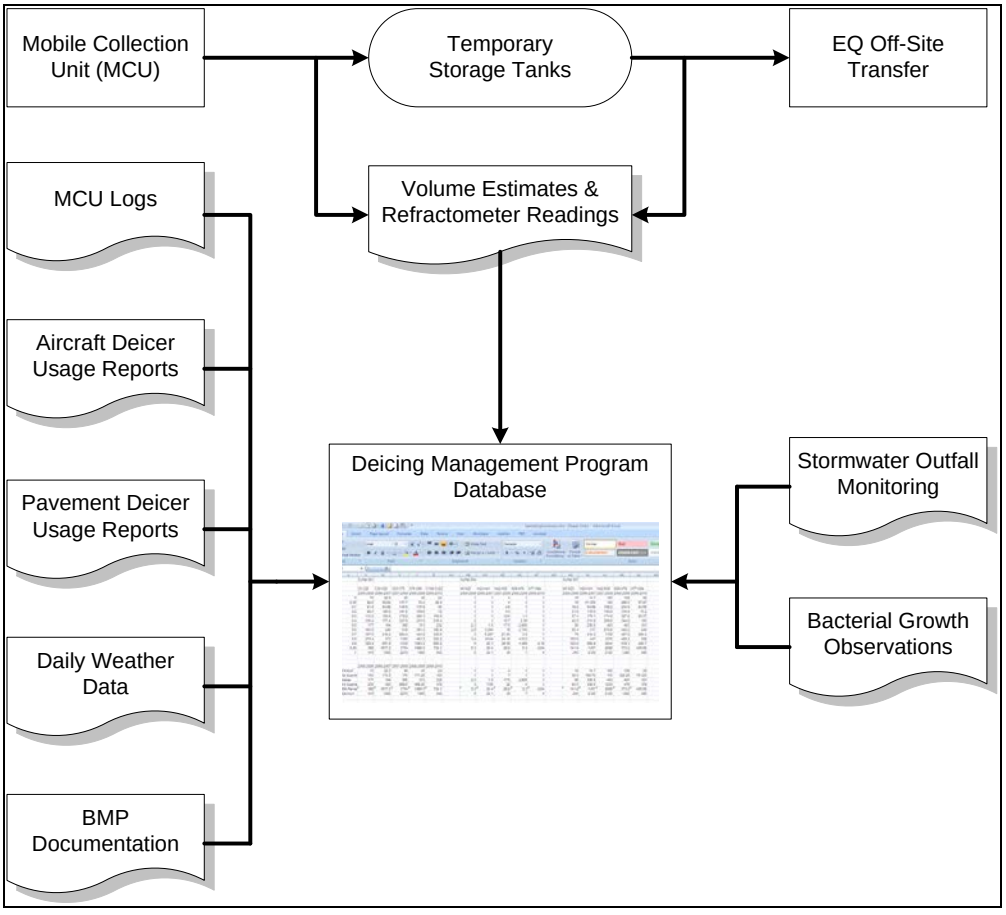

Figure 5-1. Overview of the Monitoring Program Elements.

5.2 Weather

Daily meteorological data will be obtained by LimnoTech staff from the National Weather Service to support analyses of deicing activities and associated stormwater discharges. Data will include the following parameters:

- Minimum, maximum, and average temperature
- Total precipitation
- Snowfall
- Freezing precipitation

5.3 Deicer Usage

Aircraft and pavement deicer usage is required to be reported by all entities (i.e., aircraft operators, fixed base operators (FBOs), and GFIA Maintenance Department) that conduct deicing at GFIA to serve as the basis for mass balance calculations related to BMP performance and stormwater discharge water quality.

5.3.1 Pavement Deicer Usage

Pavement deicer usage will be reported by the GFIA Maintenance Department. Locations and amounts of each type of pavement deicer applied daily will be recorded using the GFIA Maintenance Pavement Deicer Usage Log (Appendix A).

5.3.2 Aircraft Deicer Usage

Each airline, freight carrier, service provider, and fixed base operator (FBO) is responsible for accurately tracking and reporting the types and volumes of aircraft deicing fluid (ADF) used. Usage should be reported by each user by gate, ramp, or other location on a daily basis.

The following data elements are required to be reported by the air carriers for each aircraft deicing:

- Date, time, and flight number
- Gallons of ADF mixture applied
- Location of application (i.e., gate number or apron area)
- Glycol base (i.e., ethylene or propylene glycol)
- Society of Automotive Engineers (SAE) Type (i.e., Type I or IV)
- Mixture strength applied (ratio of glycol/water)

A copy of the form that is used for recording aircraft deicing activities is provided in Appendix A.

These reports should be submitted to GFIA by the airlines and FBOs on a monthly basis, and compiled in the program database.

5.3.3 Annual Deicing/Anti-Icing Materials Reconciliation

An annual reconciliation form will be distributed to the airlines, freight carriers, service providers, and FBOs at GFIA to provide information on total seasonal inventories of deicing fluids. The following data will be required to be reported from the carriers and FBOs:

- Amounts of Type I and Type IV fluid on hand at the beginning of the season,
- Amounts of Type I and Type IV fluid on hand at the end of the season, and
- Amounts of Type I and Type IV fluid received during the course of the season
- Type of equipment used for deicing operations
- Estimated percent of fluid usage applied by each piece of equipment

The reconciliation forms will be requested to be submitted to the GFIA Facilities Department by Friday May 31, 2017. A copy of the annual reconciliation form is provided in Appendix A.

5.4 BMP Performance

Monitoring of the performance of implemented BMPs generally is accomplished in several different ways, depending on the nature of the practice being evaluated.

