

Storm Water Pollution Prevention Plan (SWPPP) Associated with Industrial Activities

for

Ontario International Airport



Facility Address:

1923 Avion Drive
Ontario, California 91761

Waste Discharge Identification (WDID):

8 36I026885

Exceedance Response Action (ERA) Status:

Baseline

Legally Responsible Person (LRP):

Ontario International Airport Authority
1923 Avion Drive
Ontario, CA 91761
Kelly Fredericks
909-395-2400

SWPPP Preparation Date:

October 31, 2016

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Legally Responsible Person

Approval and Certification of the Stormwater Pollution Prevention Plan

Facility Name: Ontario International Airport (ONT)

Waste Discharge Identification
(WDID): 8 36I026885

"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, to the best of my knowledge and belief, the information submitted is, 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."

Kelly Fredericks



Legally Responsible Person

Signature of Legally Responsible Person or Approved
Signatory

11/8/11

Date

Amendment Log

Facility Name:

Ontario International Airport (ONT)

Waste Discharge Identification (WDID):

8 36I026885

Amendment No.	Date	Page and Section No.	Requested By	Brief Description of Amendment; include reason for change, site location, and BMP modifications.	Prepared and Approved By

1. SWPPP REQUIREMENTS

1.1 Introduction

The Ontario International Airport (ONT) comprises approximately 1,463 acres and is located at 1923 Avion Drive, Ontario, California, in San Bernardino County. ONT is owned and operated by the Ontario International Airport Authority (OIAA). Numerous tenants occupy leaseholds at ONT and conduct a variety of airport-related support functions. The facility location is shown in **Figure 1**, a general site map is provided in **Figure 2**, and a tenant address map is provided in **Figure 3**.

This Storm Water Pollution Prevention Plan (SWPPP) is designed to comply with California's General Permit for Storm water Discharges Associated with Industrial Activities (General Permit) Order No. 2014-0057-DWQ (NPDES No. CAS000001) issued by the State Water Resources Control Board (State Water Board) (**Attachment A**). In accordance with the General Permit, Section X.A, this SWPPP contains the following required elements:

- Facility Name and Contact Information;
- Site Map;
- List of Significant Industrial Materials;
- Description of Potential Pollution Sources;
- Assessment of Potential Pollutant Sources;
- Minimum Best Management Practices (BMPs);
- Advanced BMPs, if applicable;
- Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation);
- Monitoring Implementation Plan (MIP); and
- Date that SWPPP was Initially Prepared and the Date of Each SWPPP Amendment, if Applicable.

1.2 Permit Registration Documents

Required Permit Registration Documents (PRDs) were submitted to the State Water Board via the Storm water Multiple Application and Report Tracking System (SMARTS) by the Legally Responsible Person (LRP), or authorized personnel (i.e., Duly Authorized Representative) under the direction of the LRP. The project-specific PRDs include:

- Notice of Intent (NOI);
- Signed Certification Statement (LRP Certification was provided electronically with SMARTS PRD submittal);

- Site Map(s);
- SWPPP; and
- Annual Fee.

A copy of the submitted NOI, Signed Certification Statement and Annual Fee Receipt are kept in **Appendix A** along with the Waste Discharge Identification (WDID) confirmation letter. The site maps are included as **Figures 2 through 8**.

In the event of future significant changes to the facility layout, the Discharger will certify and submit new PRDs via SMARTS.

1.3 SWPPP Availability and Implementation

The SWPPP is available on-site to employees during hours of operation (see **Section 2.2** for the Operations Schedule), and will be made available upon request by a State or Municipal Inspector. The SWPPP will be implemented by November 1, 2016.

1.4 Pollution Prevention Team

ONT staff that have been designated as Pollution Prevention Team members are listed below in **Table 1.1**, along with their responsibilities and duties. **Table 1.1** will be updated as needed when there are changes to ONT staff and staff responsibilities.

Tenant staff who are designated as Tenant Pollution Prevention Team members are included in the table in **Appendix B** by address. The locations of the Tenant leaseholds are shown on **Figure 3**. Tenant provided site maps are attached behind **Figure 3**, organized by tenant address. When there are changes to tenant staff or operations, tenants will provide updated Tenant Pollution Prevention Team member information to OIAA staff who will update the table included in **Appendix B**.

ONT and Tenant Pollution Prevention Team members will be trained to perform the duties assigned to them. Pollution Prevention Team member training records are provided in **Appendix C**.

Table 1.1: ONT Pollution Prevention Team

Name	Title	Phone Number	Responsibilities and Duties
Cecile Felsher	Environmental Consultant	(310) 756-9693	<ul style="list-style-type: none"> • SWPPP Team Member • SWPPP maintained and updated • Review tenant routine inspections • Coordinate training • Spill data collection • Annual reporting • Main task manager of water quality monitoring
Chris Waller	Environmental Consultant (Alternate Team Member)	(847) 494-7249	<ul style="list-style-type: none"> • Alternate Team Member for SWPPP tasks at ONT • Coordinate spill response reporting • Alternate task manager of water quality monitoring
ONT Tenants	See Appendix B for tenant specific Pollution Prevention Team information		<ul style="list-style-type: none"> • Implement BMPs at their respective facilities • Conduct routine inspections at their respective facilities
David Schack Alta Environmental	Vice President	(310) 951-9482 (C) (562) 495-5777 (O)	<ul style="list-style-type: none"> • Collect storm water discharge samples • Conduct routine inspections
David.Renfrew Alta Environmental	Director, Water Resources	(760) 908-5749 (C) (562) 495-5777 (O)	<ul style="list-style-type: none"> • Alternate Team Member • Collect storm water discharge samples • Conduct routine inspections

1.5 Permits and Governing Documents

In addition to the General Permit, the following documents have been taken into account while preparing this SWPPP:

- Regional Water Quality Control Board requirements;
- Basin Plan requirements;
- Total Maximum Daily Load (TMDL) requirements;
- Spill Prevention Control and Countermeasures (SPCC) Plan; and
- Hazardous Material Management Plan (HMMP).

1.6 SWPPP Amendments

This SWPPP will be revised, replaced, and/or hand annotated as necessary to properly convey an amendment when:

- There is a General Permit violation;
- There is a reduction or increase in the total industrial area exposed to storm water;
- BMPs do not meet the objectives of reducing or eliminating pollutants in storm water discharges;
- There is a change in industrial operations which may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4);
- There is a change to the parties responsible for implementing the SWPPP; or
- Otherwise deemed necessary.

Documentation of the amendment will be included in the Amendments Log located at the front of the SWPPP and will include the following information:

- Who requested the amendment;
- The location of proposed change;
- The reason for change; and
- The new/revised BMPs or relevant changes.

SWPPP amendments must be certified and submitted by the LRP via SMARTS within 30 days whenever the SWPPP is significantly revised. With the exception of significant revisions, SWPPP changes will not be certified and uploaded to SMARTS more than once every three months in the reporting year.

1.7 Exceedance Response Actions (ERAs)

In accordance with the General Permit, storm water discharges from ONT are subject to comparison with numeric action levels (NALs). A NAL exceedance for an individual pollutant can occur in one of two ways:

1. An annual NAL exceedance occurs when the average of all analytical results for a parameter from samples taken within a reporting year (July 1 to June 30) exceeds the Annual NAL; or
2. An instantaneous maximum NAL exceedance occurs when two (2) or more analytical results from samples taken for any single parameter within a reporting year (July 1 to June 30) exceeds the instantaneous maximum NAL value (for Total Suspended Solids and Oil & Grease) or are outside of the instantaneous maximum NAL range for pH.

The annual and instantaneous maximum NALs that are applicable to ONT and listed in the 2014 IGP are provided in **Table 1.2**, below.

Table 1.2: Applicable NAL Values

Parameter	Reporting Units	Annual NAL	Instantaneous Maximum NAL
pH	pH units	Not Applicable	Less than 6.0 Greater than 9.0
Total Suspended Solids	mg/L	100	400
Oil & Grease	mg/L	15	25
Total Copper	mg/L	0.0332	
Total Zinc	mg/L	0.26	

If a General Permit NAL exceedance occurs in a given reporting year, a Level 1 ERA Evaluation and a Level 1 ERA Report will be required in the following year, or, if in a subsequent year, a Level 2 ERA Action Plan and a Level 2 ERA Report will be required in accordance with the General Permit. The results of either of the ERA reports may require that the SWPPP be amended.

1.8 Termination and Changes to General Permit Coverage

When any of the following conditions occur, termination of coverage under the General Permit will be requested by certifying and submitting a Notice of Termination (NOT) via SMARTS:

- Operation of the facility has been transferred to another entity;
- The facility has ceased operations, completed closure activities, and removed all industrial related pollutant generating sources; or
- The facility’s operations have changed and are no longer subject to the General Permit.

Compliance with the SWPPP and the provisions of the General Permit will continue until a valid NOT is received and accepted by the Board. If ownership changes, the new owner of the facility will be notified of the General Permit and regulatory requirements for permit coverage.

2. FACILITY INFORMATION

2.1 Facility Description

2.1.1 Facility Location

The Ontario International Airport comprises approximately 1,463 acres and is located at 1923 Avion Drive in Ontario, California. The facility is located just south of interstate 10 and approximately two miles west of interstate 15 in San Bernardino County, and is approximately 8 miles north of the Santa Ana River and 37 miles northeast of the Pacific Ocean. The facility is identified in **Figure 1**.

2.1.2 Facility Operations

Operations at the facility consist of activities required to transport passengers and freight by aircraft. The specific industrial activities conducted at ONT include:

- Aircraft Anti-icing
- Aircraft Fueling
- Aircraft Maintenance
- Aircraft Sanitary Services
- Aircraft Washing
- Cargo Handling
- Catering/Food Service
- Chemical Storage
- Equipment Degreasing/Washing
- Equipment Maintenance
- Equipment Storage
- Floor Washdown
- Fuel Storage
- Manufacturing (e.g., plating, metal grinding)
- Outdoor Apron Washdown
- Pesticide/Herbicide Usage
- Steam Cleaning
- Vehicle Fueling
- Vehicle Maintenance
- Vehicle Painting/Stripping
- Vehicle Washing

Numerous tenants, who conduct a variety of airport-related support functions, occupy leaseholds at ONT. Federal regulations governing storm water discharges require that transportation facilities consisting of these areas or leaseholds which have discharges from vehicle maintenance shops, equipment cleaning operations or airport anti-icing, which are defined as "associated with industrial activity", must be covered under an

NPDES permit. Therefore, in accordance with federal regulations, tenants that conduct industrial activities at ONT must be included as co-permittees under OIAA's program, or obtain separate permit coverage for their discharges.

In order to update current tenant information specifically related to storm water issues, ONT Pollution Prevention Team staff performs regular site inspections (at least once a year) at each of the tenant facilities where industrial activities are performed. Some tenants have multiple facilities with industrial activities at ONT. This information is compiled for the annual report and to update the SWPPP.

Tenants that conduct industrial activities are grouped by their main industrial activity in **Table 2.1**.

Table 2.1: ONT Tenants

AIRCRAFT FUELING / OPERATION / MAINTENANCE	
Alaska Air	Guardian Jet Center
American Airlines	Jet Systems International
Ameriflight	Jett Pro Line Maintenance
ATS GSE	Ontario International Airport Authority
Cinco Air Charter	Skywest
Delta Airlines	Southwest
FedEx	US Airways
CHEMICAL / FUEL STORAGE	
Aircraft Service International Group	
CARGO HANDLING	
Southwest	Majestic Terminal Service
Federal Express	

2.1.3 Existing Conditions

As shown in **Figure 2**, ONT currently consists of two main domestic terminals and one international terminal. Approximately 60% of ONT, or 880 acres, is impervious. The unpaved portions of the airport, which are located on the east side of the facility as well as between runways, are comprised of soil and vegetation. The facility is divided into three drainage areas which discharge into one receiving water as summarized in **Table 2.2**.

Table 2.2: ONT Drainage Areas and Receiving Water Information

ONT Drainage Areas	Receiving Water	303(d) Listed Impairments
– West Cucamonga Channel	Cucamonga Creek	– Cadmium
– Cucamonga Channel		– Copper
– Deer Creek		– Lead
		– Zinc
		– Coliform Bacteria

There are identified areas within the facility that have known historic sources of contamination that are consistent with an operating air transportation facility. These areas are not surficial (subsurface soils and groundwater) and are not identified as a threat to storm water run-off.

2.1.4 Description of Drainage Areas and Existing Drainage

The facility is relatively flat from east to west, and slopes to the south. The elevation of the entire site ranges from approximately 955 to 890 feet above mean sea level (msl). Surface drainage at the site currently flows generally to the south towards catch basins which discharge into the three drainage area channels.

The facility is divided into three drainage areas, as shown in **Figure 4. Figures 2 through 6** show the area layout, including the general site topography, storm drainage system, drain inlets, drainage areas, and discharge locations. Specifically, **Figures 4 and 5** are maps of the catch basins and storm drains and **Figure 6** is a map of the storm water conveyance system discharge points. A more detailed description of each drainage area is provided below.

West Cucamonga Channel Drainage Area

The West Cucamonga Channel receives runoff from 134 acres of the western portion of ONT. This area includes a paved parking lot, unpaved dirt area, runways and taxiways. The surface storm water flow pattern from the parking lot drains from north to south onto Mission Boulevard, and continues east to the channel. The airfield surface area drainage flows south and west into catch basins along runways 8L and 8R; this runoff discharges into West Cucamonga Channel at the intersection of Mission Boulevard.

Cucamonga Channel Drainage Area

The Cucamonga Channel extends along a north/south transect across ONT, between Airport Drive and Mission Boulevard. Landside drainage into the channel includes the

parking lot areas north of terminals 2 and 4 as well as several arteries that drain northerly into a header from the airfield side of the terminal areas. Air-side drainage includes a set of 4 separators that provide surge retention capacity prior to discharge into another header that leads into the Channel. At the intersection of the Cucamonga Channel and runway 8L-26R the open channel flows beneath the runways through a dual box culvert and continues via a concrete culvert off airport property. This channel drains the majority of industrial areas of ONT. The drainage area discharging into Cucamonga Channel covers 928 acres of industrial and commercial tenant facilities, runways and taxiways at ONT. Storm water runoff flows into dozens of catch basins near the former Lockheed Aircraft Services leasehold, Terminal 1, Runway 8L-26R, and the OIAA maintenance yard. Runoff from two open ditches, located directly east of the OIAA maintenance yard near the former General Electric (GE) Engine Test Cell facility also discharges into Cucamonga Channel. One ditch collects runoff from the swale behind the maintenance buildings and runs parallel to Mission Boulevard along the south side of the former GE Test Cell facility. The second ditch receives drainage from a series of catch basins on the southern portion of the airport.

Deer Creek Drainage Area

This area receives runoff from the generally underdeveloped eastern end of the airfield. The only area which may discharge storm water associated with industrial activity to this channel is the new United Parcel Service facility. This drainage flows south along Turner Avenue in a subsurface storm drain.

2.1.5 Storm water Run-On from Offsite Areas

The General Permit requires that BMPs be implemented to direct offsite and nonindustrial run-on away from industrial areas and erodible surfaces. There is no anticipated offsite run-on to this site because off-Site run-on is diverted by the ONT storm water conveyance system which diverts storm water around the site. Comingling of off-site irrigation drainage with storm water discharge from ONT does occur in the Cucamonga Channel but does not impact industrial activities at the site. The off-site drainage areas and associated storm water conveyance facilities or BMPs are shown on **Figure 6**.

2.2 Operations Schedule

ONT operates 24 hours a day 365 days a year.

If industrial activities are temporarily suspended for 10 or more consecutive calendar days during a reporting year, BMPs that are necessary to achieve compliance with this General Permit during the temporary suspension of the industrial activity will be identified and incorporated into the SWPPP.

2.3 Required Site Map(s) Information

Figures 1 through 8 include the information required by the General Permit (Section X.E). The maps include information regarding the facility boundary and storm water drainage areas, direction of storm water flow, nearby water bodies, locations of storm water collection and conveyance systems including outfalls, locations of industrial activities and materials, and locations of structural control measures.

3. POLLUTANT SOURCE ASSESSMENT

This section presents a list of industrial activities, materials, and potential pollutant sources at the facility. It also identifies specific pollutants associated with these sources, activities and/or areas that have the potential for spills and leaks, and the pollutant sources that are susceptible to exposure with storm water and non-storm water discharges (NSWDs).

A pollutant source assessment has been conducted for each industrial area and/or activity at the facility as required by Section X.G.2 of the General Permit.

3.1 Description of Potential Pollutant Sources

This section includes a general description of industrial activities and associated materials that are used or stored onsite as reported by ONT tenants in an annual questionnaire. ONT tenants reported that the potential pollutants listed in **Table 3.1** are located on site.

Table 3.1 Potential Pollutants Reported by Tenants*

Potential Pollutants	Gallons
Anti-freeze	165
Anti-icing Fluid (Glycol-based)	1,200
Brake Fluid	12
Degreaser	110
Diesel Fuel	2,200
Engine Oil	1,200
Gasoline	2,200
Hydraulic Fluid	280
Jet Fuel	140,000
Transmission Fluid	150
Waste Fuel	250
Waste Oil	1,220
*Data in this table is a compilation of information reported by ONT tenants.	

Primary industrial activities conducted by each tenant are listed in **Table 2.1**. Tenants may conduct associated ancillary activities in addition to their primary activities. BMPs implemented by each tenant to reduce and prevent potential pollutants from contacting storm water are discussed in **Section 4**. **Figure 7** is a map of the area of pollutant contact. Maps provided by ONT tenants of locations of potential pollutant sources and associated BMPs are attached behind **Figure 3**, organized by tenant address.

Industrial activities conducted onsite at ONT that could be potential sources of pollution include:

- Aircraft, Vehicle and Equipment Maintenance
- Aircraft and Vehicle Fueling
- Wastes and Recyclables Storage
- Aircraft and Vehicle Washing
- Anti-icing
- Material Loading/Unloading
- Chemical and Fuel Storage
- Building and Grounds Maintenance

A brief description of these industrial activities and associated materials that may be stored onsite is presented below.

Aircraft, Vehicle and Equipment Maintenance

The majority of aircraft, vehicle, and equipment maintenance activities are conducted indoors. Based on the nature of maintenance activities at airports, materials such as lubricating oils, hydraulic oils, degreasers, and cleaning products are potentially present in these areas. Small leaks or spills of these materials are not uncommon during maintenance activities.

Some maintenance areas that are located indoors may have floor drains. At some tenant facilities, the runoff that discharges through the floor drains runs directly to oil/water separators before entering the sanitary sewer system. Few tenants have floor drains near their indoor maintenance areas. Additionally, the majority of tenants certified that there were no illicit connections of these drains to the storm drain system at their leasehold. Therefore, discharges from floor drains at ONT present limited potential for pollutant discharge to the storm drain system.

Aircraft and Vehicle Fueling

The transfer of jet fuel, diesel, and gasoline fuel into underground storage tanks (USTs) is conducted via closed hose transfer connections. Aircraft fueling activities are conducted only on concrete ramps or paved areas. Vehicle fueling is conducted at various areas throughout ONT. Based on the quantity of fueling activities that take place at ONT, fuel spills occur relatively infrequently with most spills not affecting the storm drain system.

Wastes and Recyclables Storage

Wastes are stored in trash compactors. Liquid discharges from the compactors are collected into sumps. The sumps are plumbed to the sanitary sewer via permitted connections.

Recyclables include wood, cardboard, paper, plastics, and metal products. They are stored under covered canopies or bins and collected by a recycler on a regular basis. Universal wastes, such as mercury-vapor (fluorescent) lamps, batteries, and electronic devices, are routinely collected in designated bermed and covered areas, packaged, and shipped for recycling.

Aircraft and Vehicle Washing

Aircraft washing is reportedly not permitted at ONT. As a result, the aircraft are washed using a "dry wash" method which include hand washing the plane and wiping it dry, thereby minimizing the discharge of wash water to the ground.

Anti-icing

Anti-icing is performed on aircraft to minimize the ice build-up on the wings and plane body during cold weather conditions. A limited amount of anti-icing materials is used at ONT due to the moderate climate in Southern California. This activity is performed at the gate prior to plane departure. Sweepers are used following anti-icing to clean up material that potentially leaked onto the ground.

The primary anti-icing material used at ONT is glycol-based. This constituent has been banned from the sanitary sewer system. The annual volume of anti-icing material used at ONT (<1,000 gallons) falls well below the 100,000 gallons a year threshold triggering additional sampling parameters.

Material Loading/Unloading

Various chemical products (i.e. oils and waste oils) are regularly transferred to and from tenant facilities at ONT. These loading/unloading areas may consist of loading docks at buildings or outdoor storage and transfer facilities such as at the fuel farms. During chemical and petroleum product loading, spills, leaks, and/or release of residues on the exterior of the drums or containers could occur resulting in pollutants entering the storm drains. Waste oil that is periodically loaded by waste haulers (from maintenance facilities that generate waste oil) is another source that could potentially pollute the storm water if a spill occurred during loading.

Chemical and Fuel Storage

Large quantities of chemicals and petroleum products (i.e. gasoline, diesel and jet fuels) are stored by tenants at ONT. Many tenants have separate covered and outdoor storage facilities to house these items. Chemicals, oils, and waste oils may be stored indoors or outdoors in 55-gallon drums. Other materials such as cleansers, paints and paint related products are stored indoors and outdoors, on the ground, or in cabinets. During the winter rain season, any residues on the containers or residuals from chemical spills or leaks in

outdoor storage areas are potential sources that could contribute to pollutants in storm water discharges.

Building and Grounds Maintenance

Pesticide and herbicide products are applied at select areas at ONT to eliminate insects and to inhibit the growth of weeds. These products are stored indoors and outdoors in various types of containers. Products that are stored outdoors can have residues on the container, which could be washed into the storm drain. During rainfall events, pesticide and herbicide residues that accumulate where they are applied can also wash into the storm drain. Limited pollutant discharge is expected at ONT from the use and storage of pesticides and herbicides.

3.2 Significant Spills and Leaks

Industrial materials where spills and leaks have potential to occur are included in **Table 3.1**. Spills and leaks will be prevented by implementing the BMPs described in **Section 4**.

Hazardous materials spills that have occurred in the last five years are presented in **Appendix D**. The table includes the date, tenant, location, material, quantity, estimated area covered and a description of the cleanup method.

3.3 Identification of Non-Storm water Discharges (NSWDs)

NSWDs consist of discharges which do not originate from precipitation events. The General Permit allows certain NSWDs provided they:

- Do not cause erosion;
- Do not carry other pollutants;
- Are not prohibited by the local MS4; and
- Do not require a separate NPDES Permit from the Regional Water Board.

NSWDs that are not specifically listed above, or that are authorized under a separate NPDES permit, are prohibited (referred to as unauthorized NSWD's). There are no unauthorized NSWDs identified at the facility. Steps will be taken to eliminate unauthorized NSWDS should they occur.

Authorized NSWDs include irrigation drainage, air conditioning condensation, and fire hydrant and potable water flushing. In the event that authorized NSWDs do occur, they will be managed with the BMPs described in **Section 4** of this SWPPP.

4. BEST MANAGEMENT PRACTICES

4.1 Minimum BMPs

Sections 4.1.1 through 4.1.7 list the requirements for each minimum BMP. Minimum BMPs will be implemented for additional targeted industrial activities, equipment, and materials as necessary. If any of the required minimum BMPs are applicable but cannot be implemented, an explanation and alternative approach will be provided in the following sections.

As required by the General Permit, a summary of implemented BMPs is included in **Table 4.1. Appendix E** includes the applicable OIAA and CASQA BMP fact sheets, which provide general guidance on how BMPs should be implemented, the targeted industrial activities and the targeted pollutants that will be controlled by correctly using the BMPs.

4.1.1 Good Housekeeping

The following good housekeeping measures are required to be implemented in accordance with the General Permit (Section X.H.1.a):

- *Observe all outdoor areas associated with industrial activity including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials will be cleaned and disposed of properly;*
- *Minimize or prevent material tracking;*
- *Minimize dust generated from industrial materials or activities;*
- *Ensure that all facility areas impacted by rinse/wash waters are cleaned as soon as possible;*
- *Cover all stored industrial materials that can be readily mobilized by contact with storm water;*
- *Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed via by the wind or contact with storm water;*
- *Prevent disposal of any rinse/wash waters or industrial materials into the storm water conveyance system;*
- *Minimize storm water discharges from non-industrial areas (e.g., storm water flows from employee parking area) that contact industrial areas of the facility; and*

- *Minimize authorized NSWDS from non-industrial areas (e.g., potable water, fire hydrant testing, etc.) that contact industrial areas of the facility.*

The facility fulfills the above General Permit requirements by implementing the site specific BMPs summarized in **Table 4.1** and described in the OIAA and CASQA BMP Fact Sheets in **Appendix E**. Each tenant at ONT is responsible for implementing specific BMPs based on the industrial activities occurring at their facilities. The BMPs being implemented by each tenant are presented in **Table 4.2**.

4.1.2 Preventative Maintenance

The following preventative maintenance measures are required to be implemented in accordance with the General Permit (Section X.H.1.b):

- *Identify all equipment and systems used outdoors that may spill or leak pollutants;*
- *Observe the identified equipment and systems to detect leaks, or identify conditions that may result in the development of leaks;*
- *Establish an appropriate schedule for maintenance of identified equipment and systems; and*
- *Establish procedures for prompt maintenance and repair of equipment, and maintenance of systems when conditions exist that may result in the development of spills or leaks.*

The facility fulfills the above General Permit requirements by implementing the site specific BMPs summarized in **Table 4.1** and described in the OIAA and CASQA BMP Fact Sheets in **Appendix E**. Each tenant at ONT is responsible for implementing specific BMPs based on the industrial activities occurring at their facilities. The BMPs being implemented by each tenant are presented in **Table 4.2**.

4.1.3 Spill and Leak Prevention and Response

The following spill and leak prevention and response measures are required to be implemented in accordance with the General Permit (Section X.H.1.c):

- *Establish procedures and/or controls to minimize spills and leaks;*
- *Develop and implement spill and leak response procedures to prevent industrial materials from discharging through the storm water conveyance system. Spilled or leaked industrial materials will be cleaned promptly and disposed of properly;*
- *Identify and describe all necessary and appropriate spill and leak response equipment, location(s) of spill and leak response equipment, and spill or leak response equipment maintenance procedures; and*
- *Identify and train appropriate spill and leak response personnel.*

The facility fulfills the above General Permit requirements by implementing the site specific BMPs summarized in **Table 4.1** and described in the OIAA and CASQA BMP Fact Sheets in **Appendix E**. Each tenant at ONT is responsible for implementing specific BMPs based on the industrial activities occurring at their facilities. The BMPs being implemented by each tenant are presented in **Table 4.2**.

4.1.4 Material Handling and Waste Management

The following material handling and waste management measures are required to be implemented in accordance with the General Permit (Section X.H.1.d):

- *Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with storm water during a storm event;*
- *Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with storm water during handling;*
- *Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use;*
- *Divert run-on and storm water generated from within the facility away from all stockpiled materials;*
- *Clean all spills of industrial materials or wastes that occur during handling in accordance with the spill response procedures (Section X.H.1.c); and*
- *Observe and clean as appropriate, any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes.*

The facility fulfills the above General Permit requirements by implementing the site specific BMPs summarized in **Table 4.1** and described in the OIAA and CASQA BMP Fact Sheets in **Appendix E**. Each tenant at ONT is responsible for implementing specific BMPs based on the industrial activities occurring at their facilities. The BMPs being implemented by each tenant are presented in **Table 4.2**.

4.1.5 Erosion and Sediment Controls

The following erosion and sediment control measures will be implemented in accordance with the General Permit (Section X.H.1.e):

- *Implement effective wind erosion controls;*
- *Provide effective stabilization for all disturbed soils and other erodible areas prior to a forecasted storm event;*

- *Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site;*
- *Divert run-on and storm water generated from within the facility away from all erodible materials.*

The facility fulfills the above General Permit requirements by implementing the site specific BMPs summarized in **Table 4.1** and described in the OIAA and CASQA BMP Fact Sheets in **Appendix E**. Each tenant at ONT is responsible for implementing specific BMPs based on the industrial activities occurring at their facilities. The BMPs being implemented by each tenant are presented in **Table 4.2**.

4.1.6 Employee Training Program

The following employee training program measures are required to be implemented in accordance with the General Permit (Section X.H.1.f):

- *Ensure that all team members implementing the various compliance activities of this SWPPP are properly trained in topics including but not limited to: BMP implementation, BMP effectiveness evaluations, visual observations, and monitoring activities;*
- *Prepare or acquire appropriate training manuals or training materials;*
- *Identify which personnel need to be trained, their responsibilities, and the type of training they will receive;*
- *Provide a training schedule; and*
- *Maintain documentation of all completed training classes and the personnel that received training in the SWPPP.*

The Pollution Prevention Team will be trained in implementing the various compliance activities specified in this SWPPP. Task specific training for employees engaged in activities that have the potential to cause storm water pollution will be conducted when new employees are hired or new tasks are incorporated into the site activities and refresher training will be provided annually. Documentation of training activities is retained in **Appendix C**.

The facility training will be performed by qualified personnel who are familiar with the facility. The training personnel will be responsible for providing information during training sessions and subsequently completing the training logs in **Appendix C**. The training logs identify the site-specific storm water topics covered, as well as the names of site personnel who attended the training. Each team member will be trained in the specific role they are responsible to undertake.

4.1.7 Quality Assurance and Record Keeping

The following quality assurance and record keeping measures are required to be implemented in accordance with the General Permit (Section X.H.1.g):

- *Develop and implement management procedures to ensure that appropriate staff implements all elements of the SWPPP, including the Monitoring Implementation Plan;*
- *Develop a method of tracking and recording the implementation of BMPs identified in the SWPPP; and*
- *Maintain the BMP implementation records, training records, and records related to any spills and clean-up related response activities for a minimum of five years (Section XXI.J.4).*

Paper or electronic records of documents required by this SWPPP will be retained for a minimum of five (5) years from the date generated for the following items:

- Employee Training Records;
- BMP Implementation Records;
- Spill and Clean-up Related Records;
- Sampling and Analysis Records;
- Visual Observation Records;
- Corrective Action Records; and
- Annual Reports.

4.2 Advanced BMPs

Where the minimum BMPs described above will not adequately reduce or prevent pollutants in storm water discharges, the General Permit (Section X.H.2) requires dischargers, to the extent feasible, implement and maintain advanced BMPs necessary to reduce or prevent discharges of pollutants in its storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.

4.2.1 Exposure Minimization BMPs

Storm resistant shelters are installed onsite to prevent the contact of storm water with industrial activities and material. The locations of these shelters and associated industrial activities and materials are presented in **Figure 8** for ONT and are attached behind **Figure 3**, organized by tenant address, for each tenant. Structural controls, covered canopies and storm resistant shelters are utilized when possible in the following activity/use areas of the facility:

- Loading/unloading areas/docks
- Material handling areas

- Vehicle and equipment fueling areas
- Cargo handling areas

4.2.2 Storm water Containment and Discharge Reduction BMPs

Storm water containment and discharge reduction BMPs include BMPs that divert, reuse, contain, or reduce the volume of storm water runoff. Storm water retention ponds are located throughout the facility and are shown in **Figure 5**. The relevant CASQA Fact Sheets are included in **Appendix E**.

4.2.3 Spill Containment BMPs

Spill containment BMPs prevent spills and leaks from coming in contact with storm water runoff or directly discharging from the site. The size, type, and contents of tanks located at the tenant's properties are identified in Attachment B. Secondary containment is used at the facility to contain spills from storage tanks containing potential pollutants. ONT has a rigorous SPCC plan. Spill containment BMPs are presented in **Table 4.1**. Each tenant at ONT is responsible for implementing specific BMPs based on the industrial activities occurring at their facilities. The BMPs being implemented by each tenant are presented in **Table 4.2**.

