STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
AND
BEST MANAGEMENT PRACTICES (BMP)

Prepared for:

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SWPPP Preparation Date

01/07/2022

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SWPPP Executive Summary

According to federal and state regulations, the Birmingham Airport Authority (BAA) is required to obtain permit coverage for storm water discharges associated with industrial activities at the Birmingham-Shuttlesworth International Airport. Therefore, a General Industrial National Pollutant Discharge Elimination System (NPDES) permit was obtained by the BAA from the Alabama Department of Environmental Management.

As a condition of the NPDES permit, the BAA must develop and follow a Storm Water Pollution Prevention Plan (SWPPP) that documents the Best Management Practices (BMPs) used to prevent and control pollution of storm water associated with the industrial activities at the Airport.

This SWPPP has been developed for the Birmingham Airport Authority, air carrier tenants and air cargo tenants at the Birmingham-Shuttlesworth International Airport. It describes the general risks of storm water pollution at the facility as well as the BMPs used throughout the facility to minimize these risks. Details of reporting requirements, record keeping and individual responsibilities are also included.

This SWPPP is considered a "living document" and is modified as needed to reflect any changes in conditions that may affect the storm water discharge from the Birmingham-Shuttlesworth International Airport.

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TABLE OF CONTENTS

APPENDICES

*Appendix G is not included in SWPPP copies provided to tenants.

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

ADEM	Alabama Department of Environmental Management
AEMA	Alabama Environmental Management Act
AST	Aboveground Storage Tank
BAA	Birmingham Airport Authority
BMP	Best Management Practice
BSIA	Birmingham-Shuttlesworth International Airport
CFR	Code of Federal Regulations
CSCE	Comprehensive Site Compliance Evaluation
CWA	Clean Water Act
BD	Drainage Basin
DMR	Discharge Monitoring Report
ECO	Environmental Compliance Officer
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
FBO	Fixed Base Operation
FR	Federal Register
FWPCA	Federal Water Pollution Control Act
mgd	Million gallons per day
MSDS	Material Safety Data Sheet
MTBE	Methyl tert-butyl ether
NPDES	National Pollutant Discharge Elimination System
OWS	Oil Water Separator
QCI	Qualified Credentialed Inspector
RCRA	Resource Conservation and Recovery Act
SIC	Standard Industrial Classification
SPCC	Spill Prevention, Control, and Countermeasures (Plan)
SWPPP	Storm Water Pollution Prevention Plan
WQA	Water Quality Act
WWTP	Wastewater Treatment Plant
UST	Underground Storage Tank

DISTRIBUTION LIST AND DOCUMENT CONTROL

Copy No.	Assignment	Title	Location
1	John Rostas	Planning Manager	Planning and Development
2	Marcelo Lima	Vice President	Planning and Development
3	Jim Payne	Chief Operating Officer	Operations
4	Cameron Thompson	Vice President	Operations
5	Matthew Nelson	Vice President	Facilities
6	Curtis James	Supervisor	Facilities
7			

The BAA's official copy of the SWPPP & BMP will be kept in the Planning and Development department by the Planning Manager. This copy shall be available for inspection by ADEM.

REVISION HISTORY Part IV.A.4.d

A log of all SWPPP revisions will be maintained by the Planning and Development department in the BAA's official copy. This log is included in Appendix F.

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MANAGEMENT APPROVAL

Part IV.A.1.e & Part IV.A.1.h.

The Birmingham Airport Authority (BAA) is committed to maintaining the highest standards for storm water pollution prevention through the implementation of this Storm Water Pollution Prevention Plan (SWPPP) and Best Management Practices (BMP) Plan. This SWPPP & BMP has the full approval of the BAA management. The BAA's management will commit the necessary resources to implement the measures described in this Plan.

Mr. John Rostas is the designated Planning Manager for the BAA and will be responsible for the day to day implementation of the SWPPP and BMP Plan. Mr. Rostas has the full approval of the BAA to commit the necessary resources to implement the Plan as described.

The BAA will abide by this plan and the directions of Mr. John Rostas to act in accordance with General NPDES permit ALG140453.