- BMPs that involve source reduction are evaluated by estimating the volumes of deicing fluids that would have been used prior to BMP implementation, and comparing that to the volumes used with implementation.
- The performance of runoff collection efforts are monitored by measuring the glycol concentrations in all collected runoff and comparing the mass of captured glycol to that reported by carriers as being applied to aircraft during the collection period.
- The benefits of certain BMPs, such as heating sand for pavement deicing, cannot be readily quantified, and can only be evaluated based on qualitative observations.

5.4.1 Runoff Collection

The performance of the mobile collection units (MCUs) in collecting deicing runoff is monitored in terms of machinery operations and volumes of glycol collected. Collection performance data is tracked through machine operation logs and volumes and PG concentrations of collected runoff. Examples of the MCU logs are presented in Appendix A. MCU log data includes the following information:

- Gate or slot location
- Start and stop time
- Volume of runoff collected

The following information is recorded on the MCU Operations Log:

- Time
- Weather conditions
- Transfer location
- Total load volume

5.4.2 Source Reduction Efforts and Other BMPs

Source reduction efforts instituted by the carriers and GFIA Maintenance generally is described and documented to support the estimation of volumes of deicing fluids and materials that would have been used prior to BMP implementation, so that they may be compared to the actual amounts used with implementation. The benefits of certain BMPs, such as heating sand for pavement deicing, cannot be readily quantified, and can only be evaluated based on qualitative observations. The implementation of this class of BMPs will be documented.

5.5 Discharge Water Quality

Stormwater discharge monitoring activities will be conducted in accordance with the following requirements of the NPDES permit:

- Daily flow monitoring at Outfalls 011, 004, and 007 during the period 10/1-5/31,
- Monthly flow monitoring at Outfalls 001 (if flow has been routed to 001), 011, 004, and 007 during the period 6/1-9/30,

- Twice monthly "deicing discharge event" monitoring at Outfalls 011, 004, 007, and the NTS Upstream monitoring location (NTSU) during the period 10/1-5/31, and
- Monthly "dry weather" sampling at Outfall 011 and the NTSU.

Sampling locations, frequency, and analyses are specified in accordance with the Permit as described below.

5.5.1 Monitoring Locations

Stormwater discharges will be monitored at outfalls 011, 004, and 007 because they serve the drainage areas impacted by deicing activities. Monitoring will also be conducted at the NTSU location to generate data to support the required performance characterization of the NTS. Locations of the monitoring stations are shown in Figure 5-2. Outfall 011 monitoring will be conducted at the 011A monitoring location on the 48 inch storm sewer along the outfall 011 access service drive east of M-6 adjacent to the Thornapple Pointe Golf Course. This outlet conveys flow from the NTS to the Thornapple River. The NTSU monitoring location is immediately upstream of the stormwater detention basin on the 108-inch storm sewer that conveys flow from the airfield to the detention basin and NTS. Outfall 004 monitoring will be conducted at the 004A monitoring location which is immediately downstream of the overflow structure that serves the south detention area west of Runway 17/35. This outlet conveys flow to an unnamed tributary of the Thornapple River via a 60 inch storm sewer. Outfall 007 monitoring will be conducted at the 007A monitoring location which is a manhole adjacent to Gate 30, on the 48-inch storm sewer approximately 450 feet upstream of the storm sewer outlet. Flow at this location is representative of the 007 discharge because it is downstream of all significant lateral connections to the storm sewer system. The 007 outlet conveys flow to an unnamed tributary of Plaster Creek.

5.5.2 Monitoring Frequency

Different types of monitoring will be conducted at different frequencies, as described in the following subsections.

Flow Measurement

In accordance with the permit, daily flow measurements will be collected at the 011, 004, 007, and the NTSU locations from October through May during the 2016-2017 season. Measurements will be collected using the same equipment and methodology as for the deicing event runoff monitoring effort, as described in Section 5.5.3. The logged data will be downloaded on a regular basis and entered into the project database. Continuing efforts will be made to maintain the flow monitoring equipment in good operating condition to maximize data collection. As during past seasons, it is expected that transient obstructions and/or interferences will occur during the season necessitating the need to calculate estimated flow rates for periods of varying length. These events should be described in the ADF Discharge Minimization Progress Tracking Report.

Water Quality Sampling

Deicing Runoff Event Monitoring

Deicing runoff event monitoring will be conducted during the period October 1, 2016 through May 31, 2017. In accordance with the requirements of the permit, events will be monitored twice per month at Outfalls 011, 004, 007, and the NTSU as weather conditions allow.

The Deicing Management Team should identify a potential deicing event by monitoring the weather forecast for predicted snowfall of at least 1 inch, or freezing precipitation that is anticipated to result in significant deicing activity at the airport. Declaration of a deicing event to initiate monitoring activities is

a collaborative effort between the GFIA Facilities Department and Prein&Newhof, with input from the GFIA Maintenance Department. This process helps to ensure that monitoring activities are initiated when significant deicing operations are imminent. Monitoring will begin immediately following the declaration of a deicing event, and continue for a duration of five (5) days with the goal of capturing peak deicing runoff concentrations or loading rates.

A 24-hour composite sample should be collected for each day of the event using an autosampler. Flow-pacing will be used whenever possible. Time paced sampling may be utilized when flow pacing is not possible. The samples will be retrieved once a day and delivered to Prein&Newhof's laboratory for analysis. Stormwater flow rates will be measured and automatically recorded every five minutes throughout the monitoring period. This data will also be downloaded daily whenever possible.