4.2.4 Treatment Control BMPs

Treatment control BMPs include one or more mechanical, chemical, biologic, physical, or any other treatment process technology and is sized to meet the treatment control design storm standard. Specific treatment control BMPs implemented at ONT are summarized in **Table 4.1** and the BMP fact sheets are included in **Appendix E**. Treatment control BMPs implemented at VNY will be incorporated into the SWPPP as they are implemented.

4.3 BMP Implementation and Maintenance Schedule

BMPs will be maintained regularly to ensure proper and effective functionality. If necessary, corrective actions will be implemented as soon as practicable of identified deficiencies and associated amendments to the SWPPP will be prepared and documented. BMP inspections will occur monthly by Pollution Prevention Team members and records of BMP implementation will be documented on the **Monthly Dry Weather Visual Observations** form. Tenants at ONT are responsible for implementing BMPs specific to the industrial activities conducted at their facilities. The tenants must retain records of BMP implementation and maintenance and provide them to ONT Pollution Prevention Team members for review.

4.4 BMP Summary Table

Table 4.1 summarizes the minimum and advanced BMPs implemented to prevent discharge of pollutants in storm water runoff at ONT. The OIAA and CASQA BMP Fact Sheets included in **Appendix E** summarize the targeted industrial activities, targeted pollutants, purpose, approach, requirements, limitations and other relevant information for each of the BMPs implemented at ONT.

Each tenant at ONT is responsible for implementing specific BMPs based on the industrial activities occurring at their facilities. The BMPs being implemented by each tenant is presented in **Table 4.2**.

Table 4.1: BMP Summary Table

BMP Fact Sheet Number	Title	Addresses Minimum General Permit BMP Elements Requirements					Addresses Advanced General Permit BMP Elements Requirements		
		Good Housekeeping	Preventative Maintenance	Spill and Leak Prevention and Response	Material Handling and Waste Management	Erosion and Sediment Control	Exposure Minimization	Storm water Containment and Discharge Reduction	Treatment Control
SC1	Elimination of Non-Storm water Discharges	✓		✓		✓			
SC2	Aircraft, Ground Vehicle, and Equipment Maintenance	✓	✓	✓	✓				
SC3	Aircraft, Vehicle and Equipment Fueling	✓	✓	✓	✓		✓		
SC4	Aircraft, Vehicle and Equipment Washing	✓	✓	✓	✓				
SC5	Aircraft Deicing								
SC6	Outdoor Material Handling	✓	✓	✓	✓		✓		
SC7	Outdoor Storage of Significant Material	✓		✓	✓		✓		
SC8	Waste Handling and Disposal	✓	✓	✓	✓				
SC9	Building and Grounds Maintenance	✓		✓	✓				
SC10	Storm water Pollution Prevention Education	✓	✓	✓	✓	✓			
SC11	Lavatory Service Operations			✓					
SC12	Outdoor Washdown/Sweeping	✓	✓	✓	✓				
SC13	Fire Fighting Foam discharge	✓	✓	✓		✓			
SC14	Potable Water System Flushing	✓		✓		✓			
SC15	Runway Rubber Removal	✓	✓	✓	✓	✓			
TC1	Oil/Water Separators	✓			✓				✓
SR1	Emergency Spill Cleanup Plan	✓		✓	✓	✓			
CASQA SC40	Contaminated or Erodible Surfaces					✓			
CASCA SC44	Drainage System Maintenance	✓	✓	✓					
CASQA TC-20	Wet Pond							✓	

Table 4.2: ONT Tenant BMP Summary Table

Address	Tenant	No BMP info	SC1 Elimination of Non-Storm water Discharges	SC2 Aircraft, Ground Vehicle, and Equipment Maintenance	SC3 Aircraft, Vehicle and Equipment Fueling	SC4 Aircraft, Vehicle and Equipment Washing	SC6 Outdoor Material Handling	SC7 Outdoor Storage of Significant Material	SC8 Waste Handling and Disposal	SC9 Building and Grounds Maintenance	SC10 Storm water Pollution Prevention Education	SC11 Lavatory Service Operations	SC12 Outdoor Washdown/Sweeping	SC13 Fire Fighting Foam discharge	Employee Training	Spill Response Plan	Harvest and Reuse	Vegetated Buffer Strip	Bioertention	Media Filter	Water Quality Inlet	Biotreatment	Storm water Filter	Gravity Separator	Inspection of Haz Mat storage
1800 E Airport	Majestic Terminal Service		X				X	X			X		X												
1800 E Airport	Southwest	X																							
2500 E. Airport Dr	Alaska Air														X	X									X
2500 E. Airport Dr, Ste 1259	Delta Airlines																							X	
2500 E. Airport Dr	Skywest	X																							
2900 E. Airport Dr. Ste 1245	American Airlines		X	X	X		X			X	X	X													
2900 E. Airport Dr. Ste 1428	ATS GSE		X	X					X		X														
1801 Avion Street	FedEx		X	X	X	X			X	X	X		X												
2161 E Avion Street	Ameriflight										X														
2161 E Avion Street, Building 1	Cinco Air Charter		X		X				X			X	X	X											
2161 E. Avion Unit 4-2	Jett Pro Line Maintenance		X	X		X				X	X		X				X	X	X	X	X	X			
2161 E. Avion, Hangar 2	Jet Systems International		X	X					X		X	X													X
1049 S. Vineyard	Aircraft Service International Group	X																							
1150 S. Vineyard	Guardian Jet Center		X	X	X	X			X		X	X												X	

5. MONITORING IMPLEMENTATION PLAN AND REPORTING

5.1 Purpose

This section describes the Site Monitoring Implementation Plan (MIP) and the storm water program reporting obligations. The following topics are addressed:

- Storm water monitoring team;
- Storm water discharge locations;
- Visual observations and response procedures;
- Storm water sampling and analysis procedures;
- Sampling documentation procedures; and
- Quality assurance and quality control, including field instrument calibration.

5.2 Storm water Monitoring Team

The storm water monitoring team is comprised of the same staff that forms the Pollution Prevention Team. Those individuals are identified in **Table 1.1** of this plan.

5.3 Discharge Locations

As described in **Section 2.1.4** and shown in **Figures 4 through 6**, ONT is divided into three storm water drainage areas which discharge at three locations. **Table 5.1** identifies each:

Table 5.1: Storm water Discharge Locations

Location Identifier	Discharge Location	Drainage Area
WCC	West Cucamonga Channel	West Cucamonga Channel Drainage Area
CC	Cucamonga Channel	Cucamonga Channel Drainage Area
DC	Deer Creek	Deer Creek Drainage Area

Whenever changes in facility operations might affect the appropriateness of visual observation and sampling locations, the locations will be revised accordingly. All such revisions will be implemented as soon as feasible and the SWPPP amended.

5.4 Monthly Dry Weather Visual Observations and Responses

Visual observations are conducted by ONT tenants at least once each calendar month to identify potential storm water pollutant sources associated with outdoor industrial

equipment operations and storage areas at their facilities. Monthly visual observation forms are submitted to ONT Pollution Prevention Team staff following completion each month. Monthly visual observations will be conducted during daylight hours of scheduled facility operating hours and on days without precipitation.

Monthly dry weather visual observations include observations of the following:

- Authorized and unauthorized non-storm water discharges
- Industrial activity areas
- BMP implementation

Monthly dry weather visual observations will be documented on the **Monthly Dry Weather Visual Observations** form located in **Appendix F** and will serve as the BMP Implementation Log for the BMPs maintained at the facility. If visual observations are not conducted, an explanation shall be provided on a **Monthly Dry Weather Visual Observation** form.

5.4.1 Non-Storm water Discharge Observations

Drainage areas shall be observed to identify the presence of or evidence of past spills, leaks, uncontrolled pollutant sources, or other authorized or unauthorized non-storm water discharges. Non-storm water discharge observations should be documented on the **Monthly Dry Weather Visual Observations** form located in **Appendix F**.

The following information should be recorded on the **Monthly Dry Weather Visual Observations** form, as appropriate:

- Presence or evidence of any non-storm water discharge (authorized or unauthorized);
- Pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.); and
- Source of discharge.

For authorized non-storm water discharges, also document whether BMPs are in place and are functioning to prevent contact with materials or equipment that could introduce pollutants to storm water conveyance systems.

5.4.2 Industrial Activities Areas and BMP Implementation

Drainage areas and identified potential pollutant source areas, including outdoor industrial activity, industrial equipment, and material storage areas, shall be observed for evidence of potential pollutant sources. BMPs shall be observed to verify that they are being implemented as described in **Section 4**. BMP deficiencies shall be noted and

repairs and/or maintenance shall be initiated as soon as possible. Industrial activity areas and BMP observations should be documented on the **Monthly Dry Weather Visual Observations** form located in **Appendix F**.

5.4.3 Visual Observations Follow-Up and Reporting

Correction of deficiencies identified by the observations, including required repairs or maintenance of BMPs, will be initiated and completed as soon as possible. Response actions will include the following:

- Report observations to the Pollution Prevention Team Leader or designated individual;
- Identify and implement appropriate response actions;
- Determine if a SWPPP update is needed; • Verify completion of response actions; and
- Document response actions.

If identified deficiencies require design changes, including additional BMPs, the implementation of changes will be completed as soon as possible and the SWPPP will be amended to reflect the changes. BMP deficiencies identified during routine visual observations and the measures taken to correct deficiencies will be tracked on the **Monthly Dry Weather Visual Observations** form.

5.5 Storm water Sampling and Analysis Procedures

This section describes the methods and procedures that will be followed for storm water sampling and analysis. It contains information for sampling schedule, sampling locations, sample collection procedures, sample handling, sample analysis, and data evaluation and reporting.

5.5.1 Storm water Sampling Schedule

Storm water discharge samples will be collected during two Qualifying Storm Events (QSEs) within the first half of each reporting year (July 1 to December 31) and two QSEs within the second half of each reporting year (January 1 to June 30).

In accordance with Regional Board requirements for ONT, a QSE is a precipitation event that:

- Produces a discharge for at least one drainage area;
- Is a storm event that produces 0.1 inches of rain or greater; and
- Is preceded by 72 hours of dry weather of less than 0.1 inch of precipitation.

5.5.2 Storm water Sampling Locations

Three sampling locations selected for the facility are shown on **Figure 6** and described in **Table 5.2**.

Table 5.2: Storm water Sampling Locations

Sample Location ID	Sample Location Description	Sample Location Latitude and Longitude
MY	Maintenance Yard	34.048133°, -117.603694°
CC	Cucamonga Channel	34.048205°, -117.602027°
DC	Deer Creek	34.052011°, -117.584511°

5.5.3 Sample Collection Criteria

Storm water samples will be collected from each discharge location within four hours of the start of the discharge.

Discharges of temporarily stored or contained storm water must also be sampled at the time of discharge.

Samples will be collected:

- During daylight hours; and
- When sampling conditions are safe (i.e., not during flooding or electrical storms).

Only team members properly trained in water quality sampling will collect samples. If sampling cannot be conducted, document this on the **QSE Sampling Log and Visual Observations** form located in **Appendix G**.

5.5.4 Sampling Preparation

An adequate stock of monitoring supplies and equipment for sampling will be available on site prior to a sampling event. Monitoring supplies and equipment will be stored in a cool temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule. Supplies maintained at the facility will include, but are not limited to:

- clean powder-free nitrile gloves;

- sample collection equipment;
- coolers;
- appropriate number and volume of sample containers;
- identification labels;
- re-sealable storage bags;
- paper towels;
- personal rain gear;
- ice; and
- **QSE Sampling Log and Visual Observations** form and **Chain of Custody (COC)** form, which are provided in **Appendix G**.

5.5.5 Sample Collection Procedures

Grab samples will be collected by submerging a properly cleaned glass sample collection container directly in the storm water flow. Collected storm water will be transferred from the collection container to the preserved laboratory-supplied sample bottles being careful not to overfill the bottles so as not to flush out any preservative.

To maintain sample integrity and prevent cross-contamination, sample collection personnel will abide by the following protocols:

- Wear clean, powder-free nitrile gloves when collecting samples;
- Change gloves whenever something not known to be clean has been touched;
- Clean/decontaminate equipment (e.g., sample collection container) prior to sample collection using a phosphate-free water wash, distilled water rinse, and final rinse with distilled water. Dispose of wash and rinse water appropriately (i.e., do not discharge to storm drain or receiving water). Do not decontaminate laboratory-provided sample containers;
- Only use laboratory-provided sample containers for laboratory analysis;
- Do not smoke during sampling events;
- Never sample near a running vehicle;
- Do not park vehicles in the immediate sample collection area (even non-running vehicles);
- Do not eat or drink during sample collection; and
- Do not breathe, sneeze, or cough in the direction of an open sample container.

The most important aspect of grab sampling is to collect a sample that represents the entire runoff stream. Typically, samples are collected by dipping the collection container in the runoff flow paths and streams or holding the mouth of the collection container below the stream of water spilling into the catch basin as noted below.

- For small streams and flow paths, face upstream and simply dip the collection bottle facing upstream until full;
- Avoid collecting samples from ponded, sluggish or stagnant water; and
- Do not stand in the flow path upstream of the sampling point to avoid contaminating the samples.

5.5.6 Sample Handling

5.5.6.1 Field Measurements

Field pH must be measured immediately following sample collection by filling a clean, decontaminated container large enough to submerge the pH sensor in collected storm water. Do not store samples for later pH measurement. Do not use water collected for measuring pH for filling laboratory sample bottles.

5.5.6.2 Laboratory Analysis

Immediately following sample collection, the following will be completed:

- Cap sample containers;
- Complete sample container labels;
- Seal containers in a re-sealable plastic bag;
- Place bagged sample containers into an ice-chilled cooler; • Document sample information on the Sampling Field Log Sheet; and
- Complete the COC form and place in a re-sealable plastic bag.
- Cross check information recorded in the field log, on sample bottle labels and on the COC form for consistency. Make any corrections by lining through the error without completely obliterating the original entry and initial any changes.

Samples collected for laboratory analysis must be maintained between 0-6 degrees Celsius during delivery to the laboratory. Samples must be kept on ice immediately following sample collection until the samples are delivered to the laboratory. Place samples into coolers with ice making sure the sample bottles are well packaged to prevent breakage and secure cooler lids with packaging tape.

Deliver samples to the analytical laboratory right away. Hold times are measured from the time the sample is collected to the time the sample is analyzed. The General Permit requires that samples be received by the analytical laboratory within 48 hours of the physical sampling (unless required sooner by the analytical laboratory).

5.5.7 Sample Analysis

Grab samples will be collected and analyzed in the field for pH using a calibrated portable field meter or litmus paper no later than 15 minutes after sample collection. Instructions for meter calibration and maintenance are included in **Appendix H**.

Storm water discharge grab samples will be collected and preserved in accordance with the methods identified in **Table 5.3** for the required parameters. Samples will be analyzed by:

Weck Laboratories, Inc.
14859 East Clark Avenue
City of Industry, CA 91745
(626) 336-2139
ELAP Certification Number: 1132

Table 5.3: Sample Collection, Preservation and Analysis for Water Quality Samples

Constituent	Basis	Analytical Method	Minimum Sample Volume	Sample Containers	Sample Preservation	Method Reporting Limit	Maximum Analytical Holding Time
pH	Minimum Parameter	Field Meter	100 mL	NA	NA	NA	Less than 15 minutes after collecting sample in field
Total Suspended Solids (TSS)	Minimum Parameter	SM 2540-D	1,000 mL	1-L HDPE	4°C	1 mg/L	7 Days
Oil & Grease (O&G)	Minimum Parameter	EPA 1664A	1,000 mL	1-L Amber Glass	H ₂ SO ₄ , 4°C	5 mg/L	28 Days
Total Copper	Pollutant Source Assessment	EPA 200.8	100 mL	250 mL HDPE	HNO ₃ , 4°C	0.0005 mg/L	180 days
Total Zinc	Pollutant Source Assessment	EPA 200.8	100 mL			0.005 mg/L	

Notes:

°C – Degrees Celsius

HDPE – High Density Polyethylene

HNO₃ – Nitric Acid

H₂SO₄ – Sulfuric Acid

L – Liters

mg/L – milligrams per liter

mL – milliliters

NA – Not Applicable

5.6 Sampling Documentation Procedures

A blank **QSE Sampling Log and Visual Observations** form and an example COC are included in **Appendix G**. Sampling documentation shall be recorded using ink. Information recorded on the **QSE Sampling Log and Visual Observations** form, on sample bottle labels and on the COC will be reviewed at the end of the sampling event and prior to submittal of samples to the laboratory. Documentation will be crosschecked for consistency. Make any corrections by lining through the error without completely obliterating the original entry and initial any changes. All corrections will be initialed and dated.

Sample documentation includes the following:

- **QSE Sampling Log and Visual Observations** form - Sampling personnel will complete the form for each sampling event and maintain a copy with the SWPPP; and
- **Chain of Custody** - Sampling personnel will complete the COC for each sampling event for which samples are collected for laboratory analysis. The sampler will sign the COC when the samples are turned over to the testing laboratory or courier. A copy of the completed COC will be maintained with the SWPPP.

5.7 Storm Event Visual Observations and Responses

Whenever storm water samples are collected, sampling event visual observations will also be conducted. These observations allow the Pollution Prevention Team to quickly assess the quality of the discharged storm water and respond to potential BMP deficiencies in a timely manner.

The **QSE Sampling Log and Visual Observations** form found in **Appendix G** will be used to record sampling event observations and will include the following information:

- Pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.);
- Source contributing to the observed pollutants; and
- New or revised BMPs and implementation date.

Discharges of temporarily stored or contained storm water must also be observed at the time of discharge. When pollutants (i.e., odor, oily sheen, sediment, trash, etc.) are observed in the discharged storm water, follow-up observations of the drainage area will be conducted to identify the probable source of the pollutants and adequacy of BMPs. BMP deficiency corrections, including repairs or maintenance of BMPs, will be initiated as soon as possible. If the deficiencies require substantive design or procedural changes, including additional BMPs, the SWPPP will be amended to reflect the changes. In the event that monthly visual observations are not performed or a QSE did not occur, an explanation must be provided on a **QSE Sampling Log and Visual Observations** form.

5.8 Quality Assurance and Quality Control

An effective Quality Assurance and Quality Control (QA/QC) plan will be implemented as part of the MIP to ensure that reliable data (field observations and analytical data) is obtained. QA/QC procedures to be initiated include the following:

- Field forms will be carefully and legibly prepared and signed by the team member that conducts the observations and sampling;
- Clean sampling techniques will be implemented by trained team members;
- Field instruments are carefully calibrated and the calibration documented on sampling forms;
- Chains of custody forms will be carefully prepared and reviewed prior to sample shipment; and
- Data will be reviewed to ensure that the laboratory performed the requested analyses and that laboratory performance parameters (hold time, reporting limits, method detection limits, and laboratory QC samples) are satisfactory.

5.9 Storm Event Log

The **Storm Event Log** found in **Appendix I** will be used to keep track of rain events at the Site. The **Storm Event Log** should be filled out by a member of the Pollution Prevention Team following any rain at the site, regardless of whether the storm event is considered qualifying.

6. REPORTING AND RECORDKEEPING

6.1 Storm water Discharge Analytical Results Reporting

Sampling and analytical results for individual samples will be submitted via SMARTS within 30 days of obtaining the results for each sampling event.

- The method detection limit will be provided when an analytical result from samples taken is reported by the laboratory as a “non-detect” or less than the method detection limit. A value of zero will not be reported.
- Analytical results that are reported by the laboratory as below the minimum level (often referred to as the reporting limit) but above the method detection limit will be provided.
- Reported analytical results will be averaged automatically by SMARTS at the end of the reporting year. For any calculations required by the General Permit a value of zero shall be used for analytical results that are reported by the laboratory as “non-detect” or less than the Method Detection Limit (MDL).

6.2 Annual Comprehensive Facility Compliance Evaluation

The General Permit (Section XV) requires the Discharger to conduct one Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation) for each reporting year (July 1 to June 30). Annual Evaluations will be conducted at least eight months and not more than 16 months after the previous Annual Evaluation. The planned window for conducting the Annual Evaluation is between April and June of each year. The SWPPP will be revised, as appropriate based on the results of the Annual Evaluation, and the revisions will be implemented within 90 days of the Annual Evaluation.

At a minimum, Annual Evaluations will consist of:

- A review of all sampling, visual observation, and inspection and monitoring records and sampling and analysis results conducted during the previous reporting year;
- A visual inspection of all areas of industrial activity and associated potential pollutant sources for evidence of, or the potential for, pollutants entering the storm water conveyance system;
- A visual inspection of all drainage areas previously identified as having no exposure to industrial activities and materials in accordance with the definitions in General Permit Section XVII;
- A visual inspection of equipment needed to implement the BMPs;
- A visual inspection of any BMPs;
- A review and effectiveness assessment of all BMPs for each area of industrial activity and associated potential pollutant sources to determine if the BMPs are

properly designed, implemented, and are effective in reducing and preventing pollutants in industrial storm water discharges and authorized NSWDS; and

- An assessment of any other factors needed to comply with the Annual Reporting requirements in General Permit Section XVI.B.

6.3 Annual Report

The Annual Report will be prepared, certified, and electronically submitted no later than July 15th following each reporting year using the standardized format and checklists in SMARTS based on the reporting requirements identified in Section XVI of the General Permit. Annual reports will be submitted in SMARTS and in accordance with information required by the on-line forms.

6.4 Records Retention

Paper or electronic records of storm water monitoring information and copies of reports (including Annual Reports) must be retained for a period of at least five years from date of submittal or longer if required by the Regional Water Board.

Records to be retained include:

- Employee Training Records;
- BMP Implementation Records;
- Spill and Clean-up Related Records;
- Sampling logs and analytical laboratory reports;
- Visual Observation Records, including corrective action responses; and
- Annual Reports from SMARTS (checklist and any explanations).

Copies of these records will be available for review by the Water Board's staff at the facility during scheduled facility operating hours. Upon written request by U.S. EPA or the local MS4, Dischargers will provide paper or electronic copies of requested records to the Water Boards, U.S. EPA, or local MS4 within 10 working days from receipt of the request.

7. REFERENCES

State Water Resources Control Board (2014). Order 2014-0057-DWQ, NPDES General Permit No. CAS000001: National Pollutant Discharges Elimination System (NPDES) California General Permit for Storm Water Discharge Associated with Industrial Activities. Available on-line at:

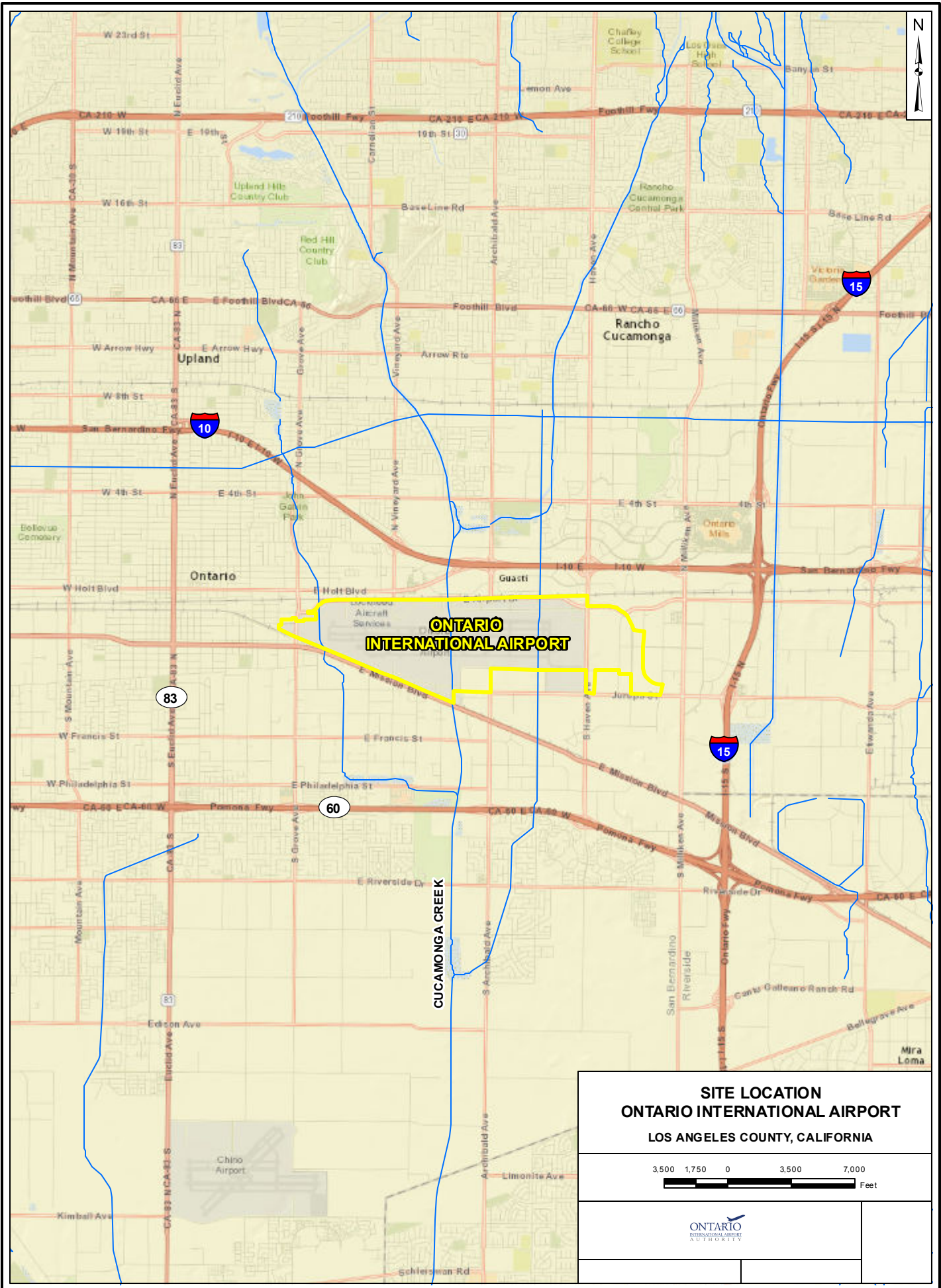
http://www.waterboards.ca.gov/water_issues/programs/storm_water/industrial.shtml.

CASQA 2012, *Storm water BMP Handbook Portal: Industrial Commercial*, August 2014, www.casqa.org

8. LIST OF ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
Annual Evaluation	Annual Comprehensive Facility Compliance Evaluation
BMPs	Best Management Practices
CASQA	California Storm water Quality Association
COC	Chain of Custody
COD	Chemical Oxygen Demand
ERA	Exceedance Response Action
ERAs	Exceedance Response Actions
General Permit	General Permit for Storm water Discharges Associated with Industrial Activities
HMMP	Hazardous Material Management Plan
LRP	Legally Responsible Person
MDL	Method Detection Limit
MIP	Monitoring Implementation Plan
MS4	Municipal Separate Storm Sewer System
NAL	numeric action level
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharges Elimination System
NSWDs	Non-Storm water Discharges
PRDs	Permit Registration Documents
PPT	Pollution Prevention Team
QA/QC	Quality Assurance and Quality Control
QSEs	Qualified Storm Events
SMARTS	Storm water Multi Application and Report Tracking System
SPCC	Spill Prevention Control and Countermeasure
State Water Board	State Water Resources Control Board
SWPPP	Storm water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
WDID	Waste Discharge Identification

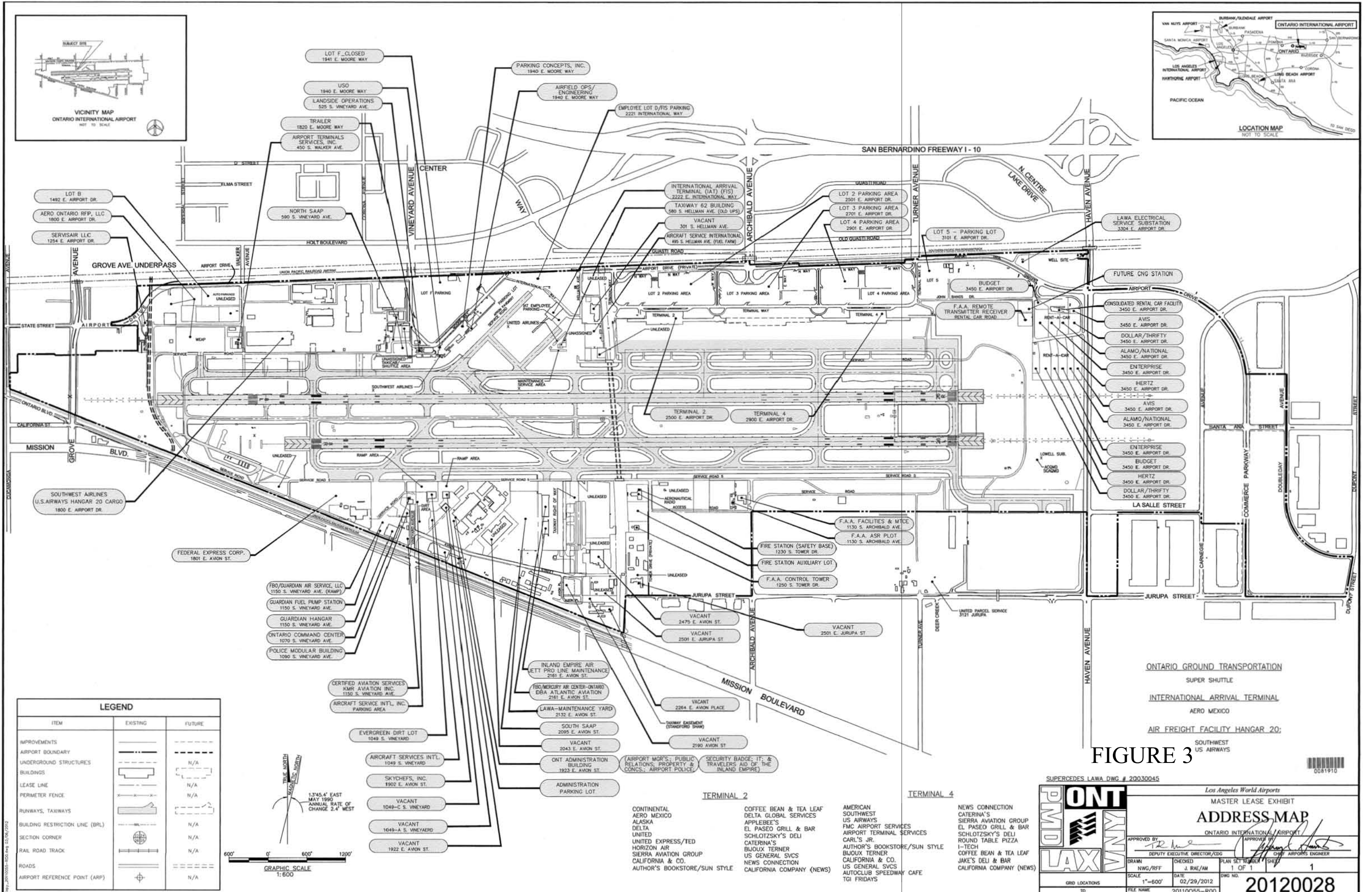
FIGURES



ONTARIO INTERNATIONAL AIRPORT

**SITE LOCATION
ONTARIO INTERNATIONAL AIRPORT
LOS ANGELES COUNTY, CALIFORNIA**





LEGEND		
ITEM	EXISTING	FUTURE
IMPROVEMENTS	—	- - - -
AIRPORT BOUNDARY	—	- - - -
UNDERGROUND STRUCTURES	—	N/A
BUILDINGS	—	- - - -
LEASE LINE	—	N/A
PERIMETER FENCE	—	N/A
RUNWAYS, TAXIWAYS	—	- - - -
BUILDING RESTRICTION LINE (BRL)	—	N/A
SECTION CORNER	—	N/A
RAIL ROAD TRACK	—	N/A
ROADS	—	- - - -
AIRPORT REFERENCE POINT (ARP)	—	N/A