Authorized Facility Representative:

Ronald F. Mathieu

Mr. Ronald F. Mathieu, President / CEO
Birmingham Airport Authority

4/6/22
Date

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1.) Introduction

Storm water discharges have been identified as a significant source of water pollution in numerous nationwide studies on water quality. "Storm Water Associated with Industrial Activity" is defined as: Storm water runoff that exits any conveyance that is used for collecting and conveying storm water directly related to manufacturing, processing, material storage, and waste material disposal areas (and similar areas where storm water can contact industrial pollutants related to the industrial activity) at any industrial facility.

1.1) Background

The Birmingham Airport Authority (BAA) operates and maintains the Birmingham-Shuttlesworth International Airport (BSIA) facility. The BAA is the organization authorized to discharge storm water associated with industrial activity at the BSIA facility.

The permitted discharge is in accordance with the provisions of the Federal Water Pollution Control Act (FWPCA), the Alabama Water Pollution Control Act (AWPCA) and the Alabama Environmental Management Act (AEMA). The BAA's General National Pollutant Discharge Elimination System (NPDES) permit number is ALG140453. A copy of the permit is included as Appendix A. The initial permit term is October 1, 2007, through September 30, 2012. The BAA submitted a Notice of Intent to renew the permit in June 2012.

The NPDES requires the permit holder to prepare and implement a BMP Plan for the facility and to modify the BMP as conditions that may affect the storm water discharge from industrial facilities change. The Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5320-15A "Management of Airport Industrial Waste" advises airports to prepare a SWPPP that "applies best management practices to eliminate, prevent or reduce pollutants in storm water runoff associated with particular airport industrial activities." This Plan has been prepared to meet the NPDES requirements and uses guidance from AC 150/5320-15A.

The SWPPP for the BAA was initially developed by US Infrastructure, Inc. In July 2007, J2F, Inc. was retained by the BAA to prepare a new SWPPP. In support of the new plan, J2F, Inc. performed Comprehensive Site Compliance Evaluation (CSCE) inspections at the airport facilities and storm water outfalls at the BSIA from May 2007 to December 2007. Volkert was retained by the BAA in March 2012, to renew the BAA's General NPDES permit and update the SWPPP and BMP to reflect the current conditions at the BSIA. Goodwyn Mills Cawood, LLC was retained by BAA to complete the CSCE in 2019 and retained again in 2021 to renew the BAA's General NPDES permit and update the SWPPP and BMP to reflect the current conditions at the BSIA.

1.2) Federal Stormwater Regulations

In 1972 Congress passed the FWPCA, also known as the Clean Water Act (CWA), to restore and maintain the quality of the nation's waterways. The ultimate goal was to make sure that river and streams were fishable, swimmable, and drinkable. In 1987, the Water Quality Act (WQA) added provisions to the CWA that allowed the EPA to govern storm water discharges from industrial activities. The EPA published the final notice for Phase I of the Multi-Sector General Storm Water Permit program (Federal Register Volume 60 No. 189, September 20, 1995, page 50804) in 1995 which included provisions for the development of a SWPPP by each industrial facility discharging storm water, including airports. The EPA utilized Standard Industrial

Classification (SIC) Codes to determine the applicability of the Storm Water Permit program to various industries.

Section 402(p) of the 1987 Amendments to the CWA established the initial framework for regulation of industrial storm water discharges under the NPDES permit program. Final NPDES storm water regulations were promulgated in the November 16, 1990, Federal Register (55 FR 47990) and are contained in 40 CFR Parts 122, 123, and 124. These regulations, which were amended on March 21, 1991, (56 FR 12100), November 5, 1991, (56 FR 56554), April 2, 1992, (57 FR 11412), and December 18, 1992, (57 FR 60447), defined the term "storm water discharges associated with industrial activity" and established NPDES permit application requirements for storm water discharges associated with industrial activity. The regulations require that operators of industrial facilities that discharge storm water from a point source to the waters of the United States obtain a permit.