Outfall 011 Monthly Dry Weather Monitoring

In accordance with the permit, monthly dry weather monitoring will be conducted at Outfall 011 and NTSU. Dry weather monitoring events will not be conducted within 72 hours of a deicing discharge event. Monitoring procedures are similar to those used during deicing events. A 24-hour composite sample will be collected using an autosampler. Flow-pacing will be used whenever possible. Time paced sampling may be utilized when flow pacing is not possible. The sample will be retrieved and delivered to Prein&Newhof's laboratory for analysis. Stormwater flow rates will be measured and automatically recorded every five minutes throughout the monitoring period. This data will be downloaded daily whenever possible.

Sampling Methods and Water Quality Parameters

The outfall monitoring program design is based on continuous monitoring of flow coupled with composite water quality samples. Samples are analyzed for parameters required by the NPDES Permit.

Stormwater discharge rates will be measured at each location using an ISCO 750 Area Velocity Flow Module device. The instrument consists of a module and Doppler sensor that provides direct measurement of average water column depth and velocity. The instrument is connected to, and operated in concert with the autosampler. The sensor is normally installed at the invert of the sewer and connected to the module. After the sensor is installed in the sewer, the instrument is manually calibrated following the manufacturer's guidance. The instrument will be programmed to collect flow measurements every five minutes. The measurements are stored electronically in the flow module and downloaded at daily intervals whenever possible. The data collected provides a near continuous record of discharge rates for the deicing event.

Water quality samples are collected at each location using an ISCO 6700 Series autosampler. The autosamplers are placed with a suction line installed into the storm sewer structure or outlet. The tubing is secured along the sewer invert to aid in the collection of samples during low flow conditions. The autosampler is programmed to purge the sampling tubing by drawing a volume of water equal to the tubing and then discharging it. After the tubing has been purged, a 200 ml. sample aliquot is collected at equal flow intervals (to be uniquely determined for each monitoring location) and stored in a composite container inside the autosampler. Samples are collected daily from the sampler and labeled prior to delivery to the laboratory. The autosampler is refilled with an empty composite container and restarted. Efforts are made to protect the sampling equipment from extreme environmental conditions (i.e. freezing) though the use of heaters and heat traces. Power is supplied by solar panel arrays. The power supply for all monitoring locations was changed from generators to solar panel arrays because of environmental considerations (i.e. lower fuel requirements and emissions) and relative higher reliability. Extreme weather conditions that result in data or sample loss will be documented as part of the field record.

In accordance with the permit, water quality samples will be analyzed for carbonaceous 5-day BOD ($CBOD_5$) and ammonia nitrogen (NH_3-N) as summarized in Table 5-1.

Table 5-1. Summary of GFIA Water Quality Sampling and Analytical Methods.

Parameter	Location(s) / Frequency	Method	Practical Quantitation Limit
$CBOD_5$	011,NTSU,004,007 / Daily During Monitoring Events	SM 5210B*	2 mg/L
NH_3-N	011, NTSU,004,007 / Daily During Monitoring Events	SM 4500-NH3 D*	0.03 mg/L

*Standard Methods for the Examination of Water & Wastewater, 2006, APHA-AWWA-WEF.

In-situ measurements of water temperature, dissolved oxygen, and pH will be collected at each location during daily event sample collection/data download/maintenance visits.

In accordance with the permit, a daily visual outfall observation should also be recorded during monitoring events using the inspection form in Appendix C.

Stormwater Detention and Treatment System Report

In accordance with the permit, monitoring will be conducted to generate data to support a summary of the effectiveness of the NTS. The characterization will include:

- A summary of overall effectiveness of the system for CBOD5 and ammonia nitrogen loading removal and concentration reductions;
- A summary of influent data with a comparison to effluent data during the same deicing event;
- A summary of seasonal and event based effectiveness; and
- Additional sampling data for parameters as described below.

Additional parameters will be monitored at Outfall 011 during two deicing events as required by the permit. Table 5-2 contains a summary of the additional parameters that will be analyzed from the Outfall 011 deicing event samples.

Table 5-2. Summary of Outfall 011 Additional Parameters for Stormwater Detention and Treatment System Report (2 Events).

Parameter/Group	Parameter(s)	Method	Practical Quantitation Limit
Total Recoverable Metals	Sb, As, Cd, Cr, Cu, Pb, Se, Ag	SM 3113 B*	0.2-5 ug/L
Total Recoverable Metals	Ba, Be, B, Ni, Zn, V, Al, Co, Fe, Mn, Mo, Ca, K, Na	EPA 200.7	1-40 ug/L
Total Recoverable Metals	Tl	EPA 200.9	1 ug/L
Available cyanide	Available cyanide	OIA 1677	2 ug/L
Total Phenols	Total Phenols	EPA 420.1	5 ug/L
Volatile Organic Compounds	VOCs	EPA 624	1-5 ug/L
Semi-Volatile Organics	SVOCs	EPA 625	5-50 ug/L
$CaCO_3$ Hardness	$CaCO_3$ Hardness	SM 2340 B*	4 mg/L
Total Suspended Solids	TSS	SM 2540D*	4 mg/L
Total Phosphorus	TP	SM 4500P-E*	5 ug/L
Oil & Grease	Oil & Grease	EPA 1664	5 mg/L
Anions by IC	NO_2+NO_3-N, SO_4, Cl-	SM 4110B*	0.1-0.5 mg/L
Propylene glycol	PG	SW 8015	7.5 mg/L

Parameter/Group	Parameter(s)	Method	Practical Quantitation Limit
Total Dissolved Solids	TDS	SM 2540C*	4 mg/L
Total Alkalinity (as $CaCO_3$)	Total Alkalinity (as $CaCO_3$)	EPA 310.2	4 mg/L
Chemical Oxygen Demand	COD	SM 5220D*	5 mg/L
Acetate	Acetate	1H-004	2 mg/L
Conductivity	Specific Conductance	EPA 120.1	1 umhos/cm
Total organic nitrogen	Total organic nitrogen	Calculation	0.1 mg/L

*Standard Methods for the Examination of Water & Wastewater, 2006, APHA-AWWA-WEF.