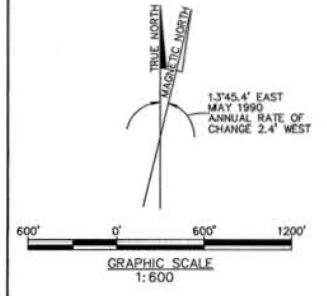


FIGURE 3

SUPERCEDES LWA DWG # 20030045

Los Angeles World Airports
MASTER LEASE EXHIBIT
ADDRESS MAP
ONTARIO INTERNATIONAL AIRPORT

APPROVED BY: [Signature] DEPUTY EXECUTIVE DIRECTOR/COO
APPROVED BY: [Signature] CHIEF AIRPORTS ENGINEER

DRAWN: NRG/RFJ CHECKED: J. RAE/AM PLAN SET NUMBER: 1 OF 1 SHEET: 1
SCALE: 1"=600' DATE: 02/29/2012 DWG NO.: 20120028
FILE NAME: 20110055-ROO

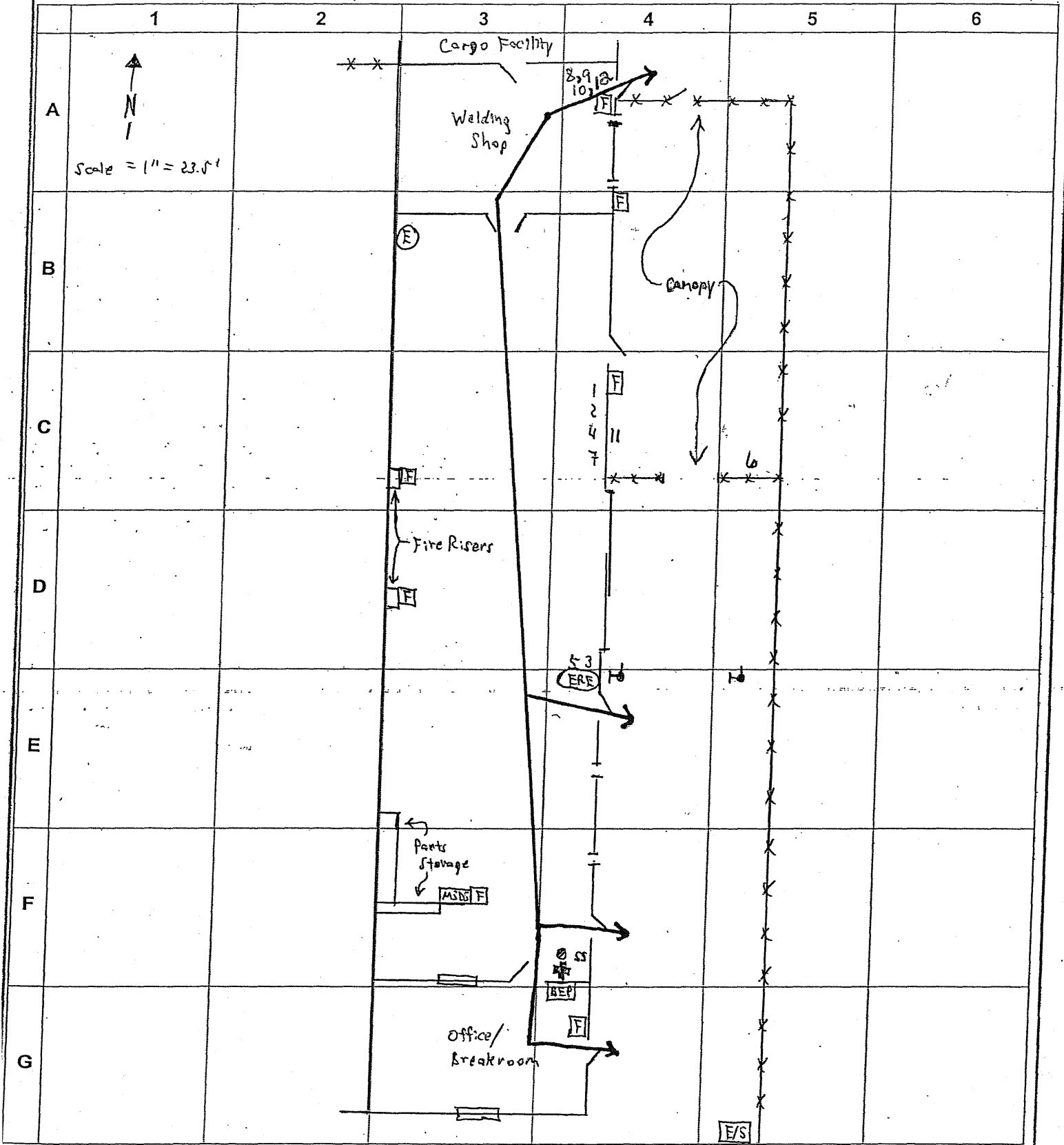
- TERMINAL 2**
- CONTINENTAL
 - AERO MEXICO
 - ALASKA
 - DELTA
 - UNITED
 - UNITED EXPRESS/TED
 - HORIZON AIR
 - SIERRA AVIATION GROUP
 - CALIFORNIA & CO.
 - AUTHOR'S BOOKSTORE/SUN STYLE
- TERMINAL 4**
- NEWS CONNECTION
 - CATERINA'S
 - CATERINA'S AVIATION GROUP
 - EL PASEO GRILL & BAR
 - SCHLOTZSKY'S DELI
 - ROUND TABLE PIZZA
 - I-TECH
 - COFFEE BEAN & TEA LEAF
 - JAKE'S DELI & BAR
 - CALIFORNIA COMPANY (NEWS)
- COFFEE BEAN & TEA LEAF
DELTA GLOBAL SERVICES
APPLEBEE'S
EL PASEO GRILL & BAR
SCHLOTZSKY'S DELI
CATERINA'S
BLUJUX TERNER
US GENERAL SVCS
NEWS CONNECTION
CALIFORNIA COMPANY (NEWS)
- AMERICAN
SOUTHWEST
US AIRWAYS
FMC AIRPORT SERVICES
AIRPORT TERMINAL SERVICES
CARL'S JR.
AUTHOR'S BOOKSTORE/SUN STYLE
BLUJUX TERNER
CALIFORNIA & CO.
US GENERAL SVCS
AUTOCLUB SPEEDWAY CAFE
TGI FRIDAYS

- ONTARIO GROUND TRANSPORTATION
- SUPER SHUTTLE
- INTERNATIONAL ARRIVAL TERMINAL
- AERO MEXICO
- AIR FREIGHT FACILITY HANGAR 20:
- SOUTHWEST
- US AIRWAYS

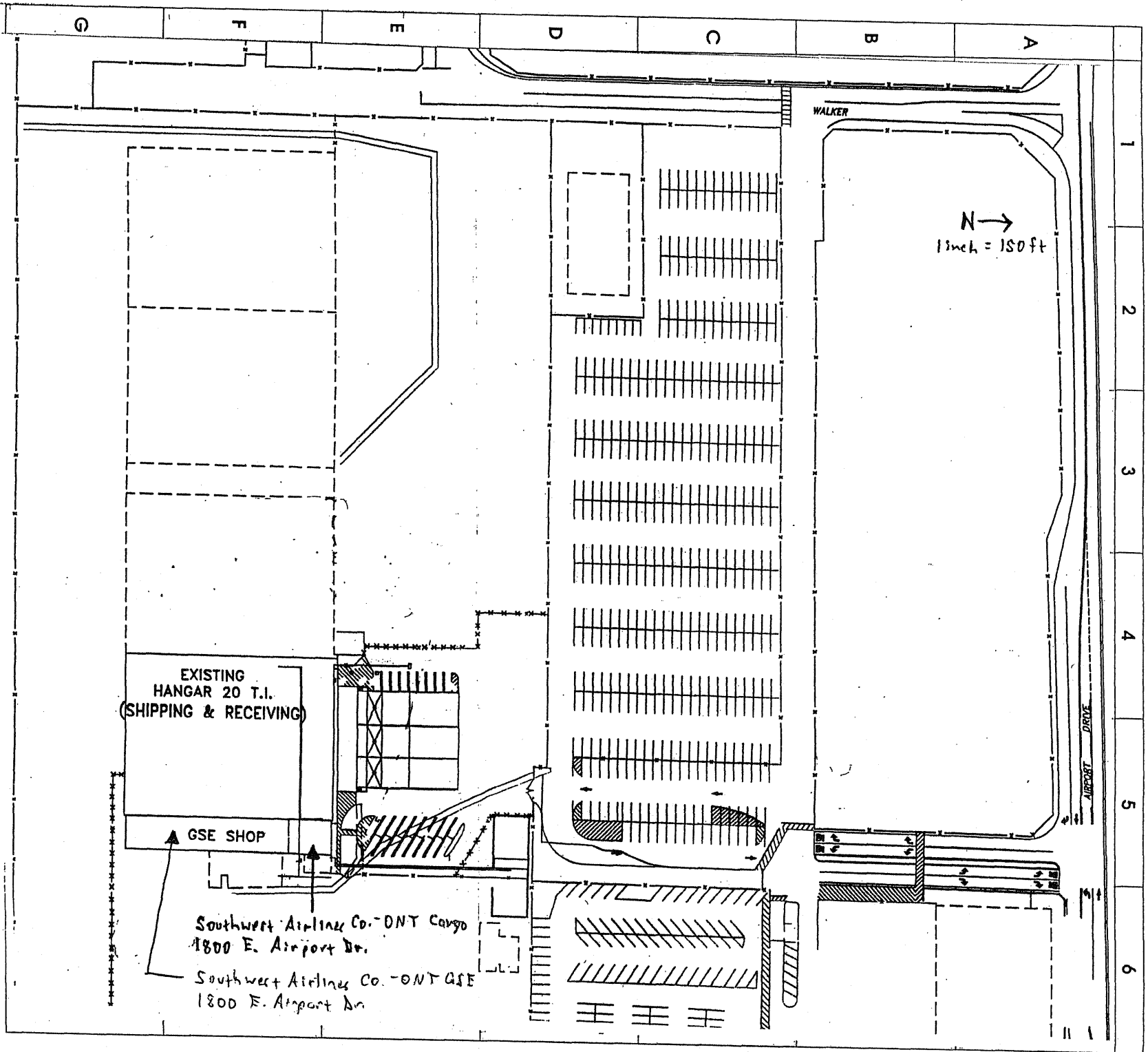
GSE Shop

FACILITY MAP

Southwest
1800 E. Airport 1 of 2



Date:



SITE MAP

Southwest
1800 E. Airport 2 of 2

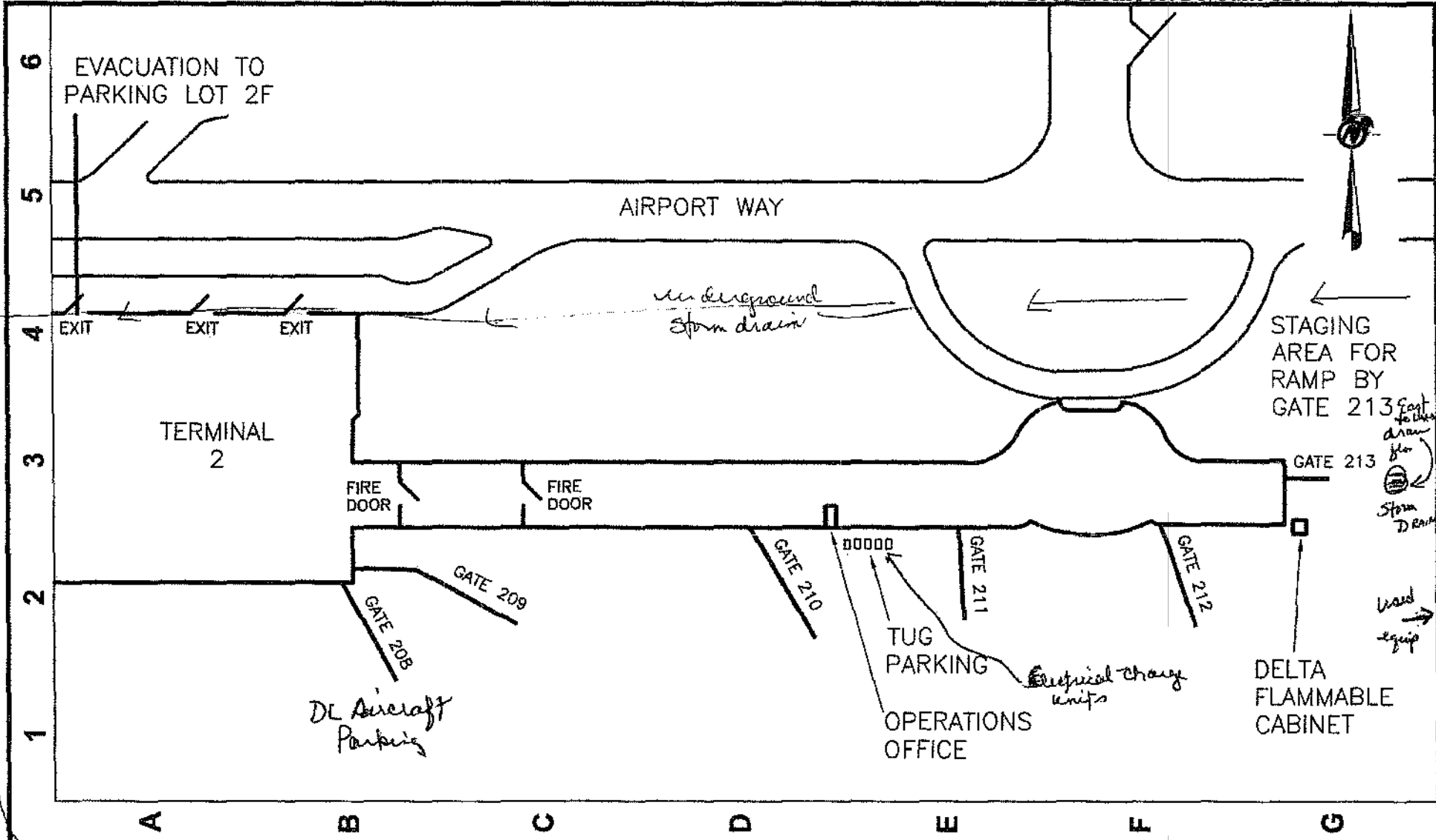
Primary EC Johnson L. 951-310-7447
 Secondary EC Proffitt T. 909-214-5034
 EC Keenmascanga L. 949-605-7373

DELTA (ONT)

6/9/15

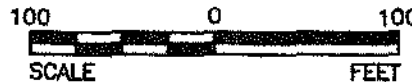
Delta Airlines
 2500 E. Airport Dr, Suite 1259

Drawing file: 09382717B001.dwg Aug 12, 2010 - 3:35pm



REFERENCES

- 1.) BASE MAP DIGITIZED FROM LOS ANGELES WORLD AIRPORTS FIGURE 20100021 TITLED EXISTING AIRPORT LAYOUT PLAN AIRPORT LAYOUT PLAN, DATED MARCH 2, 2010.



oil water separation
 (south of airport)

eventually drops in SANTA ANA RIVER.

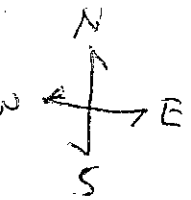
PROJECT	DELTA AIRLINES, INC. ONTARIO INTERNATIONAL AIRPORT (ONT) ONTARIO, CALIFORNIA		
TITLE	FACILITY MAP		
PROJECT No.	093-82717	FILE No.	09382717B001
DESIGN	CNR	DATE	08/12/10
DRAWN	RJH	SCALE	AS SHOWN
CHECK		DATE	08/12/10
REVIEW			



FIGURE 3

ALASKA AIR
2500 E. Airport Dr.

↓ = water flow direction



ROOFING

Terminal 2 Building

ROOFING

Bag Room Building

Jet Bridge

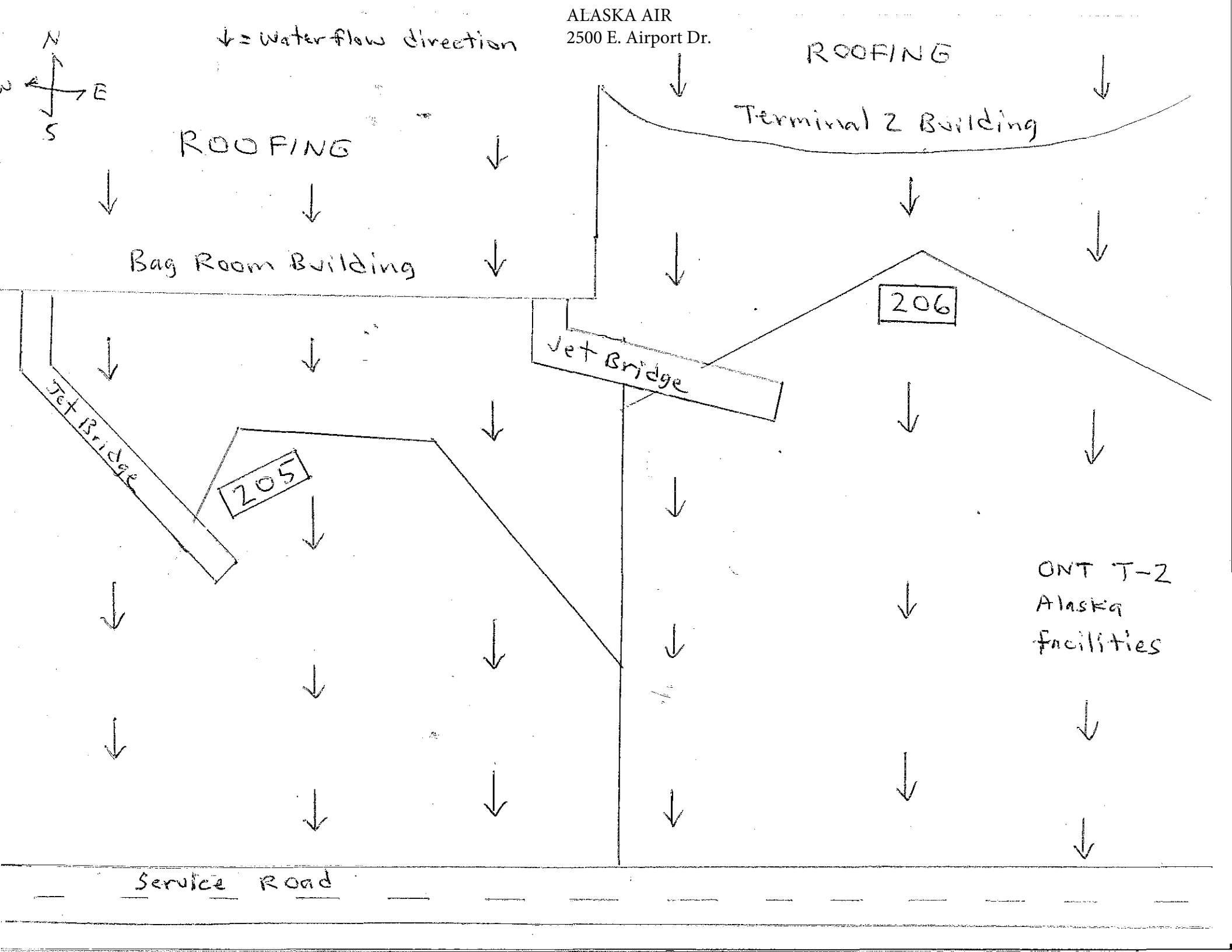
206

Jet Bridge

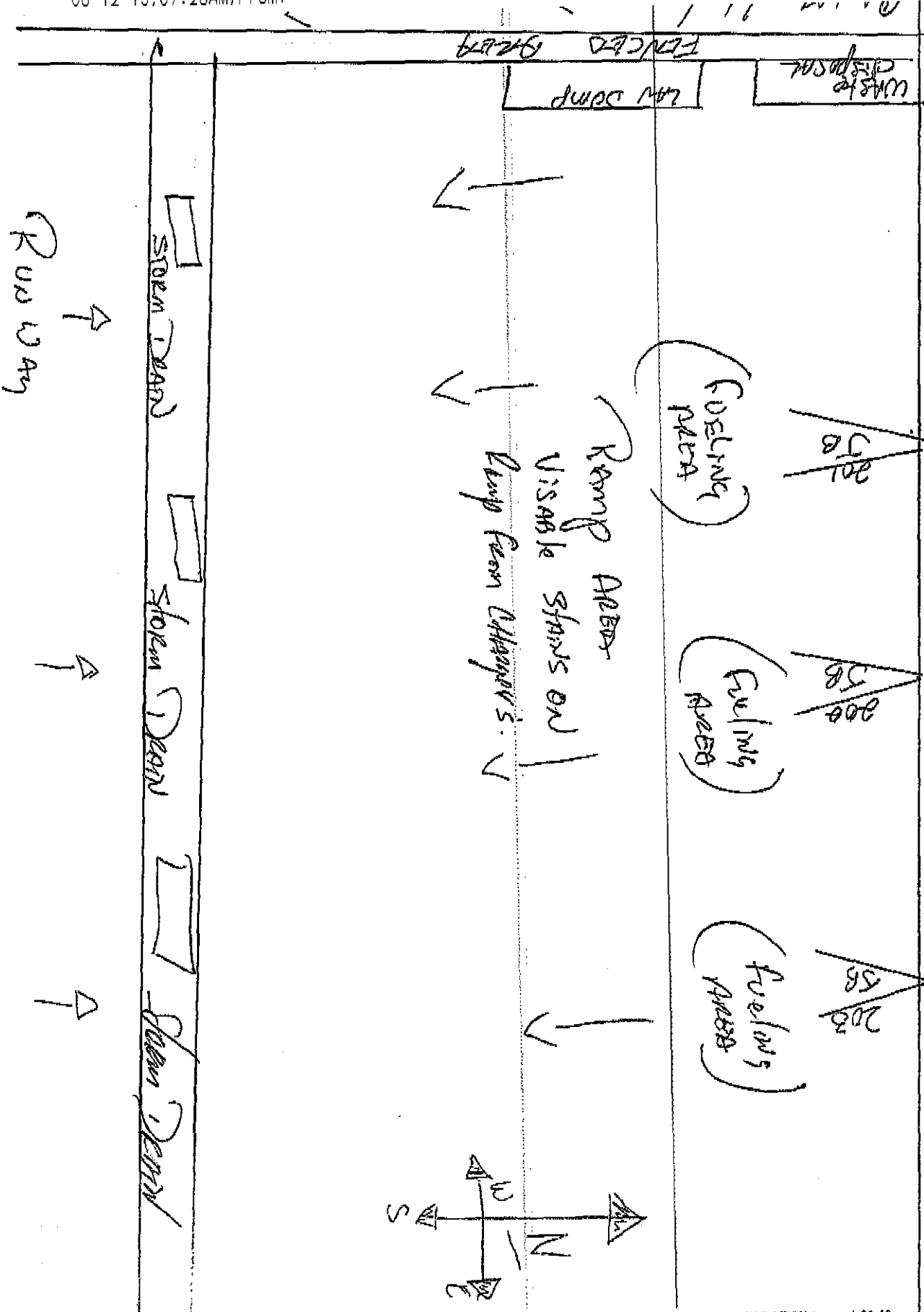
205

ONT T-2
Alaska
facilities

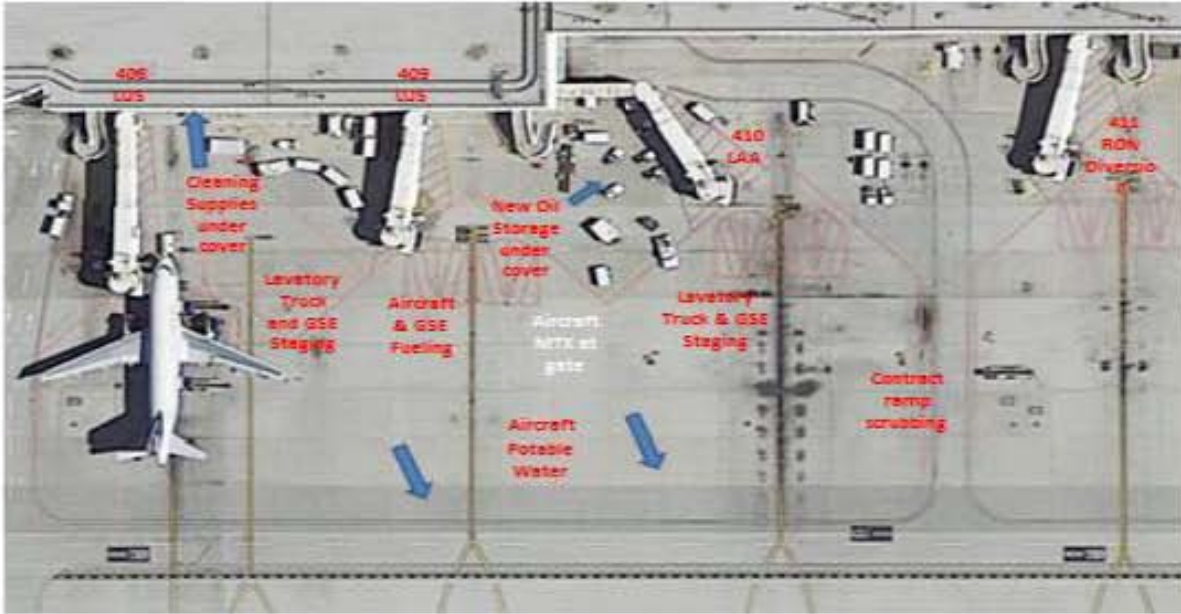
Service Road



SKYWEST
2500 E. Airport Dr.



American Airlines Terminal
2900 E. Airport Drive, Ontario CA 91761



6/1/2013

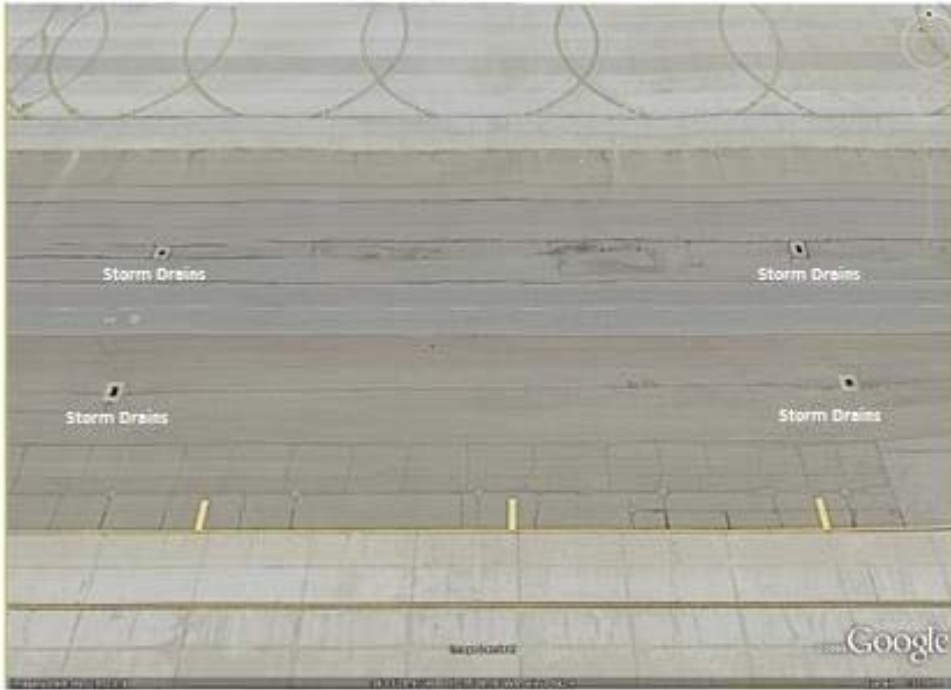
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American Airlines Terminal
2900 E. Airport Drive, Ontario CA 91761

Page 2 of 2

Stormwater Catch Basins



6/1/2015

7

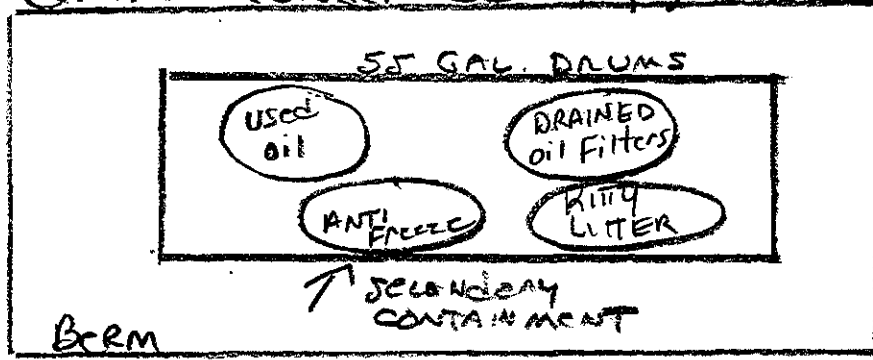
ATS GSE
2900 E. Airport Dr. Suite 1428

Walker
St.

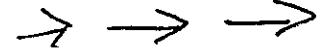
CHAIN LINK

NO access from street

JAA (Under canopy)



Approx
100 gals.
DRAIN



FLAMMABLE CABINET

GSE Workshop
(Under canopy)

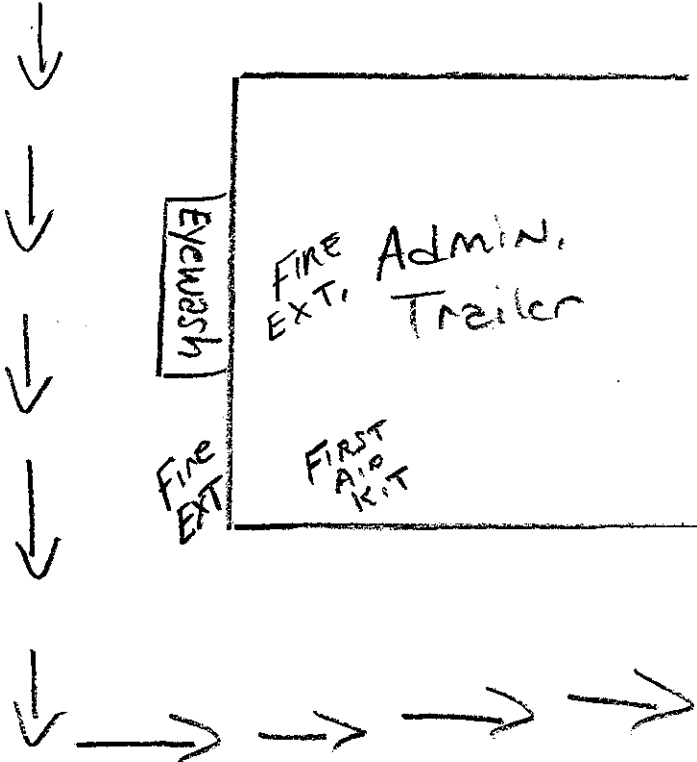
Fire EXT.