According to both federal and state regulations, an industrial facility is subject to the storm water permit regulations if its SIC code falls within one of 11 categories specified in 40CFR 122.26(b)(14)(i)-(xi). The 11 categories of industrial activities subject to NPDES storm water regulations are summarized as follows:

i. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR Subchapter N (i.e., discharges already subject to NPDES regulations);
ii. Facilities with Standard Industrial Classification (SIC) codes with initial digits of 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29,31, 32,(except 323), 33, 344, or 373 (i.e., heavy manufacturing operations);
iii. Facilities with SIC codes with initial digits from 10 through 14 (i.e., mining, oil and gas operations);
iv. Hazardous waste treatment, storage, or disposal facilities operating under interim status or under the Resource Conservation and Recovery Act (RCRA), Subtitle C (i.e., hazardous waste treatment, storage, and disposal facilities);
iv. Landfills receiving industrial waste including open dumpsites;
v. Recycling facilities with SIC codes of 5015 or 5093 (i.e., metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards);
vi. Steam electric generating facilities and coal handling sites;
vii. Transportation facilities with SIC codes with initial digits of 40, 41, 42 (except 4221-4225), 43, 44, 45, or 5171;
ix. Domestic sewage treatment works with design flow rates greater than one million gallons per day (mgd);
x. Construction activities disturbing one acre or more;
xi. Facilities with SIC codes with initial digits of 20, 21, 22, 23, 2434, 25, 265,267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221 through 4225 (i.e., light industrial activity).

These categories constitute the definition of industrial activity, and if a discharger does not fit the requirements for any of the categories, a storm water permit is not required.

Categories of industrial activity conducted by the BAA include categories viii and x. Only those facilities or activities having a point source discharge to the waters of the United States are subject to the storm water regulations.

Additionally, the EPA's Final Rule for airport deicing operations became effective on June 16, 2012. This update to the Plan incorporates a discussion of the new guidelines and potential methods to manage the spent materials used for deicing at the BSIA. See Section 3.2.6.

1.3) State NPDES Stormwater Permitting Program

The provisions of the CWA authorized the state of Alabama to administer and monitor water quality. A comprehensive program of environmental management for the state was established in 1982 with the passage of the AEMA by the Alabama Legislature. The law created the Alabama Environmental Management Commission and ADEM, which absorbed several commissions, agencies, programs and staffs that had been responsible for implementing environmental laws.

ADEM administers all major federal environmental laws, including the Clean Air Act, CWA and Safe Drinking Water Act and federal solid and hazardous waste laws. ADEM assumed these responsibilities only after demonstration that state laws and regulations are at least equivalent to federal standards and that the state has matching funds and personnel available to administer the programs.

ADEM implements the NPDES storm water permitting program in the State of Alabama. ADEM's authority to assume delegation of the NPDES program is set forth in Section 22- 22-1 & A-1 to 22-22-14 & A-15 Code of Alabama 1975. As the NPDES storm water permitting authority, ADEM is responsible for issuing rules and permits covering regulated entities, managing and reviewing permit applications, and performing compliance and enforcement activities.

As discussed in the preceding section, the EPA published new effluent limitations and guidelines for airport deicing discharges. ADEM, as the administrator of the state's NPDES permit program, is tasked with the application and enforcement of these new effluent regulations. At the time of this update and permit renewal, ADEM had not established official requirements regarding the applicability, implementation and enforcement of the new federal airport deicing discharge regulations. The procedures and practices included in this document will be re-evaluated once ADEM establishes official policies for deicing activities.

1.4) Purpose of the Plan

This Plan has been prepared in accordance with good engineering practices and has four major objectives:

- Identify potential sources of pollution associated with industrial activities that could adversely affect the quality of storm water discharge from BSIA
- Facilitate compliance with regulatory requirements
- Implement Best Management Practices (BMP)
- Identify existing measures and recommend future measures which will:
    - Reduce or eliminate the discharge of pollutants to storm water runoff due to industrial activity

- Eliminate non-storm water discharge to the storm water sewer system

1.5) SWPPP Organization

The Plan is intended to assist BAA personnel with the implementation of practices to facilitate compliance with the NPDES permit. It is a working document to be updated whenever necessary to achieve the objectives of the storm water regulations. The contents of this Plan are described below.