The data will be used to generate the Stormwater Detention and Treatment System Report that will be submitted to the MDEQ by July 1, 2017 as required by the permit.

5.5.3 QA/QC

This section outlines GFIA's quality assurance/quality control measures.

Sample Handling and Custody

Field Sampling Custody

The objective of field sample custody is to assure that samples are traceable and have not been compromised between sample collection and receipt by the analytical laboratory. A person has custody of a sample when the samples are:

- In their physical possession;
- In their view after being in their possession;
- In their personal possession and secured to prevent tampering; and
- In a restricted area accessible only to authorized personnel and the person is one of the authorized personnel.

Field custody documentation will consist of both field log books and chain of custody forms.

Field Log Books

Field log books serve as a daily record of events, observations, and measurements during field activities. All information pertinent to monitoring activities is recorded in the log books, including:

- Name and title of author
- Name(s) of field crew personnel
- Name of site and project code
- Description of sample location
- Number and volume of samples taken
- Date and time of collection
- Sample identification numbers
- Sampling method
- Preservatives used
- Field measurements (temp., pH)
- Field Observations (weather conditions, flow appearance, etc.)

Chain-of-Custody Forms

Completed chain-of-custody forms are required for all samples to be analyzed. Chain-of-custody forms will be prepared by the field sampling crew during the daily sample collection events. The chain-of-custody form contains the following information:

- Unique sample identification number
- Sample date and time
- Sample description
- Sample type
- Sample preservation
- Analyses required

The original chain-of-custody form should accompany the samples to the laboratory. The chain-of-custody forms remain with the samples at all times and are signed by a representative of the laboratory upon receipt of the samples.

Quality Control Requirements

Field Measurements

The accuracy of field measurements is maintained through the calibration of the field instruments according to manufacturer's specifications.

Field Duplicates

Field duplicates (splits) should be collected and analyzed to check the precision or reproducibility of sampling and analytical procedures. Field duplicates are defined as two separate samples collected at a single location and time, labeled with separate identification codes so the laboratory cannot identify the samples as duplicates. Duplicate samples are collected at the rate of one per analytical batch (i.e. one duplicate for each batch of samples collected and submitted to the laboratory). The duplicate samples are handled and analyzed by the laboratory in exactly the same manner as all other samples.

Field Blanks

Field blanks should be analyzed to check for chemical constituent infiltration and sample bottle contamination originating from sample transport and storage. A field blank consists of analyte-free water poured into a sample bottle at the sample site and preserved according to the parameters to be analyzed. Field blanks should be collected at the rate of one per analytical batch.

5.6 Receiving Water Response

Receiving waters should be monitored by way of monthly inspections. Monthly visual observations of the occurrence of attached bacterial growth will be recorded at the inspection locations identified in Figure 5-2. As noted in Section 5.5.3, visual observations are also be recorded during monitoring events. Evidence of other visually detectible impairments should also be noted. The monthly inspection form is presented in Appendix C.

5.7 Biofilm Monitoring and Investigation

GFIA will collect monthly visual assessments for biofilm in the unnamed tributary at Thornapple River Drive and in the vicinity of Outfall 011 in the Thornapple River as required by the permit.

A summary of the monthly biofilm observations will be provided in the ADF Discharge Minimization Progress Tracking Report.