Eyewash

FIRE EXT. Admin. Trailer

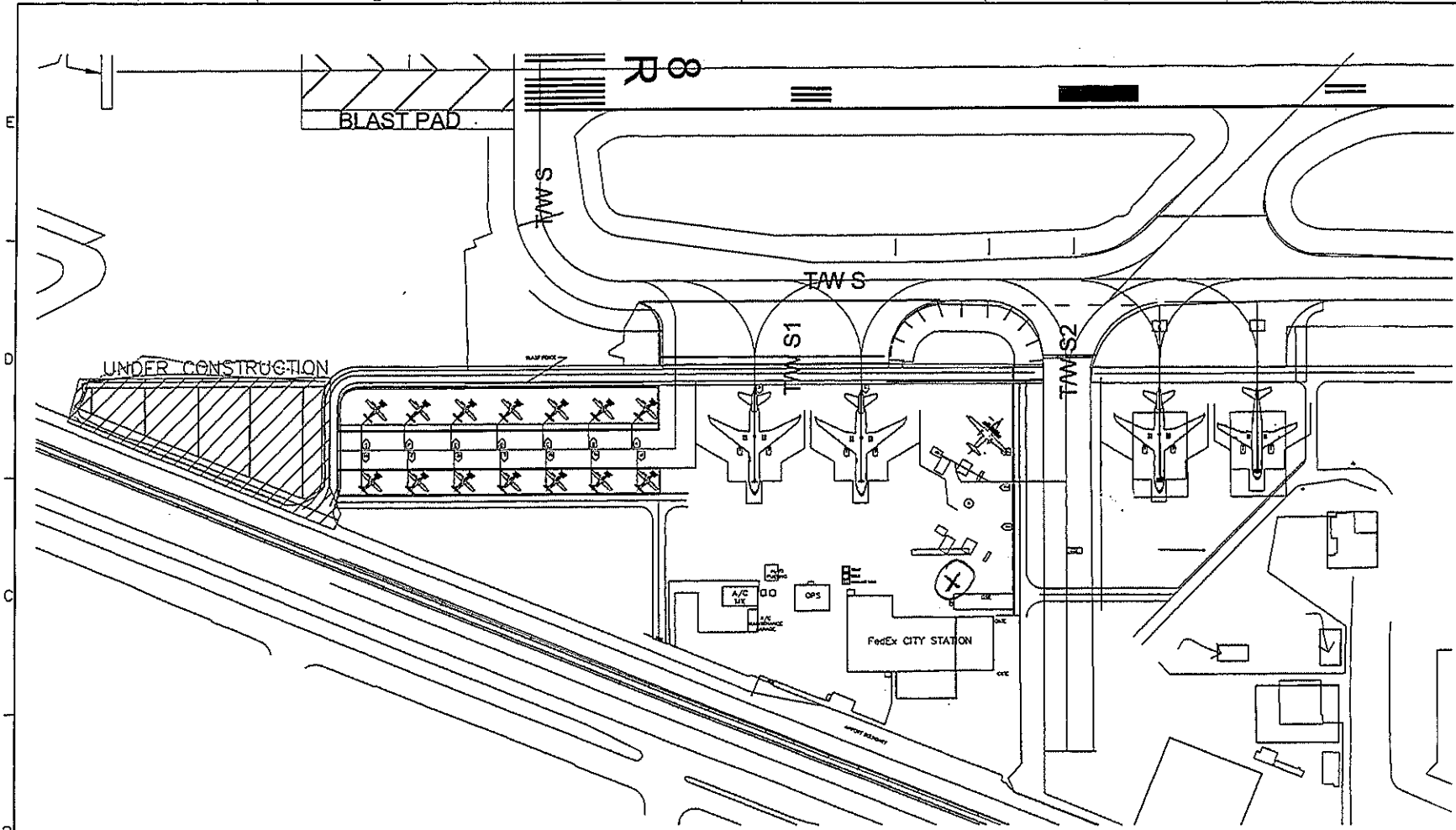
FIRST AID KIT

Fire EXT.



N
E
W
S

Open
airport
field



CONTACT INFO
 CORPORATE FACILITIES PLANNING
 SPENCER EVANS (901) 434-8948
 MIDDLE (901) 604-7153
 LARRY FUTRELL (901) 434-9166
 Sue Holo (901) 434-8865

APPROVALS

CFP	<i>[Signature]</i>	DATE	12-2-04
FLIGHT SAFETY	<i>[Signature]</i>	DATE	12/2/04
RAMP MANAGEMENT	<i>[Signature]</i>	DATE	12/2/04
OPERATIONS	<i>[Signature]</i>	DATE	12/2/04
CFP/FAO	<i>[Signature]</i>	DATE	12/2/04
MANAGEMENT	<i>[Signature]</i>	DATE	12/2/04

REVISIONS

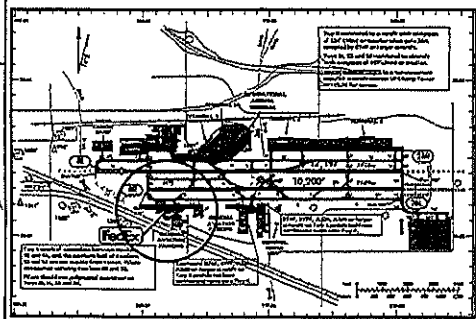
- (001) SW 3-19-03 ADDED NEW TRILE BLOCK.
- (002) SW 6-21-03 ADDED SEPARATE TO GATES 1 AND 2. ADDED A/C POSITION FOR METHOD 8722.
- (003) SW 10-03-03 ADDED AIRPORT MAINTENANCE BUILDING AND AIRPORT WAREHOUSE GARAGE WITH FROGAL.
- (004) SW 7-20-04 LOCATED 2 C208 AT GATE 2. POSITION 2 FEET GATES Y & Z.
- (005) SW 11-20-04 Modified a FEET on gate 2 work line.
- (006) SW 12-03-04 REVISED THE 2 C208 AT GATE 2 LOCATED GATE Y BACK TO ITS ORIGINAL LOCATION.
- (007) SW 7-20-04 UPDATED BASE DRAWING AND FILE BLOCK.
- (008) SW 8-15-14 GATE 701 UNDER CONSTRUCTION. CONSTRUCTION PARKING.
- (009) SW 12-2-14 gate 1 A & 2 open.

1801 E. Avion Street



ONTARIO INTERNATIONAL AIRPORT
 ONTARIO, CALIF.

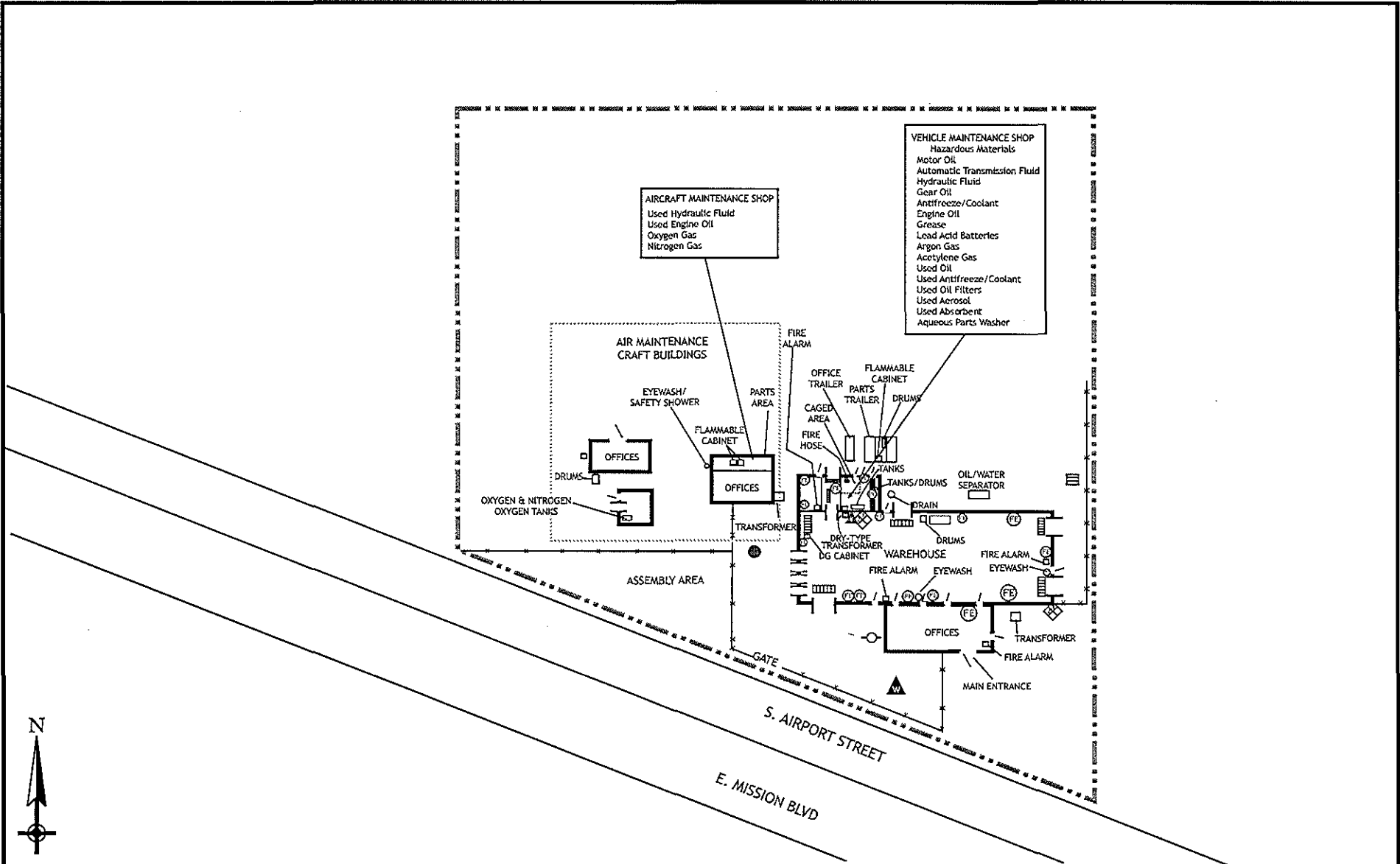
REV. NO.	DESCRIPTION	DATE
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2	ISSUED	12-2-04
3	ISSUED	12-2-04
4	ISSUED	12-2-04
5	ISSUED	12-2-04
6	ISSUED	12-2-04
7	ISSUED	12-2-04
8	ISSUED	12-2-04
9	ISSUED	12-2-04
10	ISSUED	12-2-04
11	ISSUED	12-2-04
12	ISSUED	12-2-04
13	ISSUED	12-2-04
14	ISSUED	12-2-04
15	ISSUED	12-2-04
16	ISSUED	12-2-04
17	ISSUED	12-2-04
18	ISSUED	12-2-04
19	ISSUED	12-2-04
20	ISSUED	12-2-04
21	ISSUED	12-2-04
22	ISSUED	12-2-04
23	ISSUED	12-2-04
24	ISSUED	12-2-04
25	ISSUED	12-2-04
26	ISSUED	12-2-04
27	ISSUED	12-2-04
28	ISSUED	12-2-04
29	ISSUED	12-2-04
30	ISSUED	12-2-04
31	ISSUED	12-2-04
32	ISSUED	12-2-04
33	ISSUED	12-2-04
34	ISSUED	12-2-04
35	ISSUED	12-2-04
36	ISSUED	12-2-04
37	ISSUED	12-2-04
38	ISSUED	12-2-04
39	ISSUED	12-2-04
40	ISSUED	12-2-04
41	ISSUED	12-2-04
42	ISSUED	12-2-04
43	ISSUED	12-2-04
44	ISSUED	12-2-04
45	ISSUED	12-2-04
46	ISSUED	12-2-04
47	ISSUED	12-2-04
48	ISSUED	12-2-04
49	ISSUED	12-2-04
50	ISSUED	12-2-04




- Gate 1
AIRBUS & B757
Power-in/Push-back
- Gate 2
MD11/10,B767,AIRBUS,B757
Power-in/Push-back
- Gate 3 & 4
MD11/10,B767,AIRBUS,B757
Power-in/Push-back
- Gate A-P
C208 parking
Power-in/Power-out
Unload/Load/Fuel
- Gate Y and Z
ATR42/72
Power-in/Power-out
Unload/Load/Fuel
- Unload/Load/Fuel
(Wing walker required)

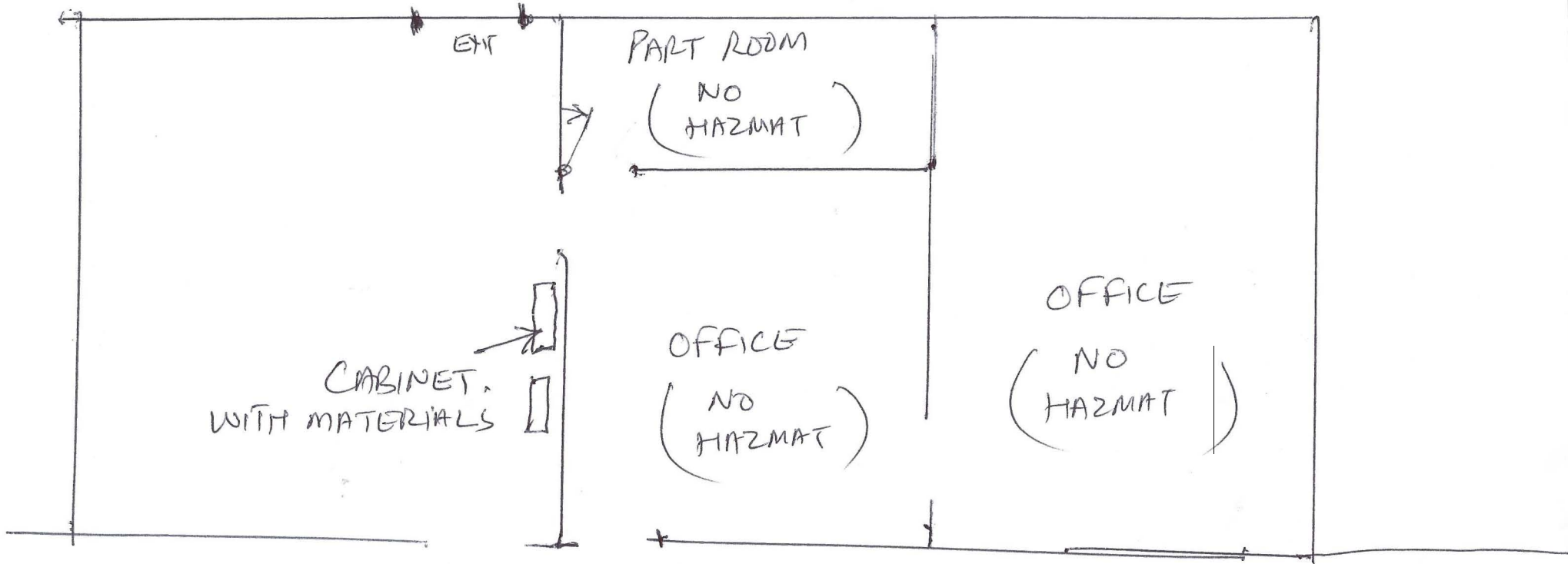
(X) = Drain
 contact = Andrea Jodlowska
 Primary (310) 422-3898 (909) 937-6067
 cell WORK
 Back up = Deanna Pizarro
 (909) 749-6535 (909) 937-6067
 cell WORK





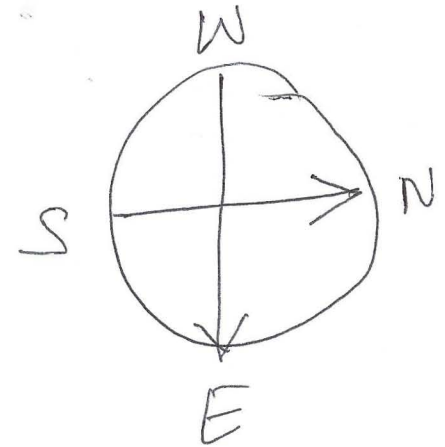
LEGEND			SITE PLAN	MAP	 BUREAU OF FIRE MARSHAL VERITAS
<ul style="list-style-type: none"> Approximate Subject Property Boundary Electrical Shutoff Water Shutoff Roll-up Door/Loading Dock Catch Basin 	<ul style="list-style-type: none"> Stairs Fire Extinguisher Door Fence Key Box 	<ul style="list-style-type: none"> Hydrant Gas Shut Off PIV 704 Codes Riser 	<p>OCCUPANT: Federal Express Corp-ONTR ADDRESS: 1801 E. Avion Street Ontario, California OCC.TYPE: Business STRUCTURE: Concrete</p> <p>Project No. 33113-013017.00</p>	<p>1</p> <p>0 175 Approximate Scale: Feet</p>	

PARKING LOT.



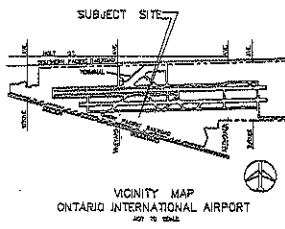
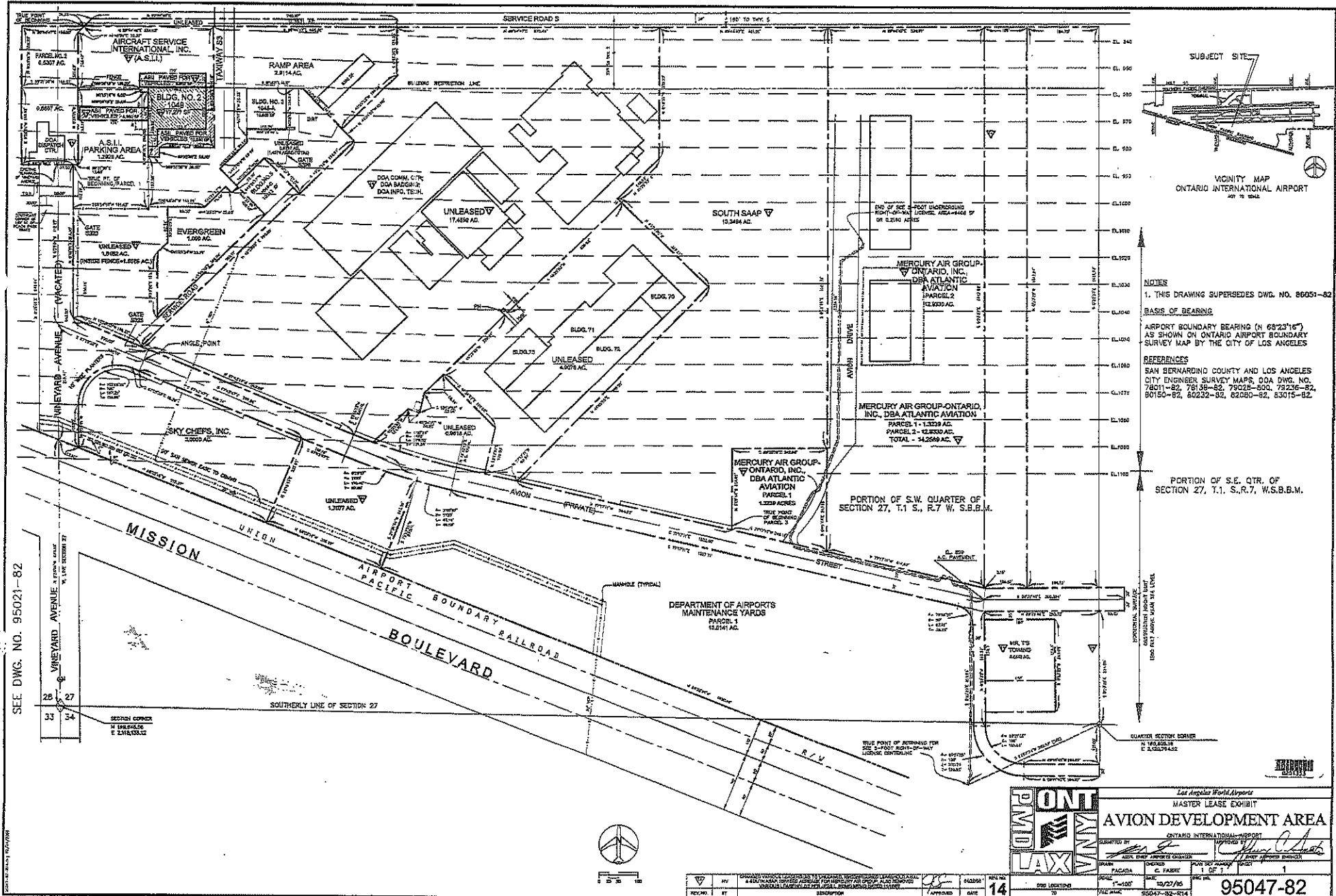
AMERIFLIGHT
2161 E. Avion Street

TO HANGER



AMERIFLIGHT LLC.

Cinco Air Charter
2161 E. Avion Street, building one



NOTES
1. THIS DRAWING SUPERSEDES DWG. NO. 86051-82

BASES OF BEARING
AIRPORT BOUNDARY BEARING (N 68°23'16") AS SHOWN ON ONTARIO AIRPORT BOUNDARY SURVEY MAP BY THE CITY OF LOS ANGELES

REFERENCES
SAN BERNARDINO COUNTY AND LOS ANGELES CITY ENGINEER SURVEY MAPS, ODA DWG. NO. 78011-82, 78100-82, 78200-82, 78216-82, 80150-82, 80232-82, 80280-82, 83015-82.

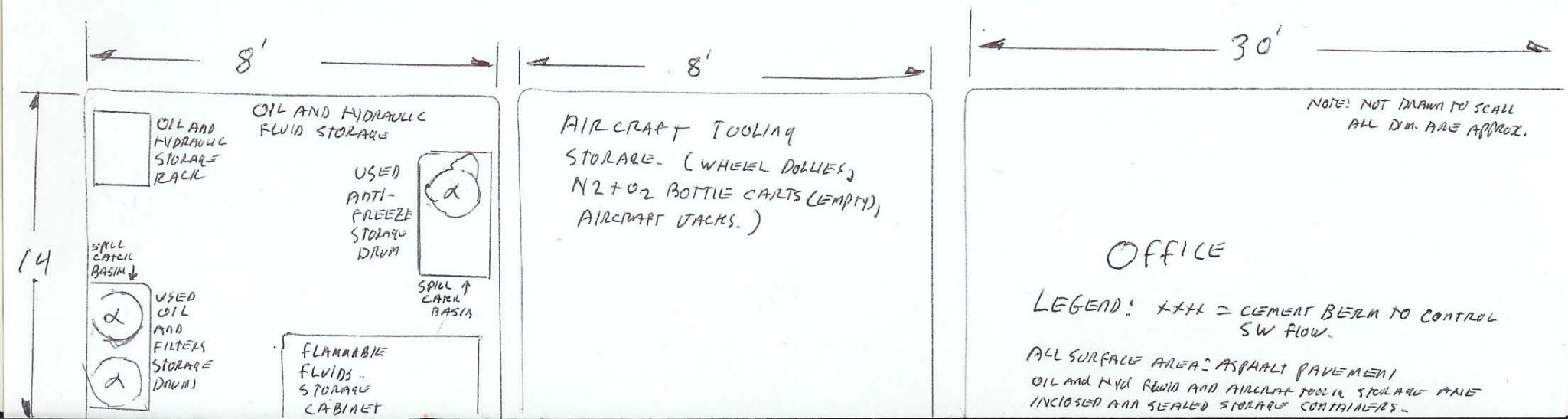
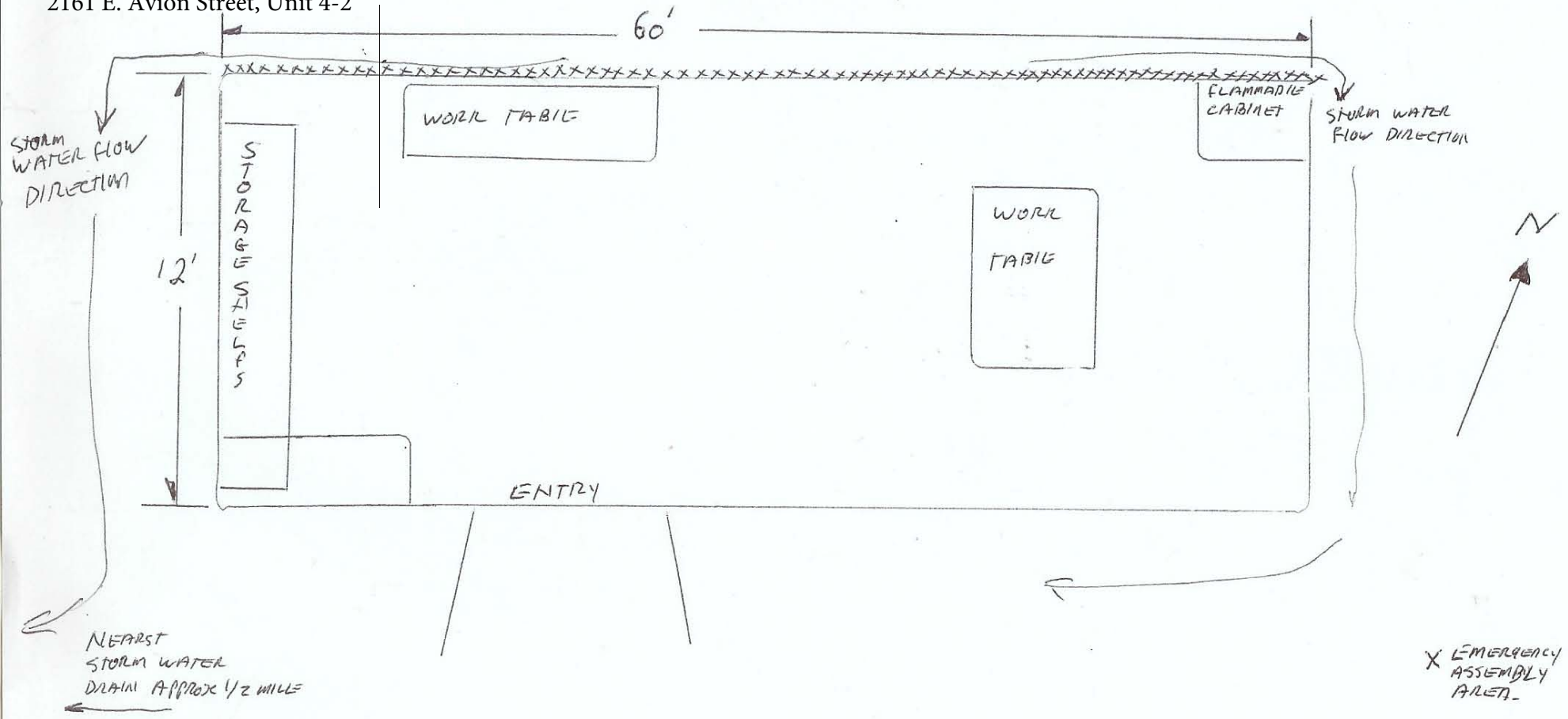
PORTION OF S.E. QTR. OF SECTION 27, T.1 S., R.7 W. S.B.M.

SEE DWG. NO. 95021-82

		Los Angeles World Airport MASTER LEASE EXHIBIT AVION DEVELOPMENT AREA	
SUBMITTED BY: <i>[Signature]</i> TITLE: <i>[Signature]</i>		DATE: 10/27/86 SCALE: 1"=100' FILE NO: 95047-82-014	
DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> DATE: 10/27/86	PROJECT NO: 14 SHEET NO: 14	95047-82	

JET PRO LINE MAINTENANCE
 2161 E. Avion Street, Unit 4-2

JETT PRO GSE LOCATION SITE MAP.