- Section 1.0 - presents a brief summary of federal and state storm water regulations and their application to BSIA facility.
- Section 2.0 - includes a site map and a description of the facility and the existing storm water drainage system and new improvements being constructed at the BSIA.
- Section 3.0 - includes a description of the potential pollutant sources at the BSIA. It also includes an inventory of significant materials and storage tanks, an evaluation of the risk of storm water pollution from various activities, and regulations concerning spent deicing effluent.
- Section 4.0 - identifies BMPs that are currently implemented at the BSIA to prevent pollutants from entering storm water runoff. This section also presents additional BMPs that are recommended for implementation to facilitate compliance with the requirements of the NPDES.
- Section 5.0 - describes the CSCE that should be conducted annually.
- Section 6.0 - contains information on administrative procedures that have been developed for the BSIA. This system identifies responsible parties/personnel, and contains provisions for Plan review, revisions, reporting, and record keeping as required by the NPDES.
- Section 7.0 - presents references used in the preparation of this Plan.

The Plan also includes the following appendices:

APPENDIX A NPDES permit (Current)

APPENDIX B MSDSs

APPENDIX C Personnel Training Program

APPENDIX C-1 Storm Water Pollution Prevention Training Log

APPENDIX D-1 Storm Water System Inspection Checklist

APPENDIX D-2 Preventative Maintenance Checklist

APPENDIX D-3 CSCE Checklist

APPENDIX E Structural BMP Fact Sheets

APPENDIX F Record of Revisions-Birmingham Airport Authority SWPPP & BMP Plan

APPENDIX G Tenant Activities/Operations*

APPENDIX H SWPPP Responsibilities

APPENDIX I Rental Car Tenant NPDES Permit Response

APPENDIX J Air Carrier/Air Cargo Tenant Annual Compliance Certification

*Appendix G is not included in SWPPP copies provided to tenants.

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2.) Facility Description

This section provides a description of the facility location, site description, and drainage system at the BSIA.

2.1) Facility Location

The BSIA occupies approximately 2,200 acres in central Alabama, northeast of the City of Birmingham (N33° 33'49.99", W86° 45' 08.36"). It is located in Jefferson County, Alabama at 5900 Messer Airport Highway. It lies north of Interstate 20/59 and is bounded to the north by East Lake Boulevard. An overall site location map is included as Figure 2.2-1.

2.2) Facility & Tenant Descriptions

The airport facility handles approximately 7,900 passengers per day as well as vendors, contractors, military personnel and BAA employees working at the facility.

The BSIA is operated by the BAA. A portion of the airport property is leased to the Alabama Air National Guard, Army Aviation support facility, air carriers, air cargo tenants and corporate tenants for private hangar space.