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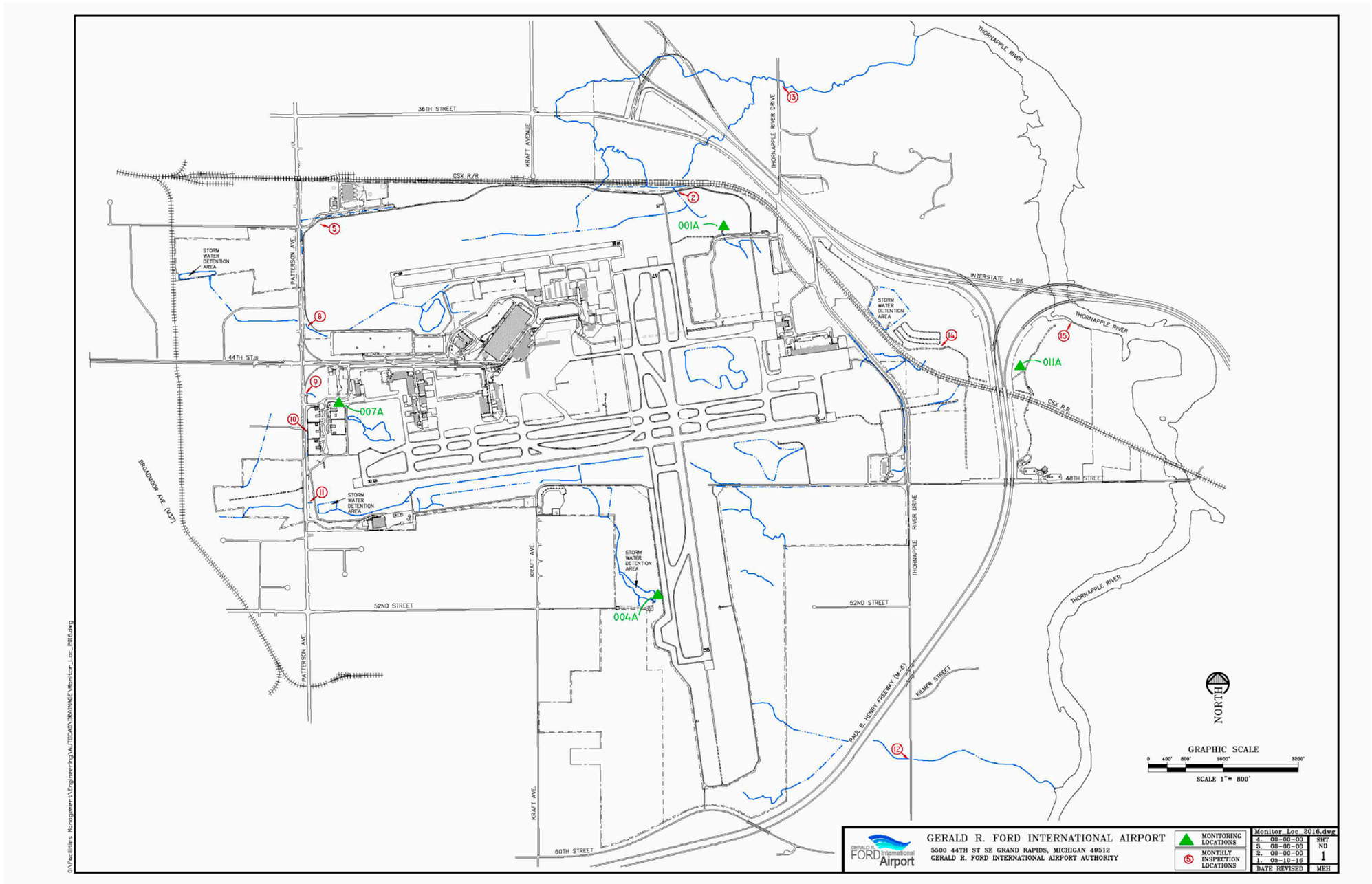

Figure 5-2. GFIA Stormwater Monitoring Locations.

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5.8 Data Types and Responsibilities

Table 5-3 summarizes the types of data that should be generated during the 2016-2017 deicing season, and identifies the principal parties responsible for data collection.

Table 5-3. Summary of data and information, and the entity responsible for their collection.

Type of Data/Information	Responsible Entity
Meteorological conditions (air temperature, precipitation)	LimnoTech
ADF usage by type and location	Airlines, freight carriers, service providers, FBOs, and Corporate tenants
Pavement deicing chemicals usage by type and location	GFIA Maintenance
MCU operating records	GFIA Maintenance
Flight operations information	GFIA Operations
Volumes and concentrations of collected aircraft deicing runoff	GFIA Maintenance and EQ
Volumes and concentrations of aircraft deicing runoff hauled off-site.	EQ
Stormwater discharge flows and water quality	Prein&Newhof

These data should be collected by the individual program team members responsible for each information collection activity, and then consolidated into a Deicing Management Program database by LimnoTech for subsequent analysis and evaluation.

5.9 Project Database

A project database will be established and maintained, using an electronic database package, such as Microsoft Access or Excel.

5.10 Reporting

As required by the permit, stormwater discharge monitoring data (flow, water quality, in-situ measurements, and observation) will be submitted each month using the MDEQ electronic reporting system (MIWaters).

At the conclusion of the 2016-2017 deicing season, GFIA will prepare and submit to MDNRE an ADF Discharge Minimization Progress Tracking Report as required by the permit. The report summarizes GFIA's ADF BMPs, including information, measures, and data to demonstrate the extent to which the BMPs are believed to be reducing ADF discharges. The report will also include the following information or estimates:

- Total gallons of Type I and IV ADF used,
- Total gallons of ADF recycled,
- Total gallons of ADF discharged or otherwise transported to the WWTP, and
- Percent of total gallons of ADF that was collected and prevented from being discharged to the environment.

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6 Long-Term Deicing Runoff Management Program Study and Continuing Program Enhancement

6.1 Long-Term Deicing Runoff Management Program

As noted above, GFIA completed a Long-Term Deicing Runoff Management Program Study to identify system modifications necessary to eliminate GFIA's contribution to nuisance biofilms. The study was conducted in parallel with this program and employed standard industry methodology to define required system performance characteristics, evaluate potential alternative management practices and strategies, and develop a conceptual design and implementation plan. The Deicing Runoff Management Program Study Report was completed in September 2011 and submitted to MDEQ for approval. System design activities were initiated in 2012 and the final design was completed in mid-2013. Construction activities commenced in October 2013 and the system was completed prior to the 2016-2017 deicing season.

6.2 Investigations Into Alternative Aircraft Deicing BMPs

As the long-term program is being implemented, GFIA continues to review the evolving science and technology used for controlling the environmental impacts of airport deicing activities. Information on the performance of implemented controls at other facilities and the development of new techniques is helpful to ensuring that GFIA's deicing control strategies represent the current state-of-the-science. To that end, GFIA's Deicing Runoff Management and Monitoring Program includes specific activities to track new technological developments. These activities may include attending regional and national airport environmental and deicing conferences, monitoring articles and publications in trade journals, and engaging consultants who are experts in this technical area. New technologies that that appear to be especially promising are evaluated for potential applicability to the airport.