RAMP PAVEMENT

TANK-1 250 GALLON SUMP FUEL
TANK-2 250 GALLON USED OIL
TANK-3 120 GALLON MOTOR OIL

VEHICLE
PARKING
LOT

EQUIPMENT AND SUPPLIES
STORAGE CONTAINERS

MOBILE FUEL TRUCK
PARKING AREA FOR GSE
MAINTENANCE

PAVED
DRIVEWAY
AREA

GRASS

LEGEND

- 55 GALLON DRUM
- TANK
- △ SPILL RESPONSE EQUIPMENT



0 75'
APPROXIMATE SCALE IN FEET



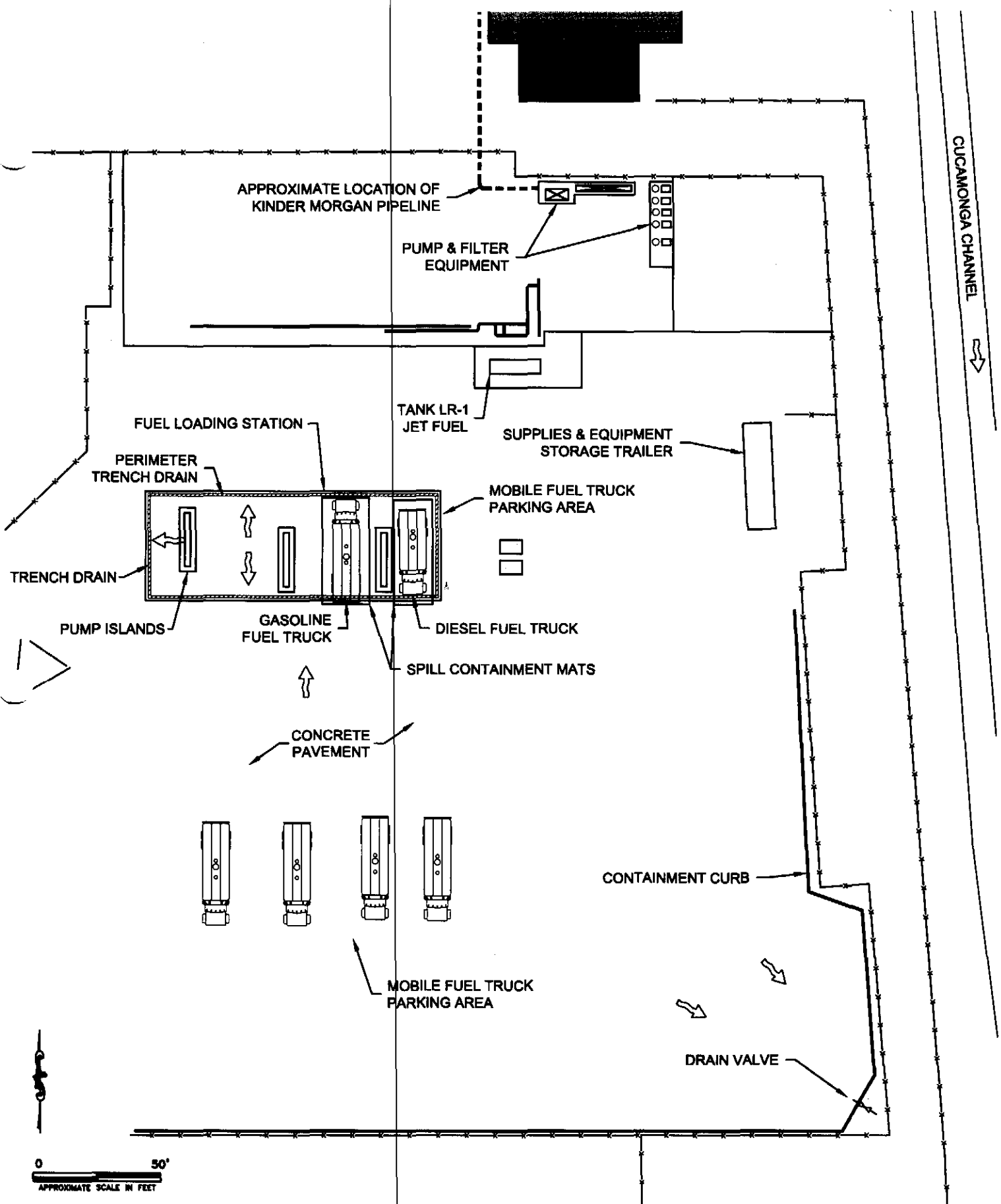
MADISON ENVIRONMENTAL GROUP
8A PORTER ROAD
BOXFORD, MA 01921

DRAWN BY: TSW

DATE: 10-25-2012

**FIGURE 3
GSE SHOP SITE MAP**

AIRCRAFT SERVICE INTERNATIONAL GROUP (ASIG)
ASIG BASE #480 - #542
ONTARIO INTERNATIONAL AIRPORT
1049 SOUTH VINEYARD
ONTARIO, CALIFORNIA 91761



FLOW DIRECTION
 SPILL RESPONSE EQUIPMENT

MADISON

 ENVIRONMENTAL GROUP

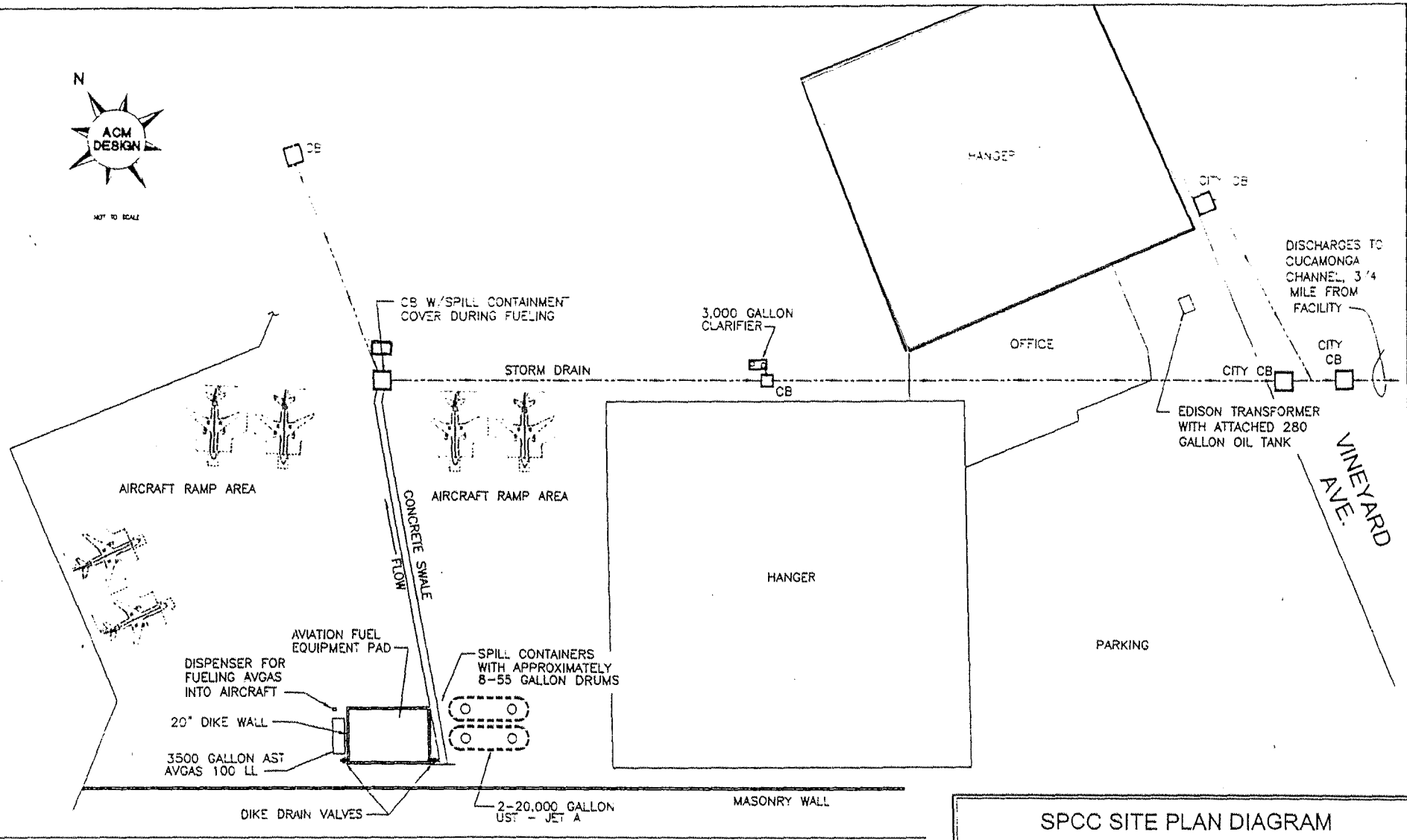
MADISON ENVIRONMENTAL GROUP
 8A PORTER ROAD
 BOXFORD, MA 01921

DRAWN BY: TSW
 DATE: 10-25-2012

FIGURE 4
FUEL LOADING STATION AND
MOBILE FUEL TRUCK PARKING MAP
 AIRCRAFT SERVICE INTERNATIONAL GROUP (ASIG)
 ASIG BASE #480 - #542
 ONTARIO INTERNATIONAL AIRPORT
 1049 SOUTH VINEYARD
 ONTARIO, CALIFORNIA 91761



NOT TO SCALE



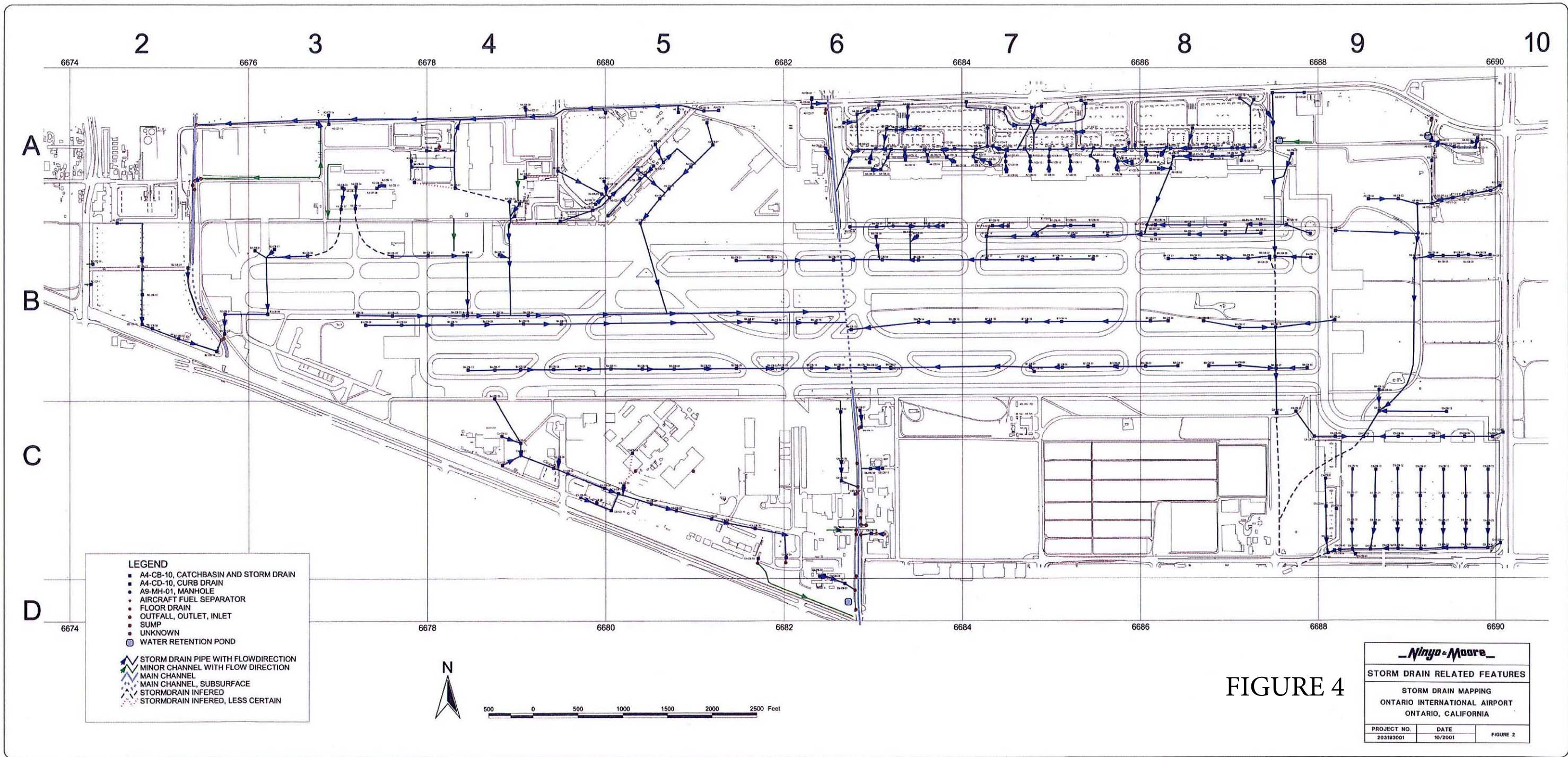
LEGEND
 — SURFACE FLOW
 - - - STORM DRAIN FLOW
 □ CATCH BASIN

AVION STREET

REVISIONS



SPCC SITE PLAN DIAGRAM			
GUARDIAN JET CENTER 1150 SOUTH VINEYARD AVENUE ONTARIO, CA AT ONTARIO INTERNATIONAL AIRPORT			
THOMAS HILL, INC. CONSULTING ENGINEERS NEWPORT BEACH, CALIFORNIA			
DATE 01/23/06	DRAWN BY ACM/SE	SCALE NONE	CHECKED BY TH



2 3 4 5 6 7 8 9 10

6674 6676 6678 6680 6682 6684 6686 6688 6690

A

B

C

D

6674 6678 6680 6682 6684 6686 6688 6690

- LEGEND**
- A4-CB-10, CATCHBASIN AND STORM DRAIN
 - A4-CD-10, CURB DRAIN
 - A9-MH-01, MANHOLE
 - AIRCRAFT FUEL SEPARATOR
 - FLOOR DRAIN
 - OUTFALL, OUTLET, INLET
 - SUMP
 - UNKNOWN
 - WATER RETENTION POND
 - STORM DRAIN PIPE WITH FLOW DIRECTION
 - MINOR CHANNEL WITH FLOW DIRECTION
 - MAIN CHANNEL
 - MAIN CHANNEL, SUBSURFACE
 - STORM DRAIN INFERED
 - STORM DRAIN INFERED, LESS CERTAIN

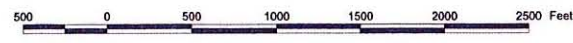


FIGURE 4

Ningo-Moore

STORM DRAIN RELATED FEATURES

STORM DRAIN MAPPING
ONTARIO INTERNATIONAL AIRPORT
ONTARIO, CALIFORNIA

PROJECT NO.	DATE	FIGURE 2
203193001	10/2001	

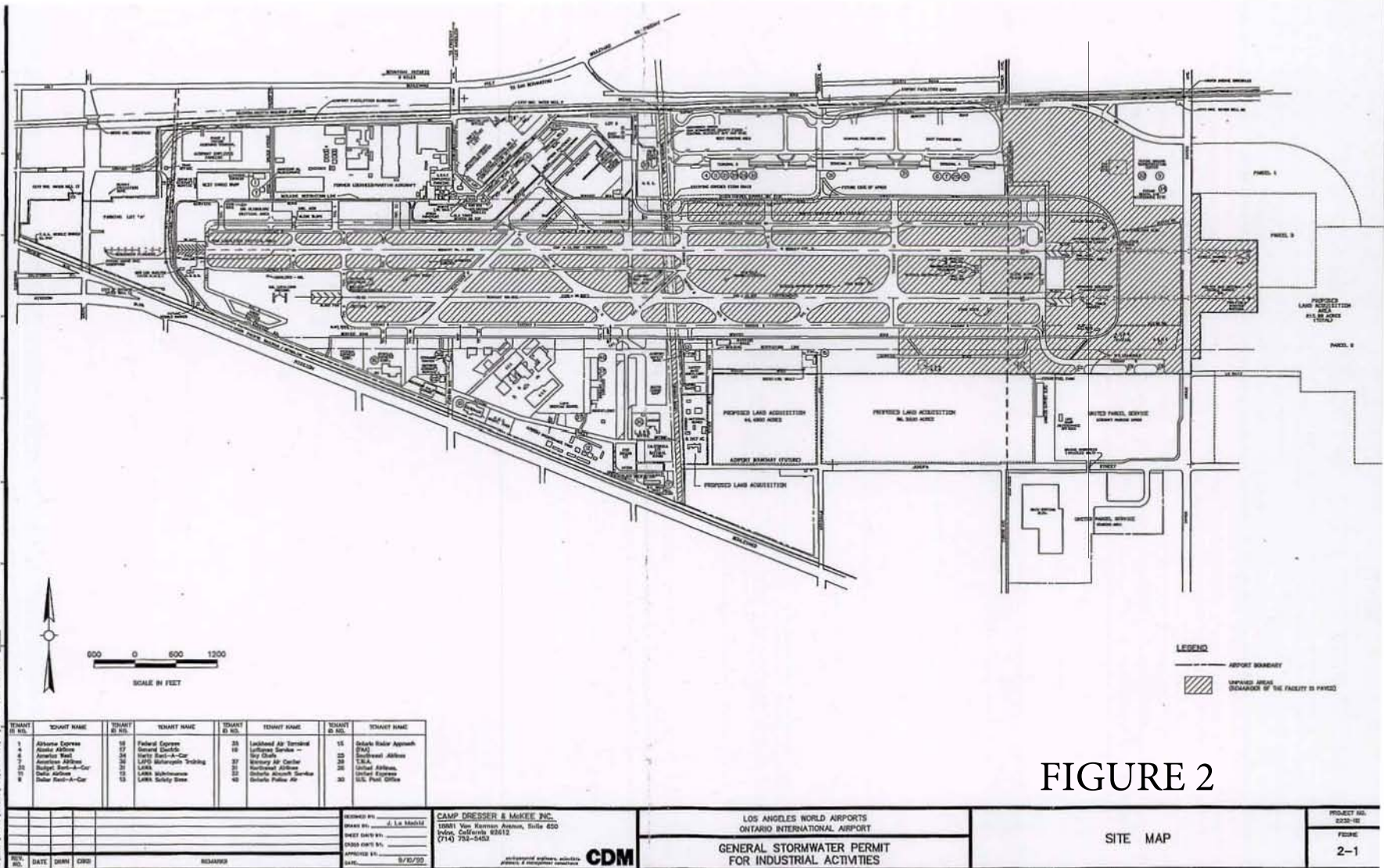
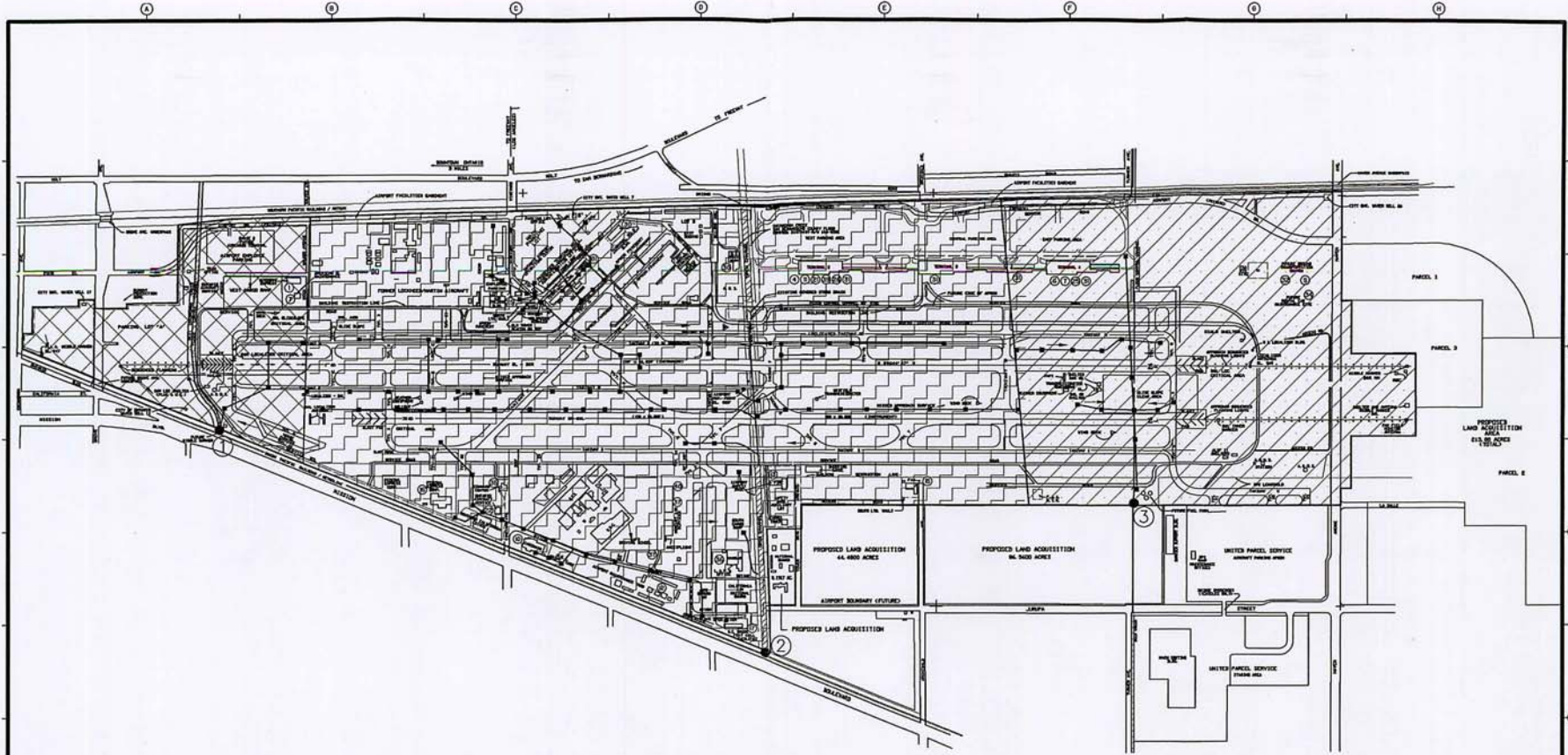


FIGURE 2

Section 2
Facility Description



TENANT ID NO.	TENANT NAME	TENANT ID NO.	TENANT NAME	TENANT ID NO.	TENANT NAME	TENANT ID NO.	TENANT NAME
1	Albama Express	16	Federal Express	20	Lockheed Air Terminal	13	Ontario Rotor Approach
4	Alaska Airlines	17	General Electric	21	Lithonia Service -	24	Southwest Airlines
5	American Airlines	18	Northwest Airlines	22	Manitoway Air Center	25	United Airlines
12	Boeing Rent-A-Car	19	LORD Motorcycles Training	23	Northwest Airlines	26	United Express
17	Delta Airlines	20	LARA Maintenance	24	Ontario Aircraft Service	27	U.S. Post Office
18	Delta Rent-A-Car	21	LARA Safety Base	25	Ontario Police Air	28	

LEGEND

- AIRPORT BOUNDARY
- OPEN DITCH
- STORM DRAIN
- CATCH BASIN
- ② ● DISCHARGE POINT FROM AIRPORT PROPERTY
- ▨ CHANNELS
- DIRECTION OF DRAINAGE FLOW
- ▧ WEST CUCAMONGHA CHANNEL DRAINAGE AREA
- ▩ CUCAMONGHA CHANNEL DRAINAGE AREA
- ▨ DEER CREEK DRAINAGE AREA

Scale: 0 600 1200

DESIGNED BY: J. La Mott	CAMP DRESSER & MCKEE INC. 18881 Van Kesteren Avenue, Suite 650 Irvine, California 92612 (714) 752-5452	LOS ANGELES WORLD AIRPORTS ONTARIO INTERNATIONAL AIRPORT GENERAL STORMWATER PERMIT FOR INDUSTRIAL ACTIVITIES	STORMWATER CONVEYANCE SYSTEM AND DISCHARGE POINTS	PROJECT NO. 2332-12
DATE: 9/30/92				FIGURE 2-3

#A:\2332\26456\plan\000\ 09/29/92 13:49 Plottman 33EES: BMSZ-DIG

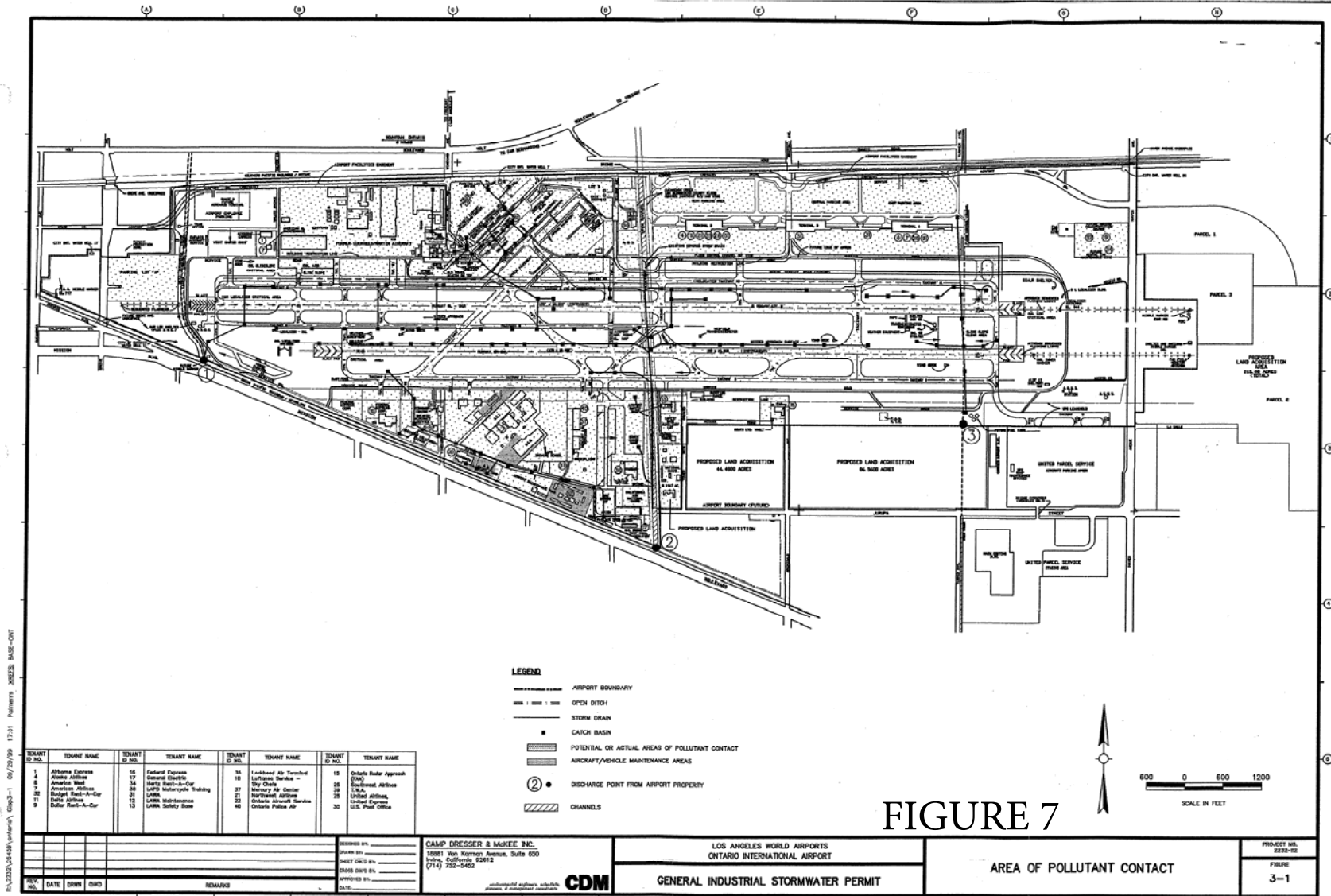


FIGURE 7

P:\2023\24-08\24-08\24-08.dwg 06/29/24 17:31 Plotname: ASSES_BMS-ONT

TENANT ID NO.	TENANT NAME	TENANT ID NO.	TENANT NAME	TENANT ID NO.	TENANT NAME	TENANT ID NO.	TENANT NAME
1	Alabama Express	16	Federal Express	35	Lockheed Air Terminal	19	Ontario State Approach (SA)
2	American Airlines	17	General Electric	36	Lyft	20	Truckee Airlines
3	America West	18	Hertz Rent-A-Car	37	Ray Chalk	21	U.S.A.
4	American Redcross	19	LAM	38	Northwest Airlines	22	United Airlines
5	Budget Rent-A-Car	20	LARA Maintenance	39	Ontario Airport Services	23	United Express
6	Delta Airline	21	LARA Safety Base	40	Ontario Public AD	24	U.S. Post Office
7	Dollar Rent-A-Car	22					

REV. NO.	DATE	DRWN	CRD	REMARKS

DESIGNED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 CROSS CHECKED BY: _____
 APPROVED BY: _____

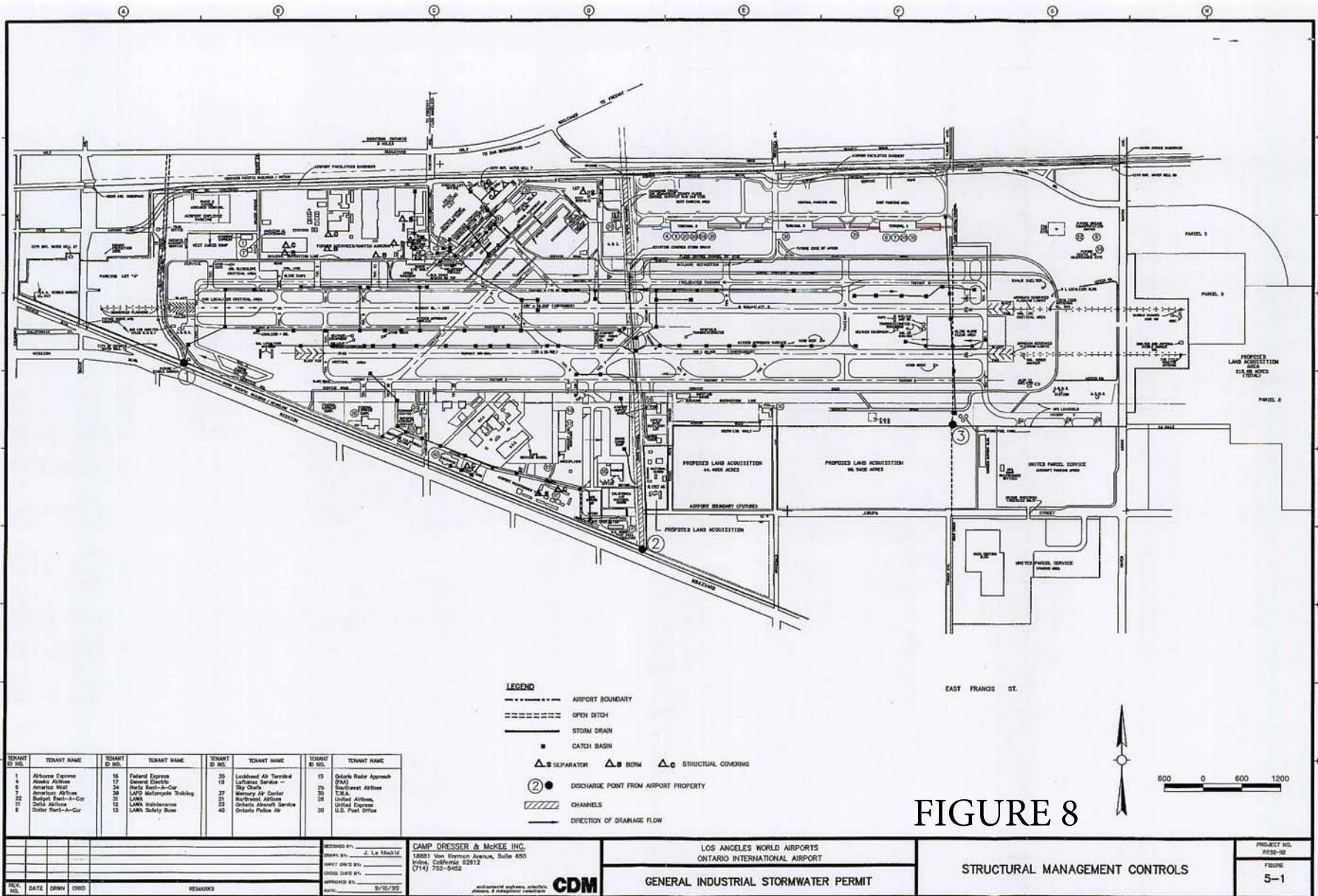
CAMP DRESSER & MCKEE INC.
 18081 Van Hornes Avenue, Suite 600
 Industry, California 92646
 (714) 752-5452

LOS ANGELES WORLD AIRPORTS
 ONTARIO INTERNATIONAL AIRPORT

CDM GENERAL INDUSTRIAL STORMWATER PERMIT

AREA OF POLLUTANT CONTACT

PROJECT NO. _____
 SHEET NO. _____
 FIGURE 3-1



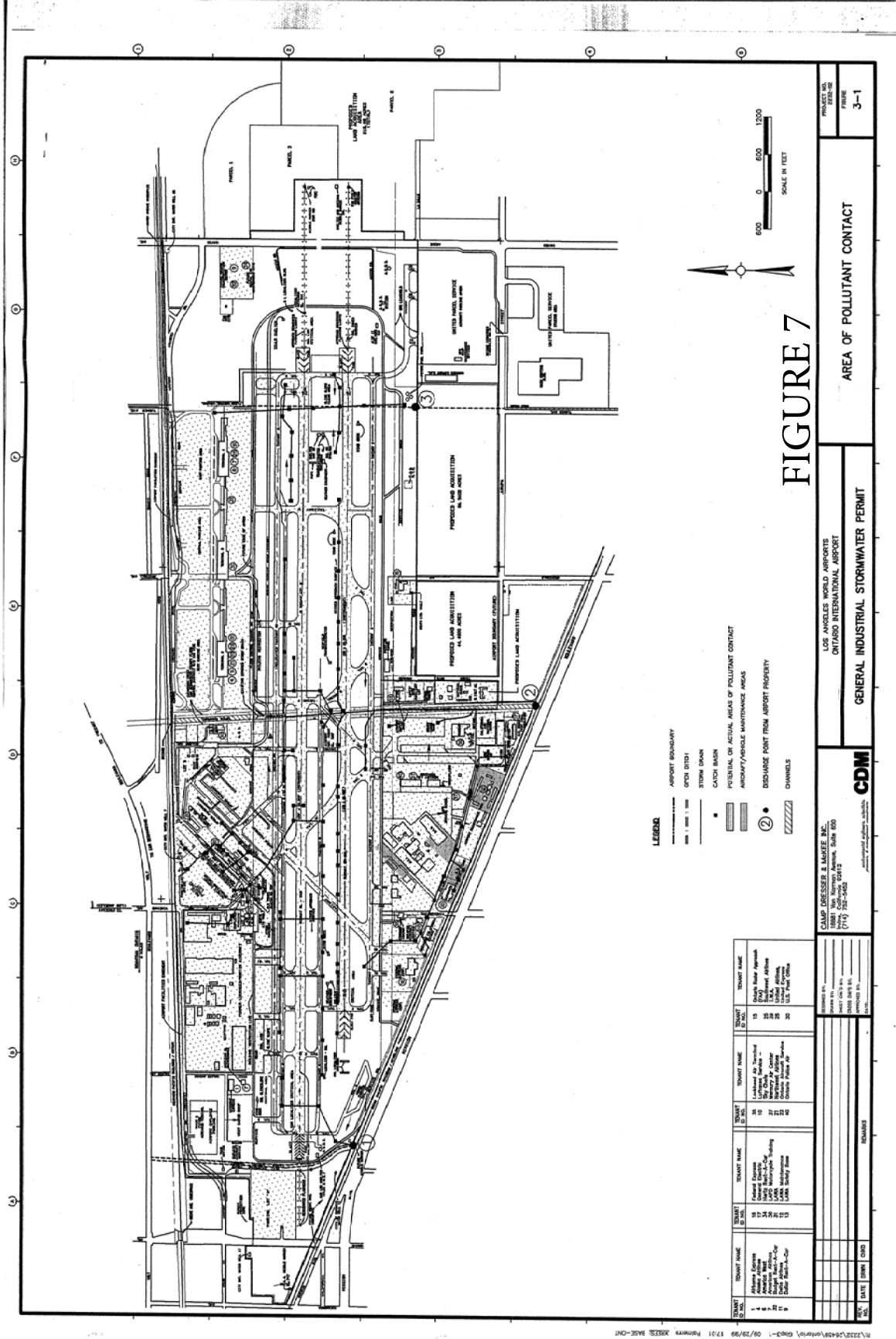


FIGURE 7
AREA OF POLLUTANT CONTACT

- LEGEND**
- AIRPORT BOUNDARY
 - OPEN DITCH
 - STORM DRAIN
 - CATCH BASIN
 - ▨ POLLUTANT OR ACTUAL AREAS OF POLLUTANT CONTACT
 - ▨ AIRCRAFT/GARAGE MAINTENANCE AREAS
 - ② DISCHARGE POINT FROM AIRPORT PROPERTY
 - ▨ CHANNELS

TENANT NAME	TENANT NAME	TENANT NAME	TENANT NAME	TENANT NAME	TENANT NAME	TENANT NAME	TENANT NAME
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express
Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express	Alphamex Express

PROJECT NO.
DATE
PAGE
3-1

CDM

GENERAL INDUSTRIAL STORMWATER PERMIT

LOS ANGELES WORLD AIRPORTS
ONTARIO INTERNATIONAL AIRPORT

Section 2
Facility Description

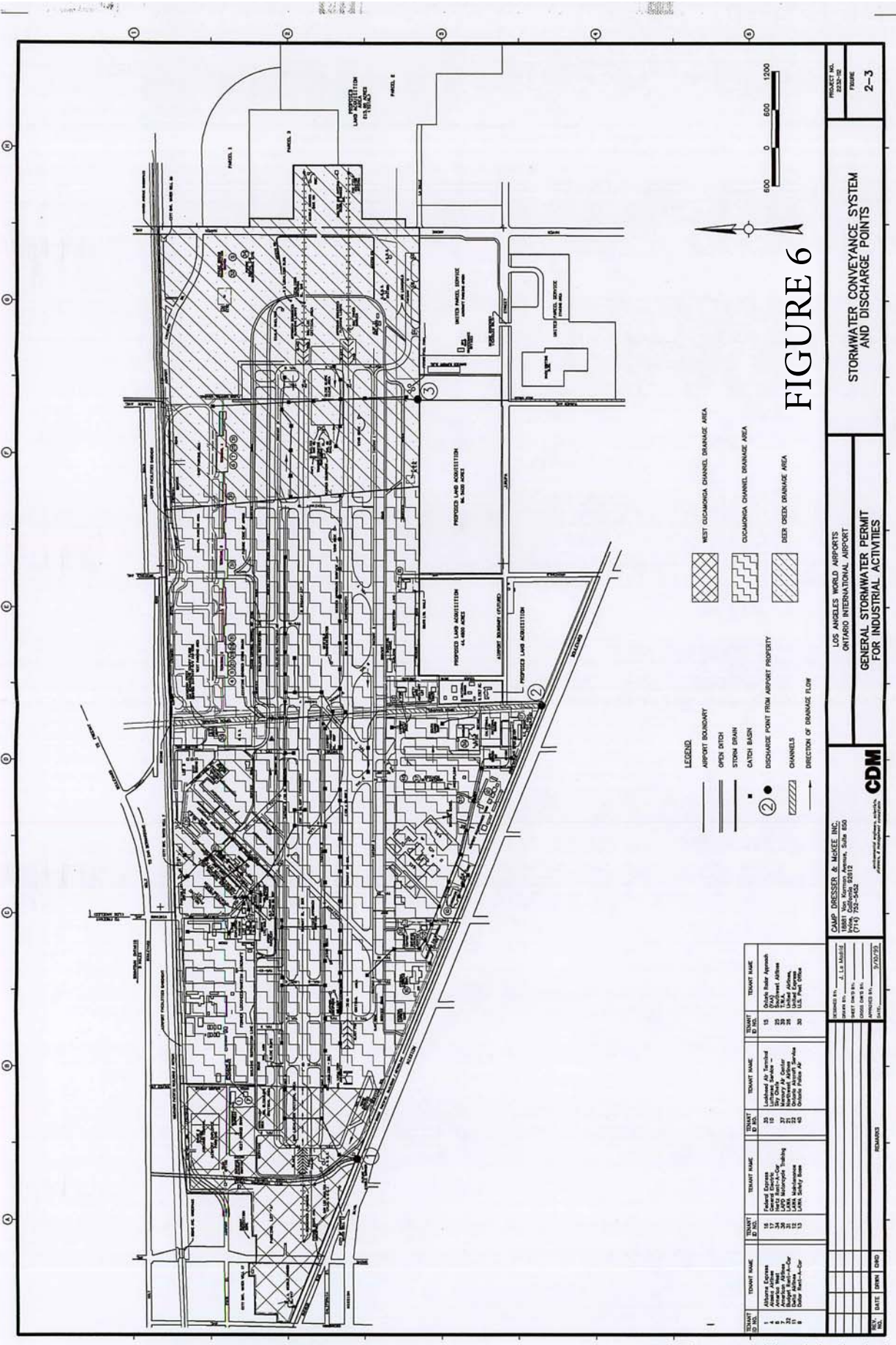


FIGURE 6

<p>LOS ANGELES WORLD AIRPORTS ONTARIO INTERNATIONAL AIRPORT GENERAL STORMWATER PERMIT FOR INDUSTRIAL ACTIVITIES</p>		<p>PROJECT NO. 2221-102</p> <p>FIGURE 2-3</p>
<p>CDM</p> <p>CDM, CROSSER & MAKEE, INC. 17000 Van Nuys Blvd., Suite 200 Van Nuys, California 91412 (818) 709-9424</p>		<p>DESIGNED BY: J. L. KASSELL</p> <p>CHECKED BY: [Signature]</p> <p>DATE: 9/29/09</p>

Ontario International Airport – Storm Water Pollution Prevention Plan
September 2013 Update

Appendix B: ONT Tenant Pollution Prevention Team

Address	Tenant	PPT Contact/ Alternate	Title	Phone Number
1800 E Airport	Majestic Terminal Service	Jennifer Johnson Gordillo (primary)	Manager Chief	(909) 937-2580
		Henrieta Katoa (alternate)	Assistant Chief	(909) 937-2580
	Southwest	Adam Walters (primary)	Sr. Environmental Specialist	(214) 792-4615, (214)708-3881
		Tony Di Luccia (alternate)	Not Listed	(909) 937-1696, (909) 917-3532
2500 E. Airport Dr, Ste 1259	Delta Airlines	Lance Johnson (primary)	Station Manager	(909) 605-7370, (951) 310-7497
		Terri Proffitt (alternate)	Performance Leader	(909) 605-7371, (909) 214-5034
		Liza Klemmscanga (alternate)	Customer Service Agent	(909) 605-7373
2500 E. Airport Dr.	Alaska Air	Pete Moreno (primary)	DGS, Supervisor	(909) 605-7391, (909) 767-9788
		Michael Pettigrew (alternate)	DGS, Station Manager	(909) 605-7390, (909) 214-2074
	Skywest	Tufi Naea (primary)	General Manager	(909) 605-2200
		Toby Steele (alternate)	Program Lead Environment	(310) 386-7839
2900 E. Airport Dr., Ste 1245	US Airways/American Airlines	Joisanne Dailey (primary)	Compliance Coordinator	(909) 937-8240
		Sherrie Cairns (alternate)	General Manager	(909) 937-8800
		Patti Smetzer (alternate)	General Manager	(909) 937-8440
2900 E. Airport Dr., Ste 1428	ATS GSE	Patti Smetzer (primary)	General Manager	(909) 937-8440
		Matt Baker (alternate)	Manager Ramp	(909) 937-8441
1801 Avion Street	FedEx	Andrea Jodlowski (primary)	Manager	(909) 257-9042, (909) 937-8240, (909) 937-6067, (310) 422-3898
		Deanna Pizarro (alternate)	Not Listed	(909) 937-6067, (909) 749-6535
2161 E Avion Street	Ameriflight	Bikram Singh (primary)	Supervisor	(818) 389-8863
		Dustin Johnson (alternate)	Mechanic?	(818) 389-8863
2161 E Avion Street, Building 1	Cinco Air Charter	Tim Nordine (primary)	DOM	(909) 393-9036
		Rick Demarinis (alternate)	Chief Inspector	(909) 393-9036
2161 E. Avion Unit 4-2	Jett Pro Line Maintenance	Richard Rittmiller (primary)	Station Manager	(909) 518-0015
		Andy Quintero (alternate)	GSE Technician	(909) 519-7718

Appendix B: ONT Tenant Pollution Prevention Team

Address	Tenant	PPT Contact/ Alternate	Title	Phone Number
2161 E. Avion Unit 4-2	Jett Pro Line Maintenance	Richard Rittmiller (primary)	Station Manager	(909) 518-0015
		Andy Quintero (alternate)	GSE Technician	(909) 519-7718
2161 E. Avion, Hangar 2	Jet Systems International	Darioush Khatibi (primary)	Project Manager	(909) 531-4287
		Nader SarKhosh (alternate)	General Manager	(909) 400-5387
1049 S. Vineyard	Aircraft Service International Group	Gabe Robiatti (primary)	Facility Manager, Maintenance & Operations 480	(909) 937-3486
		Anthony Medina (alternate)	Maintenance & Operations Supervisor	(909) 821-1975
1150 S. Vineyard	Guardian Jet Center	Veronica Marquez (primary)	Line Service Supervisor	(909) 605-6366
		Hugo Armus (alternate)	Line Service Agent	(909) 605-6366

APPENDIX C

Training Records

APPENDIX D

Spills and Leaks within the Previous Five-Year Period

Table 3-1
Hazardous Materials Spills Occurring From July 2014 through June 2015
Ontario
2015 Update

Date	Tenant	Location	Hazardous Material	Quantity Spilled (Gallons)	Estimated Area Covered (Sq. Ft.)	Cleanup Method
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Table 3-1
Hazardous Materials Spills Occurring From July 2013 through June 2014
Ontario
2014 Update

Date	Tenant	Location	Hazardous Material	Quantity Spilled (Gallons)	Estimated Area Covered (Sq. Ft.)	Cleanup Method
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Table 3-1
Hazardous Materials Spills Occurring From July 2012 through June 2013
Ontario
2013 Update

Date	Tenant	Location	Hazardous Material	Quantity Spilled (Gallons)	Estimated Area Covered (Sq. Ft.)	Cleanup Method
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Table 3-1
Hazardous Materials Spills Occurring From July 2011 through June 2012
Ontario
2012 Update

Date	Tenant	Location	Hazardous Material	Quantity Spilled (Gallons)	Estimated Area Covered (Sq. Ft.)	Cleanup Method
7/16/2011	American Airlines - Passenger Terminal	American Airlines Terminal Gate 410	Fuel - Jet A	3		Dryzit
11/17/2011	Aircraft Service International Group - ASIG Fuel Farm	ASIG Fuel Farm	Fuel - Jet A	400		Dryzit and vacuum truck.
6/22/2012	United Airlines / United Express - United Airlines / United Express	United Airlines Terminal Gate 207	Fuel - Jet A	20		Dryzit
6/29/2012	Guardian Air - Former SCE Hangar and Ramp and New Hangar	Guardian Jet Center ramp	Fuel - Jet A	30		Dryzit and vacuuming out fuel trapped in the clarifier.

Table 3-1
Hazardous Materials Spills Occurring From July 2010 through June 2011
Ontario
2011 Update

Date	Tenant	Location	Hazardous Material	Quantity Spilled (Gallons)	Estimated Area Covered (Sq. Ft.)	Cleanup Method
11/30/2010	Los Angeles World Airports - Construction and Maintenance Yard	Maintenance Facility 2132 E Avion Dr., Fueling Station	Gasoline	4	100	Bioreem 2000 and Dry-zit
1/17/2011	Aircraft Service International Group - ASIG Fuel Farm	495 S Hellman, ASIG Fuel Farm	Jet-A	50	500	Dry-zit
1/25/2011	Aircraft Service International Group - ASIG Fuel Farm	ASIG Fuel Farm	AV Gas	5	20	Dry-zit

APPENDIX E

BMP Fact Sheets

SC1		ELIMINATION OF NON-STORM WATER DISCHARGES TO STORM DRAINS	
PURPOSE:	<p>Existing discharges: Eliminate non-storm water discharges to the storm water collection system. Non-storm water discharges can be classified as follows: 1) <i>Activity-based</i> (subtle), and 2) <i>Overt</i> (hard pipe connection). Activity-based non-storm water discharges may include: wash water, deicing fluids, and spillage. Overt non-storm water discharges may include: process wastewater, treated cooling water, and sanitary wastewater.</p> <p>Prevention of illicit connections: Prevent improper physical connections to the storm drain system from sanitary sewers, floor drains, industrial process discharge lines, and wash racks through education, developing project approval conditions, and performing both construction phase and post-construction inspections.</p>	TARGETED ACTIVITIES	<ul style="list-style-type: none"> All Maintenance All Fueling All Washing Equipment Cleaning Cargo Handling All Storage Painting/Stripping Floor Washdowns Aircraft Deicing/Anti-Icing Garbage Collection Aircraft Lavatory Service Fire Fighting Equip. Testing Potable Water System Flush Runway Rubber Removal
GENERAL APPROACH:	<p>Identification of <i>Activity-Based (Subtle) Discharges:</i></p> <p>The following techniques may be used to identify activity-based non-storm water discharges to the storm water collection system:</p> <ul style="list-style-type: none"> ■ Perform frequent activity inspections to identify non-storm water discharges - stagger inspection times to cover all work periods. ■ Perform visual inspections of discharge points to the storm drain system - observe uncharacteristic volumes, colors, turbidity, odors, deposition, staining, floatables, and foaming characteristics of any flow. 	TARGETED POLLUTANTS	<ul style="list-style-type: none"> Oil and Grease Vehicle Fluids Fuel Solvents/Cleaning Sol. Deicing/Anti-Icing Fluid Battery Acid Pesticides/Herbicides/ Fertilizers Paint Aircraft Fire Fighting Foam Metals Dumpster Wastes Sediment Landscape Waste Floatables Lavatory Chem. Wastes Potable Water System Chemicals Rubber Particles
APPROACH TO FUTURE FACILITIES AND UPGRADES:	<p>Design of New Facilities and Existing Facility Upgrades</p> <ul style="list-style-type: none"> ■ Perform inspections during the design review and project construction phases to ensure drainage, wastewater, and water supply connections are correct (no cross connections or illicit hookups). ■ Develop a set of as-built prints for all projects. Keep a set of the prints at the facility. ■ Design projects to include adequate waste repositories at locations near waste origin points. ■ Provide adequate and appropriately designed facilities for functions such as steam cleaning, degreasing, painting, mechanical maintenance, chemical/fuel storage and delivery, material handling, waste handling and storage, lavatory service, and food preparation. 	KEY APPROACHES	<ul style="list-style-type: none"> Perform inspections and enforcement Provide training for employees Promote education of vendors/public

SC1

**ELIMINATION OF NON-STORM WATER
DISCHARGES TO STORM DRAIN**

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

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

Contingency Response

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

Inspection and Training

- Inspect waste containers frequently for leaks and proper closure seal.
- Develop employee training programs which emphasize the proper disposal procedures for operations-derived wastes.
- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.

REQUIREMENTS:

- Capital and O&M costs associated with the elimination of non-storm water discharges can be high.

LIMITATIONS:

- Storm drain documentation for many facilities is not up-to-date.
- Activity-based (subtle) non-storm water discharges from a particular facility are typically sporadic, transient, and often require frequent inspections to detect.

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 110.3 Discharge of Oil
.40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC2	AIRCRAFT, GROUND VEHICLE AND EQUIPMENT MAINTENANCE
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water from aircraft, vehicle, and equipment maintenance and repair, including ground vehicle and equipment painting/stripping and floor washdowns.</p>	<p style="text-align: center;">TARGETED ACTIVITIES</p> <p>Aircraft Maintenance</p> <p>Vehicle Maintenance</p> <p>Equipment Maintenance</p>
<p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Provide covered maintenance areas when designing new facilities or upgrading existing facilities. Utilize indoor areas, lean-tos, or portable covers. ■ Locate outdoor maintenance areas so minimal quantities of runoff cross the site. ■ Include appropriate storm water quality structures (oil/water separators, sumps, first flush diversion basins, etc. - see TC-1 for further information regarding treatment control BMPs) in the design of outdoor maintenance areas. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <p>Implement the following to the maximum extent practicable.</p> <p><i>Good Housekeeping</i></p> <ul style="list-style-type: none"> ■ Use drip pans. ■ Use absorbent materials at potential problem areas. Adequately collect/remove absorbent materials from area after use and dispose of them in an appropriate manner. ■ Drain and crush oil filters (and oil containers) before recycling or disposal. Store crushed oil filters and empty lubricant containers in a leak-proof container - covered if outdoors. ■ Label storm drain inlets to indicate they are to receive no wastes. Do not hose down work areas to the storm drainage system or use concrete cleaning products unless the storm drain inlet is blocked and wash water is collected and properly disposed of through a permitted sewer connection. As an alternative, use mops, dry sweeping compound, or contract professional cleaning services. Confirm the use of appropriate disposal practices by contract cleaning services. ■ Drain and properly dispose of all fluids and remove batteries from salvage aircraft, vehicles, and equipment. 	<p style="text-align: center;">TARGETED POLLUTANTS</p> <p>Oil and Grease</p> <p>Vehicle Fluids</p> <p>Solvents/Cleaning Solutions</p> <p>Fuel</p> <p>Battery Acid</p> <p>Paint</p>
	<p style="text-align: center;">KEY APPROACHES</p> <p>Conduct maintenance indoors, or in covered area.</p> <p>Prevent wash water discharges to the storm drain</p> <p>Clean catch basins regularly</p> <p>Collect and properly dispose of all fluids</p>

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SC2	AIRCRAFT, GROUND VEHICLE AND EQUIPMENT MAINTENANCE
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Good Housekeeping, cont.

- Recycle or properly dispose of the following: greases, oils, antifreeze, brake fluid, cleaning solutions, hydraulic fluid, batteries, transmission fluid, and filters.
- Use biodegradable products and substitute materials with less hazardous properties where feasible.

Physical Site Usage

- Where feasible, move maintenance activities indoors or provide cover over work area.
- Use designated washing, steam cleaning, and degreasing areas to clean equipment.
- Store mechanical parts and equipment that may yield even small amounts of contaminants (e.g., oil or grease) under cover and away from drains.

Structural Controls

- Equip maintenance and cleaning areas with runoff controls that prevent discharge to storm sewers.
- Install and maintain catch basin filter inserts that assist in the removal of oil and grease, sediments and floatables.

Maintenance

- Maintain clean equipment by eliminating excessive amounts of external oil and grease buildup. Use water-based cleaning agents or non-chlorinated solvents to clean equipment.
- Regularly clean any catch basins that receive runoff from a maintenance area, especially after larger storms.
- Inspect, clean and maintain sump and oil/water separators, if necessary.

Contingency Response

- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.
- Furnish all maintenance vehicles with adequate supplies of spill response materials and appropriate spill response procedures.

Inspection and Testing

- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.
- Provide employee storm water quality awareness training.
- Develop regular maintenance and inspection programs for oil/water separators.
- Characterize wastes collected from oil/water separators. Provide appropriate employee training.

REQUIREMENTS:

- Capital and O&M costs should be low but will vary depending on the size of the facility. Costs associated with diversion basins can be high.
- Maintenance costs should be low.

SC2

**AIRCRAFT, GROUND VEHICLE AND
EQUIPMENT MAINTENANCE**

LIMITATIONS:

- Size, space and time limitations may preclude all work being performed indoors.
- Identification of engine and equipment leakage points may require the use of solvents or other cleaners to remove external accumulations of oily grime.

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 110.3 Discharge of Oil
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm Water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC3 AIRCRAFT, GROUND VEHICLE, AND EQUIPMENT FUELING	
<p>PURPOSE:</p> <p>Prevent fuel spills and leaks, and reduce their impacts to storm water.</p>	<p>TARGETED ACTIVITIES</p> <p>Aircraft Fueling</p> <p>Vehicle Fueling</p> <p>Equipment Fueling</p>
<p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Design fueling areas to prevent the run-on of storm water and the runoff of spills by employing the following approaches: <ul style="list-style-type: none"> - Cover the fueling area if possible. - Use a perimeter drain or slope the fueling area to a dead-end sump or oil/water separator. - Pave the fueling area with concrete rather than asphalt. ■ If storm water runoff from fueling areas is not collected, install an appropriately sized oil/water separator. Regulatory agency approvals are required. ■ Install and maintain vapor recovery systems where required and/or appropriate. ■ Existing underground fuel storage tanks should be upgraded with leak detection, spill containment, and overfill protection in advance of December 22, 1998, the federal regulatory deadline. This is relevant to storm water regulations due to the potential for contamination of surface soils or waters that could be transported by storm water runoff. ■ Design facilities to include secondary containment where required and/or appropriate. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p><i>Operational Considerations</i></p> <p>Implement the following to the maximum extent practicable.</p> <p><i>Good Housekeeping</i></p> <ul style="list-style-type: none"> ■ Fuel pumps intended for vehicular use (not aircraft) should be posted with signs stating "No Topping Off" to prevent overflow. ■ Use absorbent materials and spot cleaning for small spills; do not hose down the area unless the storm drain is blocked and drainage is collected by vacuum truck and disposed of through a permitted connection to the sanitary sewer. ■ Properly dispose of any fuel spills and leaks. Vacuum equipment/trucks are recommended for collection. Always dispose of materials in an approved manner; use an approved treatment facility through a permitted connection. Never discharge materials to a catch basin or storm drain. 	<p>TARGETED POLLUTANTS</p> <p>Fuel</p> <p>KEY APPROACHES</p> <p>Install berms or curbing around fueling areas</p> <p>Use absorbent materials and/or vacuum equipment for spills</p> <p>Install proper equipment for fuel dispensing and tank monitoring to prevent spills, leaks and overflows</p>

SC3**AIRCRAFT, GROUND VEHICLE AND EQUIPMENT FUELING***Good Housekeeping (contd.)*

- Use pigs/mats over catch basins during fueling activity.
- Manage the disposal of water that collects in fuel tanks and fueling hydrant sumps according to state and federal regulations.

Physical Site Usage

- Avoid mobile fueling of equipment wherever feasible; fuel equipment at designated fueling areas.

Structural Controls

- Cover the fueling area if possible.
- Divert storm water runoff away from fueling area to avoid storm water contact with contaminated surfaces through the use of berms or curbing.
- Install gate valves at catch basins for use during fueling activity.
- Employ secondary containment or cover when transferring fuel from a tank truck to a fuel tank.

Equipment

- Provide appropriate monitoring for tanks containing fuel, such as:
 - Level indicators and gauges.
 - Overfill protection with alarms.
 - Interstitial leak detection for double-walled tanks.
 - Routine inspection/lockout for drainage valves for tank containment areas.
- Fuel dispensing equipment should be equipped with "breakaway" hose connections that will provide emergency shutdown of flow should the fueling connection be broken through movement.
- Automatic shut-off mechanisms should be in place on fuel tankers. These valves should remain in the closed position unless manually opened during fueling.

Maintenance

- Inspect, clean and maintain sumps and oil/water separators at appropriate intervals.

Contingency Response

- Develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan if required under guidelines set forth in 40 CFR, Sections 112.3(a), (b).
- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.
- Furnish adequate spill response information, equipment and materials on all fueling vehicles.

Inspection and Training

- Inspect fueling areas and storage tanks regularly. Record all maintenance activities and inspections relating to fueling equipment and containers in a logbook.
- Underground fuel storage tanks should be tested as required by federal and state laws. Provide the appropriate level of spill response training to personnel to address all types of potential spills.

SC3	AIRCRAFT, GROUND VEHICLE, AND EQUIPMENT FUELING
REQUIREMENTS: <ul style="list-style-type: none">■ The cost of retrofitting existing fueling areas to minimize storm water contamination can be high. Practical design concepts such as incorporating extruded curb along the upstream side of facilities to prevent run-on of storm water can be of modest cost.	
LIMITATIONS: <ul style="list-style-type: none">■ Properly sized and installed oil/water separators must be regularly maintained to be effective (see TC-1 for a description of management practices relating to oil/water separator operations and maintenance).	
RELEVANT RULES AND REGULATIONS: <p>Industrial Activities Storm Water General Permit, April 17, 1997 .40 CFR 110.3 Discharge of Oil .40 CFR 112 Oil Pollution Prevention (SPCC OPA/Plans) .40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance .40 CFR 122-124 NPDES Regulations for Storm Water Discharge .40 CFR 401 Effluent Limitation Guidelines</p>	

SC4	AIRCRAFT, GROUND VEHICLE AND EQUIPMENT WASHING
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water drains from aircraft, vehicle, and equipment washing, and equipment degreasing.</p>	<p>TARGETED ACTIVITIES</p> <p>Aircraft Washing</p> <p>Vehicle Washing</p> <p>Equipment Washing</p> <p>Equipment Degreasing</p>
<p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Consider off-site commercial washing where feasible. Using appropriate off-site facilities will decrease the waste generated on-site. ■ Consider incorporating a wash water recycling system into the project design. ■ Outdoor washing operations should have the following design characteristics: <ul style="list-style-type: none"> - Paved with Portland cement concrete. - Bermed and/or covered (if feasible) to prevent contact with storm water. - Sloped to facilitate wash water collection. - Wash water should be collected in a dead-end sump for removal or discharged to the sanitary sewer through a permitted connection. - Discharge piping serving uncovered wash areas should have a positive shut-off control valve that allows switching between the storm drain and the sanitary sewer. - Clearly designated. - Equipped with an oil/water separator designed to operate under storm water runoff conditions (treat storm water volumes and flow rates). Regulatory agency approvals are required. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <p>Implement the following to the maximum extent practicable.</p> <p><i>Good Housekeeping</i></p> <ul style="list-style-type: none"> ■ Use "dry" washing and surface preparation techniques where feasible. Several products are presently marketed which are being used to clean even the largest aircraft. Remove all materials (i.e., drippings and residue) using vacuum methods. Dispose of properly. ■ Provide secondary containment for containers of washing and steam cleaning additives. ■ Use pigs/mats to cover catch basins during wash activity. ■ Use biodegradable phosphate-free detergents. ■ Keep washing area clean and free of waste. ■ Include proper signage to prohibit the discharge of waste oils into the drains. ■ Collect and discharge wash water to an approved treatment facility (sanitary sewer system) through a permitted connection. 	<p>TARGETED POLLUTANTS</p> <p>Oil and Grease</p> <p>Solvents</p> <p>Vehicle Fluids</p> <p>Cleaning Solutions</p> <p>KEY APPROACHES</p> <p>Use designated area</p> <p>Use dry washing techniques</p> <p>Recycle wash water or discharge appropriately</p> <p>Cover catch basins</p> <p>Provide training</p>

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SC4	AIRCRAFT, GROUND VEHICLE AND EQUIPMENT WASHING
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Physical Site Usage

- Consider off-site commercial washing and steam cleaning where feasible. Using appropriate off-site facilities will decrease the waste generated on-site.
- Use designated wash areas indoors, or outdoors covered and bermed where feasible, to prevent contamination of storm water by contact with wastes.

Structural Controls

- Install gate valves at catch basins for use during washing activities to facilitate the collection of the wash water and prevent discharge to the storm drainage system.
- Filter and recycle wash water where practical.

Maintenance

- Conduct berm repair and patching.
- Inspect, clean, and maintain sumps, oil/water separators, and on-site treatment and recycling units.

Contingency Response

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

Inspection and Training

- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.
- Develop regular maintenance and inspection programs for oil/water separators.
- Characterize wastes derived from oil/water separators. Provide appropriate employee training.

REQUIREMENTS:

- Capital costs vary depending on measures implemented.
 - LOW COST: \$500-1,000 for berm construction.
 - MEDIUM COST: \$5,000-20,000 for plumbing modifications (including re-routing discharge to the sanitary sewer and installing a simple sump).
 - HIGH COST: \$30,000-150,000 for on-site treatment and recycling.
- O&M costs increase with increasing capital investment.

LIMITATIONS:

- Some wastewater agencies may require pretreatment and monitoring of wash water discharges to the sanitary sewer.
- Steam cleaning and de-greasing operations can generate significant pollutant concentrations which may require permitting, monitoring, pretreatment, and inspections. These compliance issues will vary according to local agency jurisdiction.

SC4

AIRCRAFT, GROUND VEHICLE AND EQUIPMENT WASHING

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997

.40 CFR 110.3 Discharge of Oil

.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance

.40 CFR 122-124 NPDES Regulations for Storm water Discharges

.40 CFR 401 Effluent Limitation Guidelines

SC5	AIRCRAFT DEICING/ANTI-ICING
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water from aircraft deicing and anti-icing procedures.</p>	<p style="text-align: center;">TARGETED ACTIVITIES</p> <p>Aircraft Deicing</p> <p>Aircraft Anti-Icing</p>
<p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ When designing or modifying operating areas, consider the following characteristics: <ul style="list-style-type: none"> - Paved with Portland cement concrete. - Sloped to facilitate fluid collection. - Fluids could be collected in a dead-end sump for removal or discharged to the sanitary sewer through a permitted connection (check with local wastewater agency). - Clearly designated. - Equipped with an oil/water separator. ■ Consider incorporating a closed loop recycling system into the design of deicing/anti-icing stations. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <ul style="list-style-type: none"> ■ Perform anti-icing and deicing operations only in areas designated by OIAA as appropriate for such activities. ■ Depending on conditions, apply only enough fluid to surfaces to ensure the safe operation of the aircraft. Excess fluid dripped to the ground contaminates soil and water if not properly contained. ■ Clean ramp areas following deicing/anti-icing operations. Wet-type sweepers are effective in removing deicing fluids from paved areas. Dispose of or recycle the fluids in accordance with local, state, and federal regulations. ■ Implement forthcoming recommendations of the FAA technical committee on deicing. ■ Inspect, clean and maintain sumps and oil/water separators. <p style="text-align: center;"><i>Contingency Response</i></p> <ul style="list-style-type: none"> ■ Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur. <p style="text-align: center;"><i>Inspection and Training</i></p> <ul style="list-style-type: none"> ■ Monitor deicing and anti-icing operations regularly to ensure quantities of fluids used are at a minimum while not jeopardizing aircraft safety. ■ Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management. 	<p style="text-align: center;">TARGETED POLLUTANTS</p> <p>Ethylene glycol</p> <p>Propylene glycol</p> <p style="text-align: center;">KEY APPROACHES</p> <p>Perform in designated areas only</p> <p>Apply only required amounts of fluid</p> <p>Clean ramp area when done</p> <p>Implement forthcoming recommendations of FAA</p>

SC5

AIRCRAFT DEICING/ANTI-ICING

REQUIREMENTS:

- Costs associated with the collection and proper disposal of anti-icing fluids can be high.

LIMITATIONS:

- Wastewater agencies may ban conventional anti-icing chemicals, such as ethylene glycol, from the sanitary sewer system or may require extensive pretreatment and monitoring of deicing and anti-icing fluid discharges to the sanitary sewer.