APPENDIX A
DEICING MANAGEMENT PROGRAM RECORDING FORMS

GERALD R. FORD INTERNATIONAL AIRPORT
AIRCRAFT DEICING/ANTI-ICING MATERIAL USAGE LOG[1]
(INDIVIDUAL AIRCRAFT DEICING EVENTS)

Company:_____

Month and Year:_____

Date	Time	Carrier/ Flight Number	Deicing Location	SAE Type (I, IV)	Mixture Ratio (glycol/water)	Gallons Applied	Weather Conditions/ Comments[2]

[1]In accordance with recycling requirements, all ADF and AAF products used at GFIA are assumed to be **propylene glycol**-based. If this is not true for the product you are using, please contact Roy Hawkins immediately.

[2]Appropriate abbreviations for weather conditions/comments: **+** for heavy, **-** for light, "**no sign**" for moderate; **RA** for rain, **SN** for snow, **FZRA** for freezing rain, **PL** for ice pellets/sleet. For example, light snow can be reported as –SN, heavy freezing rain can be reported as +FZRA. Appropriate abbreviations for other comments may include **LEI** for leading edge icing, **DEF** for defrost. Please provide explanation if other abbreviations used.

Signature:_____Date:_____

Submit to: Roy Hawkins, R.L.A., Airport Planning Engineer
Phone: (616) 233-6022
Fax: (616) 233-6025
Email: RHawkins@grr.org

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GERALD R. FORD INTERNATIONAL AIRPORT
AIRCRAFT DEICING/ANTI-ICING MATERIAL
ANNUAL RECONCILIATION LOG

Company: _____

Due Date: **May 31, 2017**

Amounts On-Hand at Beginning of the Season (October 1, 2015):

Type I _____ gallons (undiluted glycol)

Type IV _____ gallons (undiluted glycol)

Amounts Received During the Season:

Type I _____ gallons (undiluted glycol)

Type IV _____ gallons (undiluted glycol)

Amounts On-Hand at the End of the Season (May 1, 2016):

Type I _____ gallons (undiluted glycol)

Type IV _____ gallons (undiluted glycol)

Signature:_____Date:_____

Submit to: Roy Hawkins, R.L.A., Airport Planning Engineer
Phone: (616) 233-6022
Fax: (616) 233-6025
Email: RHawkins@grr.org

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GERALD R. FORD INTERNATIONAL AIRPORT

Deicing Management Program

Frac-Tank Tracking Form

Date_____

_

Tank No.	Tank Volume (Start)	Tank Additions	Tank Withdrawals	Tank Volume (End)	Refractometer Reading	Tank Volume (End)

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GERALD R. FORD INTERNATIONAL AIRPORT

Deicing Management Program

Mobile Collection Unit Operating Log

MCU No.:_____

Operator:_____ **Date:** _____

Load No.	Areas Collected from	Start time	Stop Time	Gallons Off-loaded	Refractometer Reading	Comments

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APPENDIX B
MOBILE COLLECTION UNIT OPERATIONS PLAN

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Mobile Collection Units

GFIA owns three V-Quip tow behind Mobile Collection Units (MCU), a T750 and two T1800s. All three pieces of equipment are expected to be used during the 2016-2017 deicing season to collect spent deicing fluid in the aircraft deicing locations. The MCUs are operated with an emphasis on collecting high-strength aircraft deicing runoff.

MCU Team

The MCU Team consists of machine operators and a coordinator. Each MCU is operated by a single driver, and more than one shift may be operated on a given day. The GFIA Deicing Coordinator (Field Maintenance Supervisor and/or Operation Supervisor) typically directs the operations of the MCUs if/as necessary. Figure B-1 illustrates the organizational responsibilities and flow of information among the MCU operators, the Coordinator, and outside entities. GFIA is committed to providing the manpower and equipment to collect contained ADFs in runoff as quickly as possible following aircraft deicing activities.

MCU Operators are responsible for safely conducting ADF runoff collection activities on the airfield aprons, transfer of collected runoff to portable tanks or other temporary storage devices, and collection of operating data on the field data sheets. Under deicing event conditions, an important aspect of the Operator's responsibilities is to serve as the front-line eyes and ears for the Coordinator, to ensure that the Coordinator is directing operations with the best and most accurate information regarding ramp conditions and aircraft activities.

Catch Basin Insert Operations

Catch basin inserts are operated (i.e., opened and closed) by the GFIA Maintenance and/or Operations Departments. The operating philosophy is to keep the inserts in the closed position whenever possible during the deicing season, opening them only when necessary to prevent flooding of the ramp, when runoff is very dilute or un-impacted by deicing operations, or when vacuuming is not a practical option.

The date and time of each opening or closing action is normally transmitted by GFIA Maintenance and/or Operations to GFIA Dispatch for entry into a catch basin operations log.

MCU Operational Modes

The MCUs are operated under two distinct modes: non-deicing event and deicing event. The details of these two modes are described in the following subsections. It is the responsibility of the Deicing Coordinator to determine if MCU operations are to be conducted, and to notify the operators as to which mode of operation is to be implemented.

Non-event Deicing Mode. Non-deicing event conditions are characterized by relatively low-intensity aircraft deicing, typically for defrosting of aircraft in the morning "push" or aircraft that are subject to wing frosting from cold-soaked fuel tanks (i.e., MD-80s).

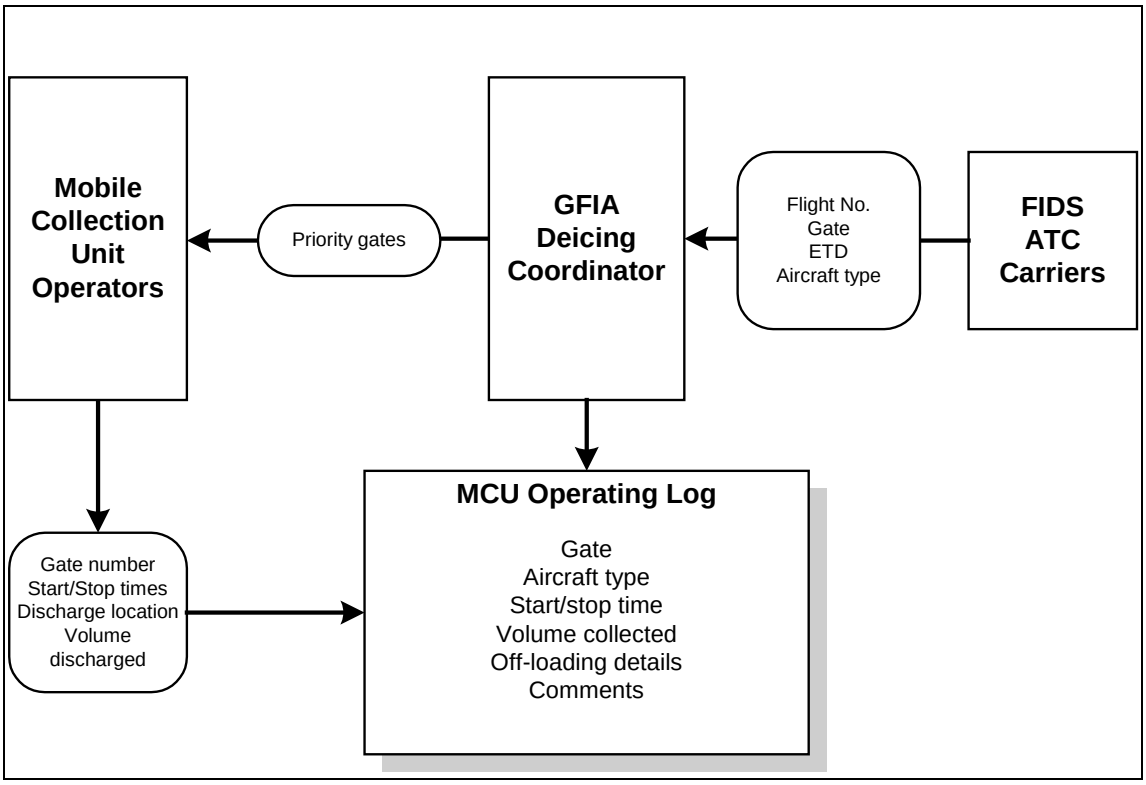

Figure B-1. Organization and information flow within the MCU operations team.

Under non-deicing event conditions, which are the norm at GFIA, at least one MCU is operated in a roaming mode, with opportunistic collection of ADF runoff at gates and ramp slots that have been vacated by departing aircraft. Runoff collection from defrosting focuses on those gates where the largest volumes of ADF are being used, expected to be the air carrier apron. Main terminal operations are completed at the conclusion of a full 8-hour work shift for the MCU(s). Freight and FBO ramp glycol collection under the non-event mode consist of a full pass of all freight and FBO corporate tenant operation approved deicing areas that were used for aircraft deicing during the day.

Deicing Event Mode. During significant deicing events, the MCUs are operated on an extended schedule, determined by aircraft deicing activities. The Deicing Coordinator is responsible for calling an event for the purposes of the MCU operations.

MCU operations under an event mode are directed by the Deicing Coordinator in close coordination with the Airport Operations Supervisor. Under these conditions, the early-morning emphasis is on collecting runoff associated with deicing of the first passenger flights of the day at the main terminal complex.

MCU operations at the air carrier apron are generally distributed among the gates to maximize the collection of high-concentration deicing runoff. There are two general areas of high priority for MCU operations:

- Main Terminal Gates
- Off-gate apron parking area

MCU operations at the freight ramps focuses on maximizing the volume of runoff collected during the peak periods of deicing in the morning and evening.

The actual collection strategy at any point during a deicing event is determined by the Deicing Coordinator.

Off-loading of the MCUs

Runoff collected by the MCUs is transferred directly to portable tanks located to the west of Concourse A as shown in Figure B-2.