RELEVANT REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm Water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC6	OUTDOOR MATERIAL HANDLING
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water from loading and unloading of material and cargo.</p>	<p>TARGETED ACTIVITIES</p> <p>Cargo Handling</p> <p>Fuel Storage</p> <p>Chemical Storage</p> <p>Equipment Storage</p>
<p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Design loading/unloading areas to prevent storm water run-on through the use of the following practices: <ul style="list-style-type: none"> - Grading or berming. - Positioning roof downspout to direct storm water away from loading/unloading areas. ■ Design facilities so that materials which may contribute pollutants to storm water may be stored indoors or under cover. ■ Incorporate oil/water separators into exposed loading dock designs. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <p><i>Good Housekeeping</i></p> <ul style="list-style-type: none"> ■ Use seals or door skirts between vehicles and structures to prevent material exposure to rainfall. ■ Contain and adsorb leaks during transfers and spillage from hose disconnections; dispose of residue properly. ■ Avoid transferring materials in close proximity to storm drain inlets. ■ Use drip pans under hoses. ■ Transfer liquids only in paved areas. Portland cement paving should be used if the liquid is asphalt reactive. ■ Provide contractors and haulers with copies of pertinent BMPs. Require contractors/haulers adherence to BMP specifications. ■ Consider contracting maintenance operations for material handling equipment. Designate an appropriate area for contractors to perform maintenance activities. Verify proper waste disposal practices of contractors. <p><i>Physical Site Usage</i></p> <ul style="list-style-type: none"> ■ Protect all loading/unloading activities from rainfall, run-on and wind dispersal to the maximum extent practicable. Viable options include conducting loading/unloading under existing cover, or moving indoors. ■ Position tank trucks or delivery vehicles so that possible spills or leaks can be contained. 	<hr/> <p>TARGETED POLLUTANTS</p> <p>Fuel</p> <p>Pesticides/ Herbicides/ Fertilizers</p> <p>Oil and Grease</p> <p>Solvents/Cleaning Solutions</p> <p>Battery Acid</p> <p>KEY APPROACHES</p> <p>Conduct loading/ unloading under cover</p> <p>Transfer materials in paved areas, away from storm drain inlets</p> <p>Contain and absorb leaks/spills that occur during material transfer</p>

SC6

OUTDOOR MATERIAL HANDLING

Structural Controls

- Cover loading/unloading areas/docks to reduce exposure of materials to rain. Construct roofing structure over material handling area, or move indoors.
- Consider relocating storm drain inlets in areas away from fuel hydrants.

Maintenance

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

Contingency Response

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

Inspection and Training

- Conduct regular inspections and make repairs as necessary.
- Check loading/unloading equipment (valves, pumps, flanges, and connections) regularly for leaks.
- Develop and implement a written operations plan which describes loading/unloading procedures.
- Provide proper training for material handling equipment operators.
- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.

REQUIREMENTS:

- Capital and O&M costs should be low except when covering large loading/unloading areas.

LIMITATIONS:

- Space and time limitations may preclude the indoor or covered transfer of cargo and materials.

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 110.3 Discharge of Oil
.40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm water Discharges

SC7	OUTDOOR STORAGE OF SIGNIFICANT MATERIAL
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water from outdoor storage areas for significant material (e.g., fuels, chemicals, bagged material on pallets, soils or asphalt material bulk storage, deicing compounds, etc.).</p> <hr/> <p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Require the use of appropriate water quality control structures for fuel and chemical storage areas such as detention/retention basins and sumps. Develop appropriate minimum performance standards for these water quality control structures and implement a reporting program to monitor the performance and maintenance of these structures. ■ Chemical, fuel, and oil dispensing (non-aircraft) areas should be covered, if possible. ■ Develop standard guidelines for the management of storm water which collects in secondary containment areas. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p><i>Operational Considerations</i> <i>Good Housekeeping</i></p> <ul style="list-style-type: none"> ■ Avoid dispensing from drums positioned horizontally in cradles. Dispensing materials from upright drums equipped with hand pumps is preferred. Always use drip pans and self closing spigots if dispensing from horizontally positioned drums. ■ Store drums and containers on pallets or other structures to keep the container out of contact with storm water. ■ Use drum lids to prevent rainfall from washing materials and drippage from the top of containers to the storm drain system. ■ Discharge collected storm water from secondary containment areas according to guidelines developed by the federal government and applicable state and local regulations. ■ Store all materials in their original containers or containers approved for that use. Ensure that all containers are appropriately sealed. Store empty containers indoors or under cover or move them off-site. 	<p style="text-align: center;">TARGETED ACTIVITIES</p> <p>Aircraft/Vehicle/ Equipment Maintenance</p> <p>Aircraft/Vehicle Fueling</p> <p>Fuel/Chemical/ Equipment Storage</p> <p>Cargo Handling</p> <hr/> <p style="text-align: center;">TARGETED POLLUTANTS</p> <p>Fuel</p> <p>Solvents/Cleaning Solutions</p> <p>Deicing/Anti-Icing Fluids</p> <hr/> <p style="text-align: center;">KEY APPROACHES</p> <p>Store materials indoors or under cover</p> <p>Store drums/ containers on pallets</p> <p>Provide berming or secondary containment</p> <p>Develop/implement an SPCC, if required</p> <p>Perform and document periodic inspections</p>

SC7

OUTDOOR STORAGE OF SIGNIFICANT MATERIAL

REQUIREMENTS:

- Capital and O&M costs will vary widely depending on the size of the facility and the necessary controls. Costs associated with on-site detention/retention facilities could be high.

LIMITATIONS:

- Storage structures must meet local building and applicable local Uniform Fire Code (UFC) requirements. However, spills and releases are frequently caused by improper handling rather than structural deficiencies.

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 110.3 Discharge of Oil
.40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm Water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC8	WASTE/GARBAGE HANDLING AND DISPOSAL
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water from waste handling and disposal by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, re-use, and recycling; and preventing run-on and runoff from waste management areas, including garbage collection areas.</p> <hr/> <p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ If possible, avoid the following characteristics when examining candidate sites for storing wastes: <ul style="list-style-type: none"> - Excessive slope. - High water table. - Locations near storm drain inlets. - Locations near public access areas. ■ Waste handling and storage areas should be covered, if possible. ■ Develop standard guidelines for the management of storm water which collects in secondary containment areas. ■ Incorporate sanitary sewer drains into bermed, outdoor, non-hazardous waste storage areas, if approved by the local wastewater treatment agencies/regulations. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <p><i>Good Housekeeping</i></p> <ul style="list-style-type: none"> ■ Perform regular housekeeping activities in waste storage areas and surroundings. ■ Recycle materials whenever possible. ■ Inspect waste management areas for spills and waste management containers for leaks. ■ Ensure that sediments and wastes are prevented from being washed, leached, or otherwise carried off-site. 	<p style="text-align: center;">TARGETED ACTIVITIES</p> <p>Fuel/Chemical Storage</p> <p>Painting/Stripping</p> <p>Garbage Collection</p> <p style="text-align: center;">TARGETED POLLUTANTS</p> <p>Oil and Grease</p> <p>Vehicle Fluids</p> <p>Solvents/Cleaning Solutions</p> <p>Dumpster Wastes</p> <p style="text-align: center;">KEY APPROACHES</p> <p>Cover waste storage areas</p> <p>Recycle materials</p> <p>Regularly inspect and clean waste storage areas</p> <p>Berm waste storage areas to prevent contact with run-on or runoff</p> <p>Perform dumpster cleaning in designated areas</p> <p>Properly dispose of all fluids</p>

SC8

WASTE/GARBAGE HANDLING AND DISPOSAL

Good Housekeeping (contd)

- Schedule waste pickup as frequently as necessary to keep storage of waste to a minimum and to avoid overloaded/overfilled disposal containers.
- Minimize spills and fugitive losses such as dust or mist from loading areas.
- Maintain a minimal inventory of required chemicals to reduce the magnitude of potential spills and limit waste generation.
- Track waste generated:
 - Characterize waste streams.
 - Evaluate the process generating the waste.
 - Prioritize the waste streams using: manifests, bills of lading, biennial reports, permits, environmental audits, SARA Title III reports, emission reports, Material Safety Data Sheets (MSDS), NPDES discharge monitoring reports.
 - Inventory reports.
 - Data on chemical spills.
 - Emissions.
- Find substitutes for harmful chemicals; properly dispose of unusable chemical inventory.

Physical Site Usage

- Segregate and separate wastes.
- Avoid locating waste handling and storage in areas with storm drain inlets/catch basins.
- Locate waste storage areas beneath existing cover, if possible.

Structural Controls

- Enclose or berm waste storage areas, if possible, to prevent contact with run-on or runoff.

Garbage Collection Areas

- Design facilities to provide shelter and secondary containment for dumpsters.
- Use covered dumpsters and keep them closed and locked.
- Use only dumpsters with plugged drain holes to prevent leaks from waste materials.
- Do not dispose of liquid wastes such as oils or hazardous materials into dumpsters.
- Perform dumpster cleaning in designated areas that are bermed to contain wash water for a subsequent disposal or discharge to the sanitary sewer. Ramp scrubbers are effective in removing wash water from paved areas. Dispose of or recycle all fluids collected.

Contingency Response

- Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may be likely to occur.
- Equip waste transport vehicles with spill containment equipment.

SC8

WASTE/GARBAGE HANDLING AND DISPOSAL

Inspection and Training

- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.
- Perform and document in a log book periodic inspections of hazardous and non-hazardous waste storage areas. Inspection items should include the following:
 - Check for external corrosion and structural failure.
 - Check for spills and overfills due to operator failure.
 - Check for failure of piping system (pipes, pumps, flanges, couplings, hoses, and valves).
 - Check for leaks or spills during pumping of liquids or gases.
 - Visually inspect new tanks or containers for loose fittings, poor welds, and improper or poorly fitted gaskets.
 - Inspect tank foundations and storage area coatings.
 - Inspect dumpster areas for signs of leakage.

REQUIREMENTS:

- Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of wastes handled.

LIMITATIONS:

- Hazardous waste that cannot be re-used or recycled must be disposed of by a licensed hazardous waste hauler.

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 110.3 Discharge of Oil
.40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC9	BUILDING AND GROUNDS MAINTENANCE
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water from building and grounds maintenance by washing and cleaning up with as little water as possible, preventing and cleaning up spills immediately, keeping debris from entering storm drains, and maintaining the storm water collection system.</p> <p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Incorporate areas of landscape into project design. Landscape areas are pervious and will result in less runoff discharge from a site. ■ Incorporate design considerations such as leaving or planting native vegetation to reduce irrigation, fertilizer, and pesticide needs. ■ Select landscaping plants which require little maintenance and/or pest control. ■ Incorporate storm water detention/retention to reduce peak runoff flows and for water quality control. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <p><i>Good Housekeeping</i></p> <ul style="list-style-type: none"> ■ Collect outdoor washdown water and properly dispose of it through a permitted connection to the sanitary sewer. Approval from treatment facility required for discharge. ■ Clean any catch basins that receive runoff from maintenance areas on a regular basis. Use a vacuum truck to remove accumulated materials. Do not simply flush wastes into the storm drain system. ■ Minimize use of pesticides, herbicides, and fertilizers. Use according to directions. Seek less harmful/toxic products to replace ones currently used. ■ Utilize integrated pest management where appropriate. ■ Properly dispose of landscape waste, wash water, sweepings, and sediments. ■ Regularly clean paved surfaces that are exposed to industrial activity. Use A “dry” cleaning techniques, such as sweeping, whenever possible. 	<p>TARGETED ACTIVITIES</p> <p>Building Maintenance</p> <p>Grounds Maintenance</p> <p>TARGETED POLLUTANTS</p> <p>Pesticides/Herbicides/ Fertilizers</p> <p>Oil and Grease</p> <p>Sediment</p> <p>Landscape Waste</p> <p>KEY APPROACHES</p> <p>Keep paved surfaces cleaned and swept</p> <p>Clean catch basins regularly using vacuum trucks</p> <p>Manage use of pesticides/herbicides/fertilizers</p>

SC9	BUILDING AND GROUNDS MAINTENANCE
<p><i>Structural Controls</i></p> <ul style="list-style-type: none"> ■ Provide landscaped areas where erosion is becoming a problem. <p><i>Contingency Response</i></p> <ul style="list-style-type: none"> ■ Maintain adequate supplies of spill response equipment and materials in accessible locations near areas where spills may occur. <p><i>Inspection and Training</i></p> <ul style="list-style-type: none"> ■ Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management. 	
<p>REQUIREMENTS:</p> <ul style="list-style-type: none"> ■ Costs will vary depending on the type and size of the facility. Costs of on-site storm water detention/retention facility could be high. 	
<p>LIMITATIONS:</p> <ul style="list-style-type: none"> ■ Alternative pest/weed controls may not be available, suitable, or effective in every case. 	
<p>RELEVANT RULES AND REGULATIONS:</p> <p>Industrial Activities Storm Water General Permit, April 17, 1997 .40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substances .40 CFR 122-124 NPDES Regulations for Storm Water Discharges .40 CFR 401 Effluent Limitation Guidelines</p>	

SC10	STORM WATER POLLUTION PREVENTION EDUCATION
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water from activities through implementing an education program targeting employees, vendors, and the public.</p>	<p>TARGETED ACTIVITIES</p> <ul style="list-style-type: none"> All Maintenance All Fueling All Washing Equipment Cleaning Cargo Handling All Storage Painting/Stripping Floor Washdowns Aircraft Deicing/Anti-Icing Garbage Collection Aircraft Lavatory Service Fire Fighting Equip. Testing Potable Water System Flush. Runway Rubber Removal
<p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Work early on with design and construction engineers, and local storm water authorities to incorporate proactive storm water management features into projects such as decreased impervious areas, infiltration BMPs, biofilters, oil/water separators, etc. ■ Inform all construction contractors of their responsibility to comply with adopted BMPs and with regulations prohibiting cross connections between sanitary sewers and storm drains. Provide contractors and subcontractors with copies of relevant BMPs during specification and bidding phases. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Contingency Response</i></p> <ul style="list-style-type: none"> ■ Provide adequate implementation training for facilities with a Spill Prevention Control and Countermeasure (SPCC) Plan, if required developed under guidelines set forth in 40 CFR, Section 112.3(a), (b). ■ Adequately train employees in the use of spill response equipment and materials. <p><i>Inspection and Training</i></p> <ul style="list-style-type: none"> ■ Perform and document in a logbook frequent inspections of work areas, waste storage facilities, maintenance areas, and contractor projects to examine compliance with BMPs. Follow up with additional training or enforcement as required. Incorporate inspection findings into subsequent training efforts. ■ Design storm water pollution education programs to contain the following elements: <ul style="list-style-type: none"> - Promote the proper storage, use, and disposal of landscape maintenance chemicals and other potentially harmful chemicals. - Promote the use of safer alternative products such as: short-lived pesticides, non-chlorinated solvents, water-based paints, non-aerosol products. - Encourage the use of "dry" washing processes for aircraft, vehicles, and equipment. 	<p>TARGETED POLLUTANTS</p> <ul style="list-style-type: none"> Oil and Grease Vehicle Fluids Fuel Solvents/Cleaning Sol. Deicing/Anti-Icing Fluid Battery Acid Pesticides/Herbicides/ Fertilizers Paint Aircraft Fire Fighting Foam Metals Dumpster Wastes Sediment Landscape Waste Floatables Lavatory Chem. Wastes Potable Water System Chemicals Rubber Particles <p>KEY APPROACHES</p> <ul style="list-style-type: none"> Perform inspections and enforcement Provide training for employees Promote education of vendors/public

SC 10

STORM WATER POLLUTION PREVENTION EDUCATION

Inspection and Training (contd)

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

REQUIREMENTS:

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

LIMITATIONS:

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

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 110.3 Discharge of Oil
.40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm Water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC11	LAVATORY SERVICE OPERATIONS
<p>PURPOSE:</p> <p>Eliminate discharges to the storm drain system associated with ground servicing of aircraft lavatory facilities. The sanitary sewage and associated rinse waters produced during the servicing of aircraft lavatory facilities must be discharged to a wastewater treatment facility under appropriate permitting. Trucks or trailers equipped with bulk storage tanks are typically used to service lavatory facilities. Non-storm water discharges and residuals associated with servicing these facilities can be classified as follows:</p> <ul style="list-style-type: none"> ■ Discharges and residuals associated with diluting and mixing the surfactants and disinfectants used for servicing lavatory facilities. ■ Discharges and residuals associated with transferring materials from the aircraft. ■ Discharges and residuals associated with transporting and disposing materials to the sanitary sewer system. <p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ If possible, design triturator facilities to be covered, with low roll-over type berming. ■ Include a source of water at the triturator for clean up of lavatory service equipment. ■ Coordinate permitting of the triturator sanitary sewer connection through the local storm water and sanitary sewer agencies. ■ Triturator facilities should not be located near storm drains. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <ul style="list-style-type: none"> ■ Do not discharge lavatory waste to sanitary sewer connections other than triturator facilities. Other industrial-type connections may be equipped with bypass gates which, if improperly maintained or defective, may discharge to the storm water collection system. ■ Drain the aircraft connecting hose as completely as possible into the storage tank after servicing an aircraft. Properly secure all hoses, valves, and equipment when transporting waste to eliminate leakage and spills. ■ Use only surfactants and disinfectants approved for discharge to the sanitary sewer system. Do not discharge or rinse other unapproved chemicals or materials into the triturator facility. Any change in the chemicals used in aircraft lavatory service operations must be approved by OIAA. 	<p>TARGETED ACTIVITIES</p> <ul style="list-style-type: none"> Aircraft Lavatory Service Lavatory Truck Cleanout/ Backflushing <p>TARGETED POLLUTANTS</p> <ul style="list-style-type: none"> Lavatory Chemicals Lavatory Waste Lavatory Truck Wash Water <p>KEY APPROACHES</p> <ul style="list-style-type: none"> Do not discharge lavatory waste to sanitary sewer connections other than triturator facilities Utilize buckets or pans to capture drippage from aircraft lavatory access fittings Do not perform lavatory truck cleanout/backflushing at any location other than triturator facilities Carry absorbent and other containment equipment on the lavatory service equipment

SC11

LAVATORY SERVICE OPERATIONS

Operational Considerations (contd)

- If possible, perform surfactant/disinfectant mixing and transfers in the triturator area or under cover. This will allow the rinsing of minor spills and splashes to enter the sanitary sewer system.
- Do not perform lavatory truck cleanout/back flushing at any location other than triturator facilities.
- Utilize buckets or pans to capture drippage from aircraft lavatory access fittings. Immediately dump the drippage into the bulk storage tank on the service cart or truck.
- Carefully handle chemicals and chemical concentrates. Immediately collect dry chemicals or absorb liquid chemicals for proper disposal. Do not hose down spills unless the discharge enters the sanitary sewer system through a permitted connection (triturator facility).
- Practice good housekeeping techniques at the triturator facility. Immediately clean spills of wastes and chemicals.

Contingency Response

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

Inspection and Training

- Perform regular inspections of the hose and fittings used for transferring lavatory waste. Keep the equipment in good working order. Replace worn equipment before leaks develop. Notify appropriate ground service personnel if it is noticed that the aircraft lavatory fittings require maintenance.
- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.

REQUIREMENTS:

- Costs associated with the elimination of discharges resulting from aircraft lavatory servicing are generally low. Most management practices are based on careful material handling, good housekeeping, and awareness of maintenance requirements.

LIMITATIONS:

- Facilities may have a limited number of permitted sanitary sewer access points (triturator facilities) for a large quantity of lavatory service equipment.

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm Water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC12		OUTDOOR WASHDOWN/SWEEPING	
<p>PURPOSE:</p> <p>Prevent or reduce the discharge of pollutants to storm water from outdoor washdown and sweeping operations.</p> <p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Consider contracting apron washing/sweeping services. Using appropriate contractors will decrease waste handling responsibilities. Inform contractors of their responsibilities regarding proper disposal of sweeper and scrubber waste. Supply contractors with pertinent BMPs and operating specifications. Follow up with contractor inspections frequently. ■ Incorporate appropriate waste receiving facilities for sweepers and washing equipment. Coordinate sanitary sewer connection permitting through the local sanitary sewer agency. ■ Incorporate oil/water separators or other water quality devices into project designs. ■ Consider incorporating gate valves in areas where apron washing will occur. The gate valves will direct wash water to the sanitary sewer in dry weather and will direct storm water to the storm drain system during wet weather. Mechanical devices should be incorporated to ensure that valves are not left open (to sanitary sewer) during wet weather. Coordinate permitting and connections through the local sanitary sewer agency. ■ Employ berms to minimize run-on to other areas. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p><i>Operational Considerations</i></p> <ul style="list-style-type: none"> ■ Collect and discharge wash water to the sanitary sewer system through a permitted connection. ■ Use designated and approved discharge facilities to dispose of waste derived from apron/ramp cleaning. ■ Use "dry" sweeping techniques where feasible. ■ Dispose of sweepings in an appropriate manner. ■ Conduct berm repair and patching. ■ Inspect, clean and maintain sumps and oil/water separators. 	<p>TARGETED ACTIVITIES</p> <p>Apron Washing</p> <p>Ramp Scrubbing</p> <p>Outdoor Washdown</p> <p>TARGETED POLLUTANTS</p> <p>Oil and Grease</p> <p>Solvents/Cleaning Solutions</p> <p>Fuel</p> <p>Aircraft Fire Fighting Foam</p> <p>Deicing/Anti-Icing Fluids</p> <p>Sediment</p> <p>Floatables</p> <p>KEY APPROACHES</p> <p>Collect and discharge wash water to the sewer</p> <p>Use "dry" sweeping techniques</p> <p>Dispose of sweepings</p>		

SC12

OUTDOOR WASHDOWN/SWEEPING

Contingency Response

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

Inspection and Training

- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.
- Develop regular maintenance and inspection programs for oil/water separators. Document inspections and maintenance in a log book.
- Characterize wastes derived from oil/water separators. Dispose of these wastes properly and provide appropriate employee training.

REQUIREMENTS:

- Capital costs vary depending on measures implemented.
 - LOW COST: \$500-1,000 for berm construction.
 - MEDIUM COST: \$5,000-20,000 for plumbing modification (including re-routing discharge to the sanitary sewer and installing a simple sump).
- O&M costs increase with increasing capital investment:

LIMITATIONS:

- Some wastewater agencies may require pretreatment and monitoring of wash water discharges derived from apron washing to the sanitary sewer.

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 110.3 Discharge of Oil
.40 CFR 122-124 NPDES Regulations for Storm Water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC13	FIRE FIGHTING FOAM DISCHARGE
<p>PURPOSE:</p> <p>Eliminate discharges to the storm drain system associated with flushing or testing of fire fighting foam systems.</p> <p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Design testing facility with the following characteristics: <ul style="list-style-type: none"> - Located away from storm drain inlets, drainage facilities or water bodies. - Paved with concrete or asphalt, or stabilized with an aggregate base. - Bermed to contain foam and to prevent run-on. - Configure discharge area with a sump to allow collection and disposal of foam. ■ Discharge foam waste to a sanitary sewer. Foam waste shall not be discharged to storm drains or water bodies. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <ul style="list-style-type: none"> ■ Perform fire fighting foam testing operations only in areas designated by OIAA as appropriate for such activities. ■ Properly dispose of, or recycle, foam discharge. ■ Service sump regularly. ■ Conduct berm repair and patching. ■ Inspect, clean, and maintain sumps. <p style="text-align: center;"><i>Contingency Response</i></p> <ul style="list-style-type: none"> ■ Maintain adequate supplies of spill response equipment and materials in accessible locations near area of activity. <p style="text-align: center;"><i>Inspection and Training</i></p> <ul style="list-style-type: none"> ■ Inspect testing facility weekly or monthly, depending on frequency of use. ■ Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management. 	<p style="text-align: center;">TARGETED ACTIVITIES</p> <p>Fire Fighting Equipment Testing</p> <p>Fire Fighting Equipment Flushing</p> <p style="text-align: center;">TARGETED POLLUTANTS</p> <p>Aircraft Fire Fighting Foam</p> <p style="text-align: center;">KEY APPROACHES</p> <p>Perform testing operations in designated areas</p> <p>Properly dispose of, or recycle, foam discharge</p> <p>Service sump regularly</p>

SC13

FIRE FIGHTING FOAM DISCHARGE

REQUIREMENTS:

- Capital costs vary depending on measures implemented.
 - LOW COST: \$500-1,000 for berm construction.
 - MEDIUM COST: \$5,000-20,000 for plumbing modifications (including re-routing discharge to the sanitary sewer and installing a simple sump).
- O&M costs increase with increasing capital investment.

LIMITATIONS:

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

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 122-124 NPDES Regulations for Storm water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC14	POTABLE WATER SYSTEM FLUSHING
<p>Purpose:</p> <p>Eliminate discharges to the storm drain system associated with flushing of aircraft potable water systems.</p>	<p style="text-align: center;">TARGETED ACTIVITIES</p> <p>Aircraft potable water system cleaning and flushing Water truck cleaning and flushing</p>
<p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Design water truck flushing area with the following characteristics: <ul style="list-style-type: none"> - Located away from storm drain inlets or drainage facilities. - Paved with concrete or asphalt, or stabilized with an aggregate base. - Bermed to contain wastewater and to prevent run-on. - Configure discharge area with a sump to allow collection and disposal of water. ■ Discharge water to a permitted sanitary sewer connection. Waste water shall not be discharged to storm drains. <p>APPROACH TO EXISTING FACILITY ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <ul style="list-style-type: none"> ■ Perform water truck flushing operations only in designated areas, designed with berms to prevent run-on and runoff. Do not perform flushing near storm drains. ■ Collect all discharge from aircraft potable water flushing or water truck flushing containing Purine, chlorine bleach or other chemicals and properly discharge to a permitted sanitary sewer connection, or recycle the water. ■ Conduct berm repair and patching. ■ Inspect, clean and maintain sumps and on-site treatment and recycling units. <p style="text-align: center;"><i>Contingency Response</i></p> <ul style="list-style-type: none"> ■ Maintain adequate supplies of spill response equipment and materials in accessible locations near area of activity. 	<p style="text-align: center;">TARGETED POLLUTANTS</p> <p>Purine Chlorine Bleach</p> <p style="text-align: center;">KEY APPROACHES</p> <p>Perform water truck flushing in designated areas only</p> <p>Collect all discharge from aircraft potable water flushing or water truck flushing and discharge to a permitted sanitary sewer connection</p> <p>Do not discharge water to the ground or storm drain sanitary sewer connection</p>

SC14

POTABLE WATER SYSTEM FLUSHING

Inspection and Training

- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution educational approaches), right-to-know awareness training, and hazardous materials management.
- Monitor flushing operations regularly to ensure that proper collection and disposal of discharge is being performed.

REQUIREMENTS:

- Capital costs are low for implementation of collection system for aircraft potable water flushing.
- For new facility, capital costs vary depending on measures implemented.
 - LOW COST: \$500-1,000 for berm construction.
 - MEDIUM COST: \$5,000-20,000 for plumbing modifications (including re-routing discharge to the sanitary sewer and installing a simple sump.
 - HIGH COST: \$30,000-150,000 for on-site treatment and recycling.
 -

LIMITATIONS

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

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 122-124 NPDES Regulations for Storm Water Discharges
.40 CFR 401 Effluent Limitation Guidelines

SC15		RUNWAY RUBBER REMOVAL	
<p>PURPOSE:</p> <p>Eliminate discharges to the storm drain of particulate rubber generated by runway rubber removal activities.</p>		<p>TARGETED ACTIVITIES</p> <p>Runway Rubber Removal</p>	
<p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p style="text-align: center;"><i>Design of New Facilities and Existing Facility Upgrades</i></p> <ul style="list-style-type: none"> ■ Design runway storm drain culverts to allow placement of particulate capture devices, such as hay bales or filter fabric that will capture rubber and dirt particles generated during periodic runway rubber removal activities. 		<p>TARGETED POLLUTANTS</p> <p>Rubber particles</p> <p>Dirt particles</p>	
<p>APPROACH TO EXISTING FACILITIES ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <ul style="list-style-type: none"> ■ Place devices that will capture rubber particulates, such as haybales or filter fabric, over storm drain culverts or at other areas that will capture rubber particulates generated during periodic runway rubber removal activities. ■ Use manual or mechanical cleaning methods (ordinary mechanical street sweepers) to remove rubber particulates from the runway and adjacent paved areas after periodic runway rubber removal activities. <p style="text-align: center;"><i>Inspection and Training</i></p> <ul style="list-style-type: none"> ■ Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management. ■ Inspect storm drain culverts or runway drainage areas after runway rubber removal activities. 		<p>KEY APPROACHES</p> <p>Use haybales or filter fabric over culverts</p> <p>Use manual or mechanical cleaning methods (e.g., street sweepers) to remove particulates following normal removal process</p>	
<p>REQUIREMENTS:</p> <ul style="list-style-type: none"> ■ Capital and O&M costs should be low. ■ Maintenance costs should be low 			
<p>LIMITATIONS:</p> <p># Runway drainage patterns may not be suitable for the collection of rubber particulates in wash water run-off.</p>			
<p>RELEVANT RULES AND REGULATIONS:</p> <p>Industrial Activities Storm Water General Permit, April 17, 1997 .40 CFR 122-124 NPDES Regulations for Storm Water Discharges</p>			

OIL/WATER SEPARATORS	
TC1	OIL/WATER SEPARATORS
<p>PURPOSE:</p> <p>Oil/Water separators are baffled chambers designed to remove petroleum compounds and grease from storm water. Oil/water separators also remove floatable debris and settled solids (sediment).</p> <hr/> <p>APPROACH TO FUTURE FACILITIES AND UPGRADES:</p> <p><i>Design of New Facilities and Existing Facility Upgrades</i></p> <p>Oil/water separators are typically used in areas where the concentrations of petroleum hydrocarbons, floatables, or sediment may be abnormally high and source control techniques are not very effective. There are two types of oil/water separators: the American Petroleum Institute (API) separator and the coalescing plate separator (CPS). Design, sizing, and placement of oil/water separators is dependent on several factors including: tributary area, type of activity, pollutant type and concentration, and water temperature. General sizing guidelines for API separators include the following:</p> <ul style="list-style-type: none"> ▪ Horizontal velocity: 3 feet per minute. ▪ Depth of 3 to 8 feet. ▪ Depth-to-width ratio of 0.3 to 0.5. ▪ Width of 6 to 16 feet. ▪ Baffle height-to-depth ratios of 0.85 for top baffles and 0.15 for bottom baffles. <p>CPS separator sizing is more complex. Sizing calculations require the inclusion of information such as packing plate surface areas and plate angles. CPS separators can, due to their packed plate design, remove the same quantities of oils and greases while occupying less space than API separators.</p> <p>APPROACH TO EXISTING FACILITIES ACTIVITIES:</p> <p style="text-align: center;"><i>Operational Considerations</i></p> <ul style="list-style-type: none"> ▪ Separators must be inspected and cleaned frequently for accumulated oil, grease, floating debris and sediments to be effective storm water quality controls. ▪ Oil absorbent pads are to be replaced as needed, but will always be replaced prior to the wet season. 	<p style="text-align: center;">TARGETED ACTIVITIES</p> <p>Aircraft/Vehicle/ Equipment Maintenance</p> <p>Aircraft/Vehicle/ Equipment Fueling</p> <p>Aircraft/Vehicle/ Equipment Washing</p> <p>Equipment Maintenance/ Degreasing</p> <p>Fuel/Chemical Storage</p> <p>Cargo Handling</p> <p style="text-align: center;">TARGETED POLLUTANTS</p> <p>Oil and Grease</p> <p>Fuel</p> <p>Floatables</p> <p>Sediment</p> <p style="text-align: center;">KEY APPROACHES</p> <p>Frequently inspect and clean separators</p> <p>Replace absorbent pads as needed</p>

TC1

OIL/WATER SEPARATORS

Operational Considerations (continued):

- The effluent valve will be closed during cleaning operations.
- Any standing water removed during the cleaning operation must be disposed of in accordance with federal, state, and local requirements.
- Any standing water removed during the cleaning operation must be replaced with clean water to prevent oil carry-over through the outlet.