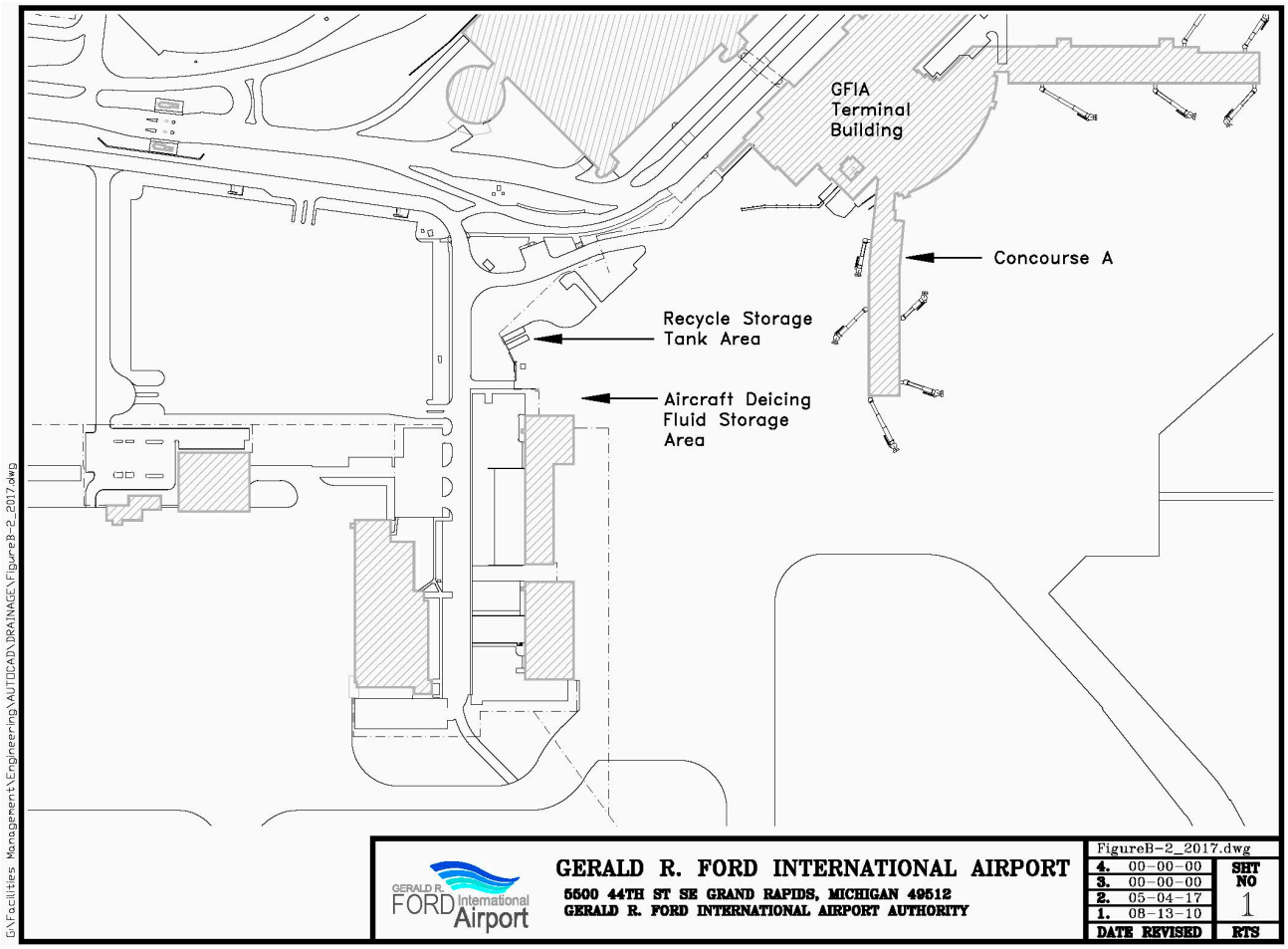

Figure B-2. Locations of recycle storage tanks for off-loading the MCUs.

Operational Constraints and Considerations

A number of factors act as practical constraints on the operation of the MCUs, principally related to airfield safety and traffic control. The principal factors are summarized in the following paragraphs.

- MCU operations must be integrated into day-to-day ground movement operations. Regardless of the type of event occurring on the airfield (normal operations or significant deicing event), the on-duty *Airport Operations Supervisor* must be kept apprised of both vehicular airfield access and areas of significant vehicular activity.
- The rate at which the MCUs are able to collect deicing runoff is influenced by a number of factors. Based on the capacity and location of temporary storage tanks into which the units discharge collected material, time spent in transit and time spent discharging material could easily exceed time spent collecting runoff. An extreme ice/snow event could limit MCU material discharging operations due to tanker trucks being delayed in transferring material from the temporary storage tanks. An extreme ice/snow event could also create poor surface conditions for the MCU, resulting in slower operating speeds and longer times for each collect/transport/discharge cycle.
- The on-duty *Airport Operations Supervisor* determines when airfield conditions warrant reducing, modifying, or curtailing MCU operations. Situations that may affect MCU operations include:
    - Airfield emergencies may require the cessation of MCU operations.
    - Construction activities may impair or require modifications in MCU operations.

- Reduced visibility conditions that impair and slow MCU operations.
- Snow/ice removal operations that require that MCUs stay out of the active working areas.

Where encountered, constraints on MCU operations are documented as part of the data collection process to ensure that the limitations are understood and anticipated in evaluating and planning future MCU operations at GFIA.

MCU Monitoring

Performance data is collected to quantitatively assess the efficiency of the MCUs. These data consist of machine operation logs and water quality samples analyzed for glycol concentration. Machine operation log data consists of the following information:

- Gate or slot location
- Start and stop time
- Volume of runoff collected

The following information is recorded for each full load discharged to a storage tank:

- Time
- Weather conditions
- Transfer location
- Total load volume

MCU Operating Log data is entered into an electronic MCU operations database.

APPENDIX C
MONTHLY OUTFALL INSPECTION FORM

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STORM WATER POLLUTION PREVENTION PLAN
MONTHLY OUTFALL INSPECTION FORM

Completed by:

Date: _____ Time: _____ a.m. _____ p.m.

Time since last precipitation: Type of precipitation:

Hours Days ☐ Rain ☐ Snow ☐ Sleet ☐ Hail

Quantity of precipitation: _____ Inches

Flow observed: ☐ Yes ☐ No

CONTINUE IF FLOW IS OBSERVED. Visual Inspection:

COLOR	ODOR	FOREIGN MATERIAL	OIL SHEEN
☐ Clear	☐ Not Present	☐ Not Present	☐ Not Present
☐ Cloudy	☐ Present	☐ Present	☐ Present
☐ NA	☐ NA	☐ NA	☐ NA

Outfall location (i.e., sewer manhole/drainage ditch location):
O

Temperature (use descriptors such as hot or cold if thermometer is not available:

Volume (gallons/minute):

☐ None ☐ Low ☐ Moderate ☐ High

Review of structural controls:

☐ Road Culvert ☐ Drainage Ditch ☐ Detention Basin Other:

Suspected potential sources of storm water contamination and comments:

General comments:

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