Contingency Response

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

Inspection and Training

- Provide the appropriate level of employee training in the following areas: spill response and prevention, storm water pollution prevention education (see SC-10 for storm water pollution education approaches), right-to-know awareness training, and hazardous materials management.
- Perform and document in a log book all inspections and maintenance operations
- Develop a written operating, sampling and reporting procedure under local storm water authority guidelines. Train appropriate employees to implement these procedures.

REQUIREMENTS:

- Capital and O&M costs should be low.

LIMITATIONS:

- Oil/water separator installations should be designed and installed by experienced individuals. Little data on the characteristics of petroleum hydrocarbons in storm water leads to considerable uncertainty about separator performance.

RELEVANT RULES AND REGULATIONS:

Industrial Activities Storm Water General Permit, April 17, 1997
.40 CFR 110.3 Discharge of Oil
.40 CFR 112 Oil Pollution Prevention (SPCC/OPA Plans)
.40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
.40 CFR 122-124 NPDES Regulations for Storm Water Discharges



SR1	EMERGENCY SPILL CLEANUP PLANS
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PURPOSE:

Prevent or reduce the discharge of pollutants to storm water resulting from petroleum products or other materials

TARGETED ACTIVITIES

Aircraft/Vehicle/
Equipment Maintenance
Aircraft/Vehicle/
Equipment fueling
Aircraft/Vehicle/
Equipment Washing
Cargo Handling
Fuel/Chemical Storage
Equipment Degreasing

GENERAL APPROACH:

Owners and operators of facilities that store, process, or refine oil or oil products may be required by federal law (40 CFR 112) to develop and implement a Spill Prevention Control and Countermeasure (SPCC) plan. Emergency spill cleanup plans should include the following information:

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

TARGETED POLLUTANTS

Fuel
Vehicle Fluids/Oils
Solvent/Cleaning Solutions
Pesticides/herbicides/
Fertilizers
Battery Acid

APPROACH TO EXISTING FACILITY ACTIVITIES:

Operational Considerations

- **Post a summary of the plan at appropriate site locations, identifying the spill cleanup coordinators, location of cleanup equipment, and phone numbers of regulatory agencies to be contacted in the event of a spill.**
- **Maintain an inventory of appropriate cleanup materials on-site and strategically deploy cleanup materials based on the type and quantities of chemicals present.**
- **Make absorbent readily available in the fueling areas**

Contingency Response

- Perform the following notifications in the event of a spill:
 - ☐ Fire Department
 - ☐ Local Health Department
 - ☐ State Office of Emergency Services
 - ☐ National Response Center – if spill exceeds reportable quantity (RQ)
- Containment and cleanup of spills shall begin immediately

KEY APPROACHES

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

SR1	EMERGENCY SPILL CLEANUP PLANS
<p style="text-align: center;"><i>Inspection and Training</i></p> <ul style="list-style-type: none"> ■ Provide formal training in plan execution to key personnel, with additional training for first responder level personnel (29 CFR 1910.120). All employees should have basic knowledge of spill control procedures. 	
<p>REQUIREMENTS:</p> <ul style="list-style-type: none"> ■ Capital and OEM costs should be small to moderate depending on the types and quantities of chemicals stored on-site. ■ Maintenance costs include periodic training and equipment replacement. 	
<p>LIMITATIONS:</p> <ul style="list-style-type: none"> ■ Spills occurring after work hours in confined areas may go undetected until they impact off-site areas. 	
<p>RELEVANT RULES AND REGULATIONS:</p> <p>Industrial Activities Storm Water General Permit, April 17, 1997 .40 CFR 110.3 Discharge of Oil .40 CFR 122 Oil Pollution Prevention (SPCC/OPA Plan) .40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance .40 CFR 122-124 NPDES Regulations for Storm Water Discharges</p>	

Contaminated or Erodible Areas SC-40

Description

Areas within an industrial site that are bare of vegetation or are subject to activities that promote the suppression of vegetation are often subject to erosion. In addition, they may or may not be contaminated from past or current activities. If the area is temporarily bare because of construction, see SC-42 Building Repair, Remodeling, and Construction. Sites with excessive erosion or the potential for excessive erosion should consider employing the soil erosion BMPs identified in the Construction BMP Handbook. Note that this fact sheet addresses soils that do not exceed hazardous waste criteria (see Title 22 California Code of Regulations for Hazardous Waste Criteria).

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

Implement erosion and sediment control BMPs to stabilize soils and reduce pollutant discharges from contaminated or erodible surfaces.



Erosion and Sediment Controls

- Preserve natural vegetation whenever possible. See also EC-2 Preservation of Existing Vegetation, in the Construction BMP Handbook.
- Analyze soil conditions.
- Remove contaminated soil and dispose of properly.
- Stabilize loose soils by re-vegetating whenever possible. See also EC-4 Hydroseeding, in the Construction BMP Handbook.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered

	Good Housekeeping	
	Preventative Maintenance	
	Spill and Leak Prevention and	
	Material Handling & Waste Management	
	Erosion and Sediment Controls	✓
	Employee Training Program	✓
	Quality Assurance Record Keeping	✓



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Contaminated or Erodible Areas SC-40

- Utilize non-vegetative stabilization methods for areas prone to erosion where vegetative options are not feasible. Examples include:
 - ✓ Areas of vehicular or pedestrian traffic such as roads or paths;
 - ✓ Arid environments where vegetation would not provide timely ground coverage, or would require excessive irrigation;
 - ✓ Rocky substrate, infertile or droughty soils where vegetation would be difficult to establish; and
 - ✓ Areas where vegetation will not grow adequately within the construction time frame.

There are several non-vegetative stabilization methods and selection should be based on site-specific conditions. See also EC-16 Non-Vegetative Stabilization, in the Construction BMP Handbook.

- Utilize chemical stabilization when needed. See also EC-5 Soil Binders, in the Construction BMP Handbook.
- Use geosynthetic membranes to control erosion if feasible. See also EC-7 Geotextiles and Mats, in the Construction BMP Handbook.
- Stabilize all roadways, entrances, and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site. See also TC 1-3 Tracking Control, in the Construction BMP Handbook.
- Implement wind erosion control measures as necessary. See also WE-1 Wind Erosion Control, in the Construction BMP Handbook.



Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly install and maintain the erosion and sediment source control BMPs described above. Detailed information is provided in the Construction BMP Handbook.
- Use a training log or similar method to document training.



Quality Assurance and Record Keeping

- Keep accurate logs that document actions taken to maintain and improve the effectiveness of the erosion and sediment control BMPs described above.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Contaminated or Erodible Areas SC-40

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Many facilities do not have contaminated or erodible areas and will require no additional capital expenditures.
- For sites with contaminated or erodible areas, purchase and installation of erosion and sediment controls will require additional capital investments, and this amount will vary depending on site characteristics and the types of BMPs being implemented.
- Minimize costs by maintaining existing vegetation and limiting site operations on bare soils.

Maintenance

- The erosion and sediment control BMPs described above require periodic inspection and maintenance to remain effective. The cost of these actions will vary depending on site characteristics and the types of BMPs being implemented.
- Irrigation costs may be required to establish and maintain vegetation.

Supplemental Information

Stabilization of Erodible Areas

Preserving stabilized areas minimizes erosion potential, protects water quality, and provides aesthetic benefits. The most effective way to control erosion is to preserve existing vegetation. Preservation of natural vegetation provides a natural buffer zone and an opportunity for infiltration of stormwater and capture of pollutants in the soil matrix. This practice can be used as a permanent source control measure.

Vegetation preservation should be incorporated into the site. Preservation requires good site management to minimize operations on bare soils where vegetation exists. Proper maintenance is important to ensure healthy vegetation that can control erosion. Different species, soil types, and climatic conditions will require different maintenance activities such as mulching, fertilizing, liming, irrigation, pruning and weed and pest control.

The preferred approach is to leave as much native vegetation on-site as possible, thereby reducing or eliminating any erosion problem. However, assuming the site already has contaminated or erodible surface areas, there are four possible courses of action which can be taken:

- The area can be revegetated if it is not in use and therefore not subject to damage from site activities. In as much as the area is already devoid of vegetation, special measures are likely necessary. Lack of vegetation may be due to the lack of water and/or poor soils. The latter can perhaps be solved with fertilization, or the ground may simply be too compacted from prior use. Improving soil conditions may be sufficient to support the recovery of vegetation. Use process wastewater for irrigation if possible, and see the Construction BMP Handbook for further procedures on establishing vegetation.

Contaminated or Erodible Areas SC-40

- Watering trucks to prevent dust.
- Chemical stabilization can be used as an alternate method in areas where temporary seeding practices cannot be used because of season or climate. It can provide immediate, effective, and inexpensive erosion control. Application rates and procedures recommended by the manufacturer should be followed as closely as possible to prevent the products from forming ponds and creating large areas where moisture cannot penetrate the soil. See also EC-5, Soil Binders, in the Construction BMP Handbook for more information. Advantages of chemical stabilization include:
 - ✓ Applied easily to the surface;
 - ✓ Stabilizes areas effectively; and
 - ✓ Provides immediate protection to soils that are in danger of erosion.
- Contaminated soils should be cleaned up or removed. This requires determination of the level and extent of the contamination. Removal must comply with State and Federal regulations; permits must be acquired and fees paid.
- Non-vegetated stabilization methods are suitable for permanently protecting from erosion by water and wind. Non-vegetated stabilization should only be utilized when vegetation cannot be established due to soil or climactic conditions, or where vegetation may be a potential fire hazard.

Examples of non-vegetative stabilization BMPs are provided below:

- ✓ **Decomposed Granite (DG) and Gravel Mulch** are suitable for use in areas where vegetation establishment is difficult, on flat surfaces, trails and pathways, and when used in conjunction with a stabilizer or tackifier, on shallow slopes (i.e., 10:1 [H:V]). DG and gravel can also be used on shallow rocky slopes where vegetation cannot be established for permanent erosion control.
- ✓ **Degradable Mulches** can be used to cover and protect soil surfaces from erosion both in temporary and permanent applications. In many cases, the use of mulches by themselves requires routine inspection and re-application. See EC-3 Hydraulic Mulch, EC-6 Straw Mulch, EC-8 Wood Mulch, or EC-14 Compost Blankets of the Construction BMP Handbook for more information.
- ✓ **Geotextiles and Mats** can be used as a temporary stand-alone soil stabilization method. Depending on material selection, geotextiles and mats can be a short-term (3 months – 1 year) or long-term (1-2 years) temporary stabilization method. For more information on geotextiles and mats see EC-7 Geotextiles and Mats of the Construction BMP Handbook.
- ✓ **Rock Slope Protection** can be used when the slopes are subject to scour or have a high erosion potential, such as slopes adjacent to flowing waterways or slopes subject to overflow from detention facilities (spillways).

Contaminated or Erodible Areas SC-40

- ✓ **Soil Binders** can be used for temporary stabilization of stockpiles and disturbed areas not subject to heavy traffic. See EC-5 Soil Binders for more information. References and Resources.

References and Resources

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Santa Clara Valley Urban Runoff Pollution Prevention Program, <http://www.scvurppp-w2k.com/>.

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Drainage System Maintenance SC-44

Description

As a consequence of its function, the stormwater drainage facilities on site convey stormwater that may contain certain pollutants either to the offsite conveyance system that collects and transports urban runoff and stormwater, or directly to receiving waters. The protocols in this fact sheet are intended to reduce pollutants leaving the site to the offsite drainage infrastructure or to receiving waters through proper on-site conveyance system operation and maintenance. The targeted constituents will vary depending on site characteristics and operations.

Approach

Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.
- Develop and follow a site specific drainage system maintenance plan that describes maintenance locations, methods, required equipment, water sources, sediment collection areas, disposal requirements, and any other pertinent information.



Good Housekeeping

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered

 Good Housekeeping	✓
 Preventative Maintenance	✓
 Spill and Leak Prevention and Response	✓
 Material Handling & Waste Management	
 Erosion and Sediment Controls	
 Employee Training Program	✓
 Quality Assurance Record Keeping	✓



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Drainage System Maintenance **SC-44**

- ✓ Identify evidence of spills such as paints, discoloring, odors, etc.
- ✓ Record locations of apparent illegal discharges/illicit connections.
- ✓ Track flows back to potential discharges and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- ✓ Eliminate the discharge once the origin of flow is established.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” or similar stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges for additional information.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
 - ✓ Illegal dumping hot spots;
 - ✓ Types and quantities (in some cases) of wastes;
 - ✓ Patterns in time of occurrence (time of day/night, month, or year);
 - ✓ Mode of dumping (abandoned containers, “midnight dumping” from moving vehicles, direct dumping of materials, accidents/spills); and
 - ✓ Responsible parties.
- Post “No Dumping” signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges for additional information.



Preventative Maintenance

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
 - ✓ Immediate repair of any deterioration threatening structural integrity.
 - ✓ Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.

Drainage System Maintenance SC-44

- ❑ Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- ❑ Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Prioritize storm drain inlets; clean and repair as needed.
- ❑ Keep accurate logs of the number of catch basins cleaned.
- ❑ Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- ❑ Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- ❑ Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- ❑ Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- ❑ Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- ❑ Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- ❑ Conduct routine maintenance at each pump station.
- ❑ Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- ❑ Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- ❑ Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural state of any river, stream, or lake in California, must enter into a Stream or Lake Alteration Agreement with the Department of Fish and Wildlife. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Army Corps of Engineers and USFWS.



Spill Response and Prevention Procedures

- ❑ Keep your spill prevention control plan up-to-date.

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- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up all spills and leaks using “dry” methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.



Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site’s spill control plan and/or proper spill cleanup procedures.
- Have staff involved in detection and removal of illicit connections trained in the following:
 - ✓ OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).
 - ✓ OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).
 - ✓ Procedural training (field screening, sampling, smoke/dye testing, TV inspection).



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for drainage system maintenance, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Keep accurate logs of illicit connections, illicit discharges, and illegal dumping into the storm drain system including how wastes were cleaned up and disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Limitations and Work-Arounds

Provided below are typical limitations and recommended “work-arounds” for drainage system maintenance:

Drainage System Maintenance SC-44

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
 - ✓ Perform all maintenance onsite and do not flush accumulated material downstream to private property or riparian habitats.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, and liquid/sediment disposal.
 - ✓ Develop and follow a site specific drainage system maintenance plan that describes maintenance locations, methods, required equipment, water sources, sediment collection areas, disposal requirements, and any other pertinent information.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
 - ✓ Do not dump illegal materials anywhere onsite.
 - ✓ Identify illicit connections, illicit discharge, and illegal dumping.
 - ✓ Cleanup spills immediately and properly dispose of wastes.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the sanitary sewer system.
 - ✓ Collect all materials and pollutants accumulated in drainage system and dispose of according to local regulations.
 - ✓ Install debris excluders in areas with a trash TMDL.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and characteristics of the drainage system. Significant capital costs may be associated with purchasing water trucks, vacuum trucks, and any other necessary cleaning equipment or improving the drainage infrastructure to reduce the potential .
- Developing and implementing a site specific drainage system maintenance plan will require additional capital if a similar program is not already in place.

Maintenance

- Two-person teams may be required to clean catch basins with vacuor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.
- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Supplemental Information

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing re-suspension and overflow of a portion of the solids during storm events. Flushing prevents “plug flow” discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used if allowed or that fire hydrant line flushing coincide with storm sewer flushing.

Drainage System Maintenance SC-44

References and Resources

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http://www.knoxcounty.org/stormwater/manual/Volume%201/knoxco_swmm_v1_chap5_jan2008.pdf.

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General Description

Wet ponds (a.k.a. stormwater ponds, retention ponds, extended detention wet ponds) are constructed basins that have a permanent pool of water throughout the year (or at least throughout the wet season). The primary pollutant removal mechanism is settling while stormwater is retained in the wet pool. The basin supports plant species that provide pollutant removal by biological processes. This vegetation may also help reduce erosion of side slopes and trap sediments. Wet ponds differ from constructed wetlands primarily in having a greater average depth.

Wet ponds are an effective BMP in locations that have near-continuous inflows. While there are several different versions of the wet pond design, the most common modification is the extended detention wet pond, where storage is provided above the permanent pool in order to detain stormwater runoff and promote settling.

Inspection/Maintenance Considerations

In order to maintain the pond's design capacity, sediment must be removed occasionally and adequate resources must be committed to properly maintain peripheral aquatic vegetation, control vector production, and to maintain effective pool volume. Wet ponds can become a nuisance due to mosquito and midge breeding unless carefully designed and maintained. A proactive and routine preventative maintenance plan (which can vary according to location) is crucial to minimizing vector habitat. A vegetated buffer should be preserved around the pond to protect the banks from erosion and provide some pollutant removal before runoff enters the pond by overland flow.

Advanced BMPs Covered



Maintenance Concerns

- *Vegetation/Landscape Maintenance*
- *Endangered Species Habitat Creation*
- *Sediment and Trash Removal*
- *Bank Erosion*
- *Clogging of the Outlet*
- *Invasive/exotic Plant Species*
- *Vector Control*

Targeted Constituents

<i>Sediment</i>	■*
<i>Nutrients</i>	▲
<i>Trash</i>	■*
<i>Metals</i>	■
<i>Bacteria</i>	■
<i>Oil and Grease</i>	■*
<i>Organics</i>	■

Legend (Removal Effectiveness)

- Low ▲ Medium ■ High
- * Requires Pretreatment

Note: The removal effectiveness ratings shown in the table are for properly designed, sited, and maintained BMPs; some configurations will have variations in pollutant effectiveness.



Inspection Activities	Suggested Frequency
<input type="checkbox"/> Inspect after several storm events to confirm that the drainage system functions and bank stability and vegetation growth are sufficient.	Post construction
<input type="checkbox"/> Inspect for invasive vegetation, trash and debris, clogging of inlet/outlet structures, excessive erosion, sediment buildup in basin or outlet, cracking or settling of the dam, bank stability, tree growth on dam or embankment, vigor and density of the grass turf on the basin side slopes and floor, differential settlement, leakage, subsidence, damage to the emergency spillway, mechanical component condition, and graffiti.	Semi-annual, after significant storms, or more frequent as needed
<input type="checkbox"/> Inspect condition of inlet and outlet structures, pipes, sediment forebays, basin, and upstream and downstream channel conditions. Monitor drain times, and check for algal growth, signs of pollution such as oil sheens, discolored water, or unpleasant odors, and signs of flooding. <input type="checkbox"/> During inspections, note changes to the wet pond or the contributing watershed as these may affect basin performance.	Annual inspection
Maintenance Activities	Suggested Frequency
<input type="checkbox"/> Where permitted by the Department of Fish and Wildlife or other agency regulations, stock wet ponds regularly with mosquito fish (<i>Gambusia</i> spp.) to enhance natural mosquito and midge control and regularly maintain emergent and shoreline vegetation to provide access for vector inspectors and facilitate vector control if needed.	Post construction
<input type="checkbox"/> Coordinate with the local mosquito and vector control agency to control mosquitos and midges, if necessary. <input type="checkbox"/> Remove sediment from outlet structure. Dispose of properly. <input type="checkbox"/> Remove accumulated trash and debris in the basin, inlet/outlet structures, side slopes, and collection system as required. <input type="checkbox"/> Repair undercut areas and erosion to banks and basin.	Semi-annual, after significant storm events
<input type="checkbox"/> Maintain protected vegetated buffer around pond. Maintain vegetation in and around basin to prevent any erosion or aesthetic problems. Minimize use of fertilizers and pesticides. Reseed if necessary. <input type="checkbox"/> Manage and harvest wetland plants. <input type="checkbox"/> Perform structural repair or replacement, as needed.	Annual maintenance (if needed)
<input type="checkbox"/> Remove sediment from the forebay and regrade when the accumulated sediment volume exceeds 10-20% of the forebay volume. Clean in early spring so vegetation damaged during cleaning has time to re-establish.	5- to 7-year maintenance
<input type="checkbox"/> Remove sediment when the permanent pool volume has become reduced significantly (sediment accumulation exceeds 25% of design depth), resuspension is observed, or the pond becomes eutrophic.	>5 year maintenance

Additional Information

In most cases, surface sediment removed from a wet pond during periodic maintenance to restore capacity does not contain toxic materials (e/g metals, oil and grease, or organics) at levels posing a hazardous concern. Studies to date indicate that pond sediments are generally below toxicity limits and can be safely landfilled or disposed onsite. Onsite sediment disposal is always preferable (if local authorities permit) as long

as the sediments are deposited away from the perimeter to prevent their reentry into the basin. Sediments should be tested for toxic materials in compliance with current landfill disposal requirements. Sediments containing high levels of pollutants should be disposed of properly.

Light equipment, which will not compact the underlying soil, should be used to remove the top layer of sediment. The remaining soil should be tilled and revegetated as soon as possible.

Wet ponds require a regular source of base flow if water levels are to be maintained. If base flow is insufficient during summer months, supplemental water may be necessary to maintain water levels.

Special considerations are required for wet ponds to be effective in cold climates – refer to the Stormwater Managers Resource Center for more information.

References

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APPENDIX F

Dry Weather Inspection Forms

Monthly Dry Weather Visual Observation Form

(Form due by the 5th of the month following the observation month)

Facility Name: _____	Follow-up Requested? <input type="checkbox"/>
Facility Address: _____	
Observer Name: _____	PPT <input type="checkbox"/> or Alternate <input type="checkbox"/> Phone/email: _____
Signature: _____	Change in PPT or Alternate? Yes <input type="checkbox"/> Observation Date/Time: _____

Are all impervious surfaces assessed regularly for spills, stains and other debris? Yes or No

Has there been a change in Onsite Chemical Inventory? Yes or No (If Yes, complete and include Stored Material Checklist)

Has a spill occurred since the previous observation? Yes or No

Was a Spill/Incident Report Form submitted? Yes or No (If "no", complete and include Spill/Incident Report Form)

Is Facility Map up to date? Yes No ; Is Spill Response Plan up to date? No or Yes

Part I. Non-Storm Water Discharge (NSWD) Observations. (Check All Applicable)

Discharge Type	A. Discharge Observed?	B. Evidence of prior/current/potential/source of NSWD and/or source? (Y/N)	C. Discharge occurred in the facility? (Y/N)	D. Describe Pollutant Characteristics (Check If Present)					E. BMPs In Place? (Y/N)	F. Dates of Discharge, BMPs Utilized, Describe Discharge Observation. Include supplemental photos if applicable.
				Sheen	Turbidity	Floating Material	Odor	Other		
AUTHORIZED	Fire Hydrant Flushing									
	Potable Water Sources									
	Drinking Fountain Water									
	Atmospheric Condensates									
	Irrigation Drainage/Landscape									
Others										
UNAUTHORIZED	Rinse/Wash Water									
	Improperly Disposed/ Dumped									
	Spilled Material									
	Leaked Material									
	Illicit Connection									
	Possible Illicit Connection									
	Food Waste									
Other										

Comments and Observations

Part II BMP Observation, Implementation, Deficiencies and Corrective Actions

Description of BMPs (Reference BMP Fact Sheet Number); SWPPP Table 4.1 shows summary of the BMPs at ONT.	A. Facility BMPs (Check All Applicable); Previously reported BMPs are located in Table 4.2 of the SWPPP	B. Change in BMP use on facility? N ew or E liminated Use	C. Implementation Location (Check all Applicable)				D. Implementation Frequency Routine (Describe: D aily, W eekly, M onthly, O thers, or A s Needed)	E. BMP Deficient? Y es (describe in "Comments") or N o or Not Applicable - N A	F. BMP Comments (Corrective Actions); Attach Any Supporting Photos (including description)
			Outdoor Industrial Activities Areas	Outdoor Industrial Equipment and Storage Areas	Chemical Storage Areas	Others (Describe all other potential source of industrial pollutants)			
Elimination of NSWD (SC1); Illicit Connection									
Aircraft, Ground Vehicle, and Equipment Maintenance (SC2)									
Aircraft, Vehicle and Equipment Fueling (SC3)									
Aircraft, Vehicle and Equipment Washing (SC4)									
Aircraft Deicing (SC5)									
Outdoor Material Handling (SC6)									
Outdoor Storage of Significant Material (SC7); Storage Tanks and Uncovered Outdoor Storage									
Waste Handling and Disposal (SC8); Housekeeping and Uncovered Dumpsters									
Building and Grounds Maintenance (SC9); Housekeeping									
Storm Water Pollution Prevention (SC10); Employee awareness training and recordkeeping Education									
Lavatory Service Operations (SC11)									
Outdoor Washdown/Sweeping (SC12); Stains on pavement/concrete									
Fire Fighting Foam Discharge (SC13)									
Potable Water System Flushing (SC14)									
Runway Rubber Removal (SC15)									
Oil/Water Separators (TC1)									
Emergency Spill Cleanup Plan (SR1); Spill kits and Plan Posted									
Contaminated or Erodible Surfaces (CASQA SC-40)									
Drainage System Maintenance (CASQA SC-44)									
Wet Pond (CASQA - TC-20)									
Extended Detention Basin (CASQA TC-22)									
Media Filter (CASQA TC-40)									
Gravity Separator (CASQA MP-51)									

Inspector Name: _____
Title: _____
Signature: _____

DEER CREEK	(Observed east of the Mildred Ave, Ontario Blvd and Mission Blvd junction)				
	Discharge Observed:		Discharge Type/Source(s):		Discharge Characteristics:
Inspection Date:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Authorized	Unauthorized	Flow Rate:
Inspection Time:	Corrective Actions:				Color:
					Odors:
				Sheen:	
				Turbidity:	
				Cloudiness:	
				Suspended Material:	
				Floating Material:	

CUCAMONGA CHANNEL	(Observed at the bottom of the rocky incline, inside a gated area, south of the east end of Service Road South located inside the airfield)				
	Discharge Observed:		Discharge Type/Source(s):		Discharge Characteristics:
Inspection Date:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Authorized	Unauthorized	Flow Rate:
Inspection Time:	Corrective Actions:				Color:
					Odors:
				Sheen:	
				Turbidity:	
				Cloudiness:	
				Suspended Material:	
				Floating Material:	

N CUCAMONGA CHANNEL	(Observed from the service road running parallel on the north side of and midway through runway 26R-8L)				
	Discharge Observed:		Discharge Type/Source(s):		Discharge Characteristics:
Inspection Date:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Authorized	Unauthorized	Flow Rate:
Inspection Time:	Corrective Actions:				Color:
					Odors:
				Sheen:	
				Turbidity:	
				Cloudiness:	
				Suspended Material:	
				Floating Material:	

W CUCAMONGA CHANNEL	(Observed from the east border of 2299 E. Avion Street)				
	Discharge Observed:		Discharge Type/Source(s):		Discharge Characteristics:
Inspection Date:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Authorized	Unauthorized	Flow Rate:
Inspection Time:	Corrective Actions:				Color:
					Odors:
				Sheen:	
				Turbidity:	
				Cloudiness:	
				Suspended Material:	
				Floating Material:	

Annual Comprehensive Facility Compliance Evaluation

Facility Name:	Facility Address:
Inspector Name:	Inspector Title:
Signature:	Date and Time:

PART I. Records Review

Were all sampling, visual observation and inspection records reviewed?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Explanation:
--	--	--------------

PART II. Industrial Activity and BMP Inspection

Potential Pollutant Source / Industrial Activity Area	If Yes, to Either Question, Complete the Next Two Columns of this Form		Describe Deficiencies in BMPs or BMP Implementation	Describe Additional/Revised BMPs or Corrective Actions and Their Date(s) of Implementation
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		

Annual Comprehensive Facility Compliance Evaluation (Continued)

PART II. Industrial Activity and BMP Inspection (Continued)				
Potential Pollutant Source / Industrial Activity Area	If Yes, to Either Question, Complete the Next Two Columns of this Form		Describe Deficiencies in BMPs or BMP Implementation	Describe Additional/Revised BMPs or Corrective Actions and Their Date(s) of Implementation
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		

PART II. Industrial Activity and BMP Inspection (Continued)				
Potential Pollutant Source / Industrial Activity Area	If Yes, to Either Question, Complete the Next Two Columns of this Form		Describe Deficiencies in BMPs or BMP Implementation	Describe Additional/Revised BMPs or Corrective Actions and Their Date(s) of Implementation
	Have any BMPs Not Been Fully Implemented?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
	Are Additional / Revised BMPs Necessary?	Yes <input type="checkbox"/> No <input type="checkbox"/>		

PART III. Drainage Area Inspection

Drainage Area	Stormwater Discharge Locations	Receives Industrial Stormwater?
		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Yes <input type="checkbox"/> No <input type="checkbox"/>

PART IV. Additional Assessments

Additional Comments or Assessments:

APPENDIX G

Storm Event Forms

APPENDIX H

Field Meter Instructions

WATER QUALITY TESTER (COMBO PEN)



(99720)

Supplied with :

Meter x1 , Batteries x2, manual x 1 , carrying pouch x1 , Hard carrying case x1 , wrist strip , soaking solution , pH solution , Conductivity solution x1 , Conductivity electrode , pH electrode (built-on)

Optional electrode: ORP electrode

FEATURES: 99702 Four (4) in one Con/TDS/Salt/Temp. combo pen

- A combo smart pen , buy one get 4 parameters with less cost
- Powered by AAA x 4 pcs batteries
- Dual display Conductivity or TDS or Salt and temperature readings



Self-calibrate with supplied conductivity solution
Supplied with Meterx1 , Cond. solution x1 , Soak solution x 1 , batteries x 4 , manual and wrist strip, hard case.

Model No.	99702 (4 in one)		
Type	Cond.	TDS	Salt
Range	0~2000µS, 2.00~20.00mS	0~1300ppm 1.30~13.00ppt	0~1000ppm, 1.00~12.00ppt
Accuracy	±2%FS (Cond. TDS Salt)		
Resolution	1µS/ 0.01mS	1ppm/ 0.01ppt	1ppm/ 0.01ppt
ATC	0~50°C		
Calibration	Cond: 0µS/ 1413µS/ 12.88mS		

FEATURES :

- A very smart pen type combo water quality tester, buy one get more than 6 parameter measurement ,microprocessor based for fast and accurate display
- A new shape design powered by AAA DC1.5V x 4 pcs batteries
- Simple to calibrate by one button, may float on water
- Compact housing Ip57 water resistant design
- Large LCD display pH or ORP or Cond. or TDS or Salt and temperature simultaneously
- ATC stands for Automatic Temperature Compensation
- MSC stands for Manually salinity calibration
- MAC stands for Manually altitude compensation
- Data hold freezes current reading, Maximum/Minimum function
- Temp.C and F are selectable, battery low indication. Auto power off in 10 minutes
- Easy to replace with new electrode to maintain meter life
- Replacement electrode modules are easy to replace and the type of electrode would be recognized automatically and shown in display during insertion
- Wide range pH measurement from -2 to 16

Model No.	99720 (6 in one)		
Type	pH	ORP	Temp.
Range	-2~16.00	-1000~1000	0~90°C
Accuracy	±0.01+1dg	±2+1dg	±0.2°C+1dg
Resolution	0.01pH	1mV	0.1°C
ATC	0~90°C		
Calibration	pH: 4.00/ 7.00/ 10.01		
Type	Cond.	TDS	Salt
Range	0~2000µS, 2.00~20.00mS	0~1300ppm 1.30~13.00ppt	0~1000ppm, 1.00~12.00ppt
Accuracy	±2%FS (Cond. TDS Salt)		
Resolution	1µS/ 0.01mS	1ppm/ 0.01ppt	1ppm/ 0.01ppt
ATC	0~50°C		
Calibration	Cond: 0µS/ 1413µS/ 12.88mS		
Power	AAA batteries x 4 pcs		
Weight	Meter : 135 g (battery included), Kit: 780g		
Dimension	Meter : 195 X40x36mm (Kit: 230x205x50mm)		

APPENDIX I

Storm Event Log

ATTACHMENT A

2014 Industrial General Permit

Available on-line at:

http://www.waterboards.ca.gov/water_issues/programs/storm_water/industrial.shtml.