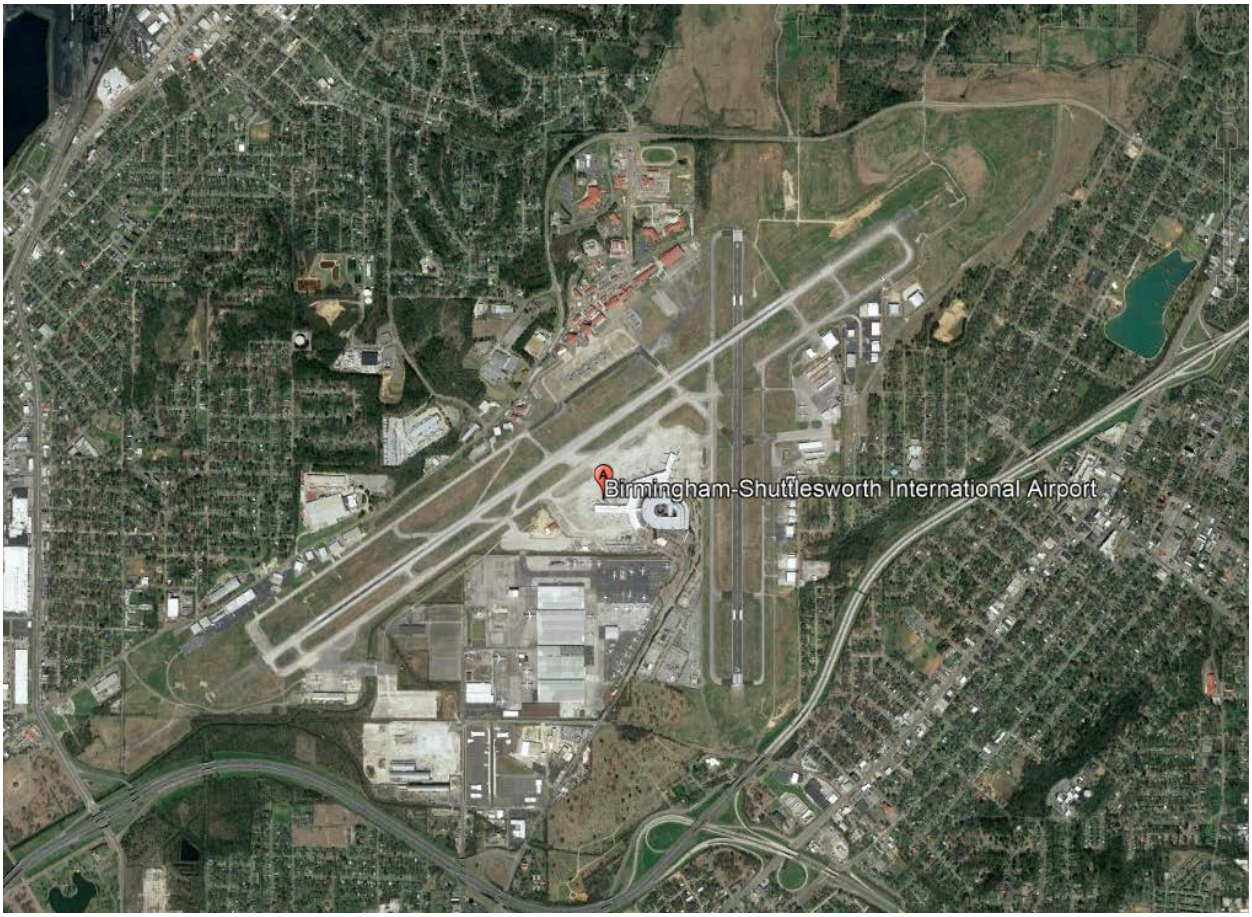
The operations of air carriers and air cargo tenants are comingled with the operations of the BAA. Thus, the air carriers and air cargo tenants do not have separate NPDES permits. Rather, the air carrier and air cargo tenants must certify annually their compliance with all requirements, procedures, and policies contained in the BAA's NPDES permit, SWPPP & BMP and SPCC & ERP (See Appendix J).

The Alabama Air National Guard, Army Aviation support facility, and corporate tenants perform industrial activities outside of the operational control of the BAA and, therefore, are required to obtain their own NPDES permit for any industrial activity performed in their leasehold. These tenants are not included in or covered by the BAA's NPDES permit. Thus, every corporate tenant is required to either obtain a separate NPDES permit for their specific activities and provide a copy to the BAA or provide to the BAA written documentation from ADEM stating that their operations do not require an NPDES permit. Corporate tenants who are required to have their own SPCC and/or SWPPP/BMP plans must ensure that their plans meet or exceed the requirements set forth in the BAA's plans and must provide a copies of those plans to the BAA.

The industrial activities of rental car tenants are exempt from the NPDES program due to their SIC code (7514). (See Appendix I) Therefore, they are not included in the BAA's NPDES permit or this SWPPP & BMP. However, because the rental car tenants operate on property owned by the BAA, the rental car tenants must prepare site specific SPCC and BMP plans. Further, the rental car companies must ensure that their SPCC and BMP plans meet or exceed the requirements set forth in the BAA's plans and must provide copies of those plans to the BAA.

A list of tenant names, locations, and activities/operations is included as Appendix G in the BAA's official copy. This appendix is not included with copies of the SWPPP provided to tenants.

Figure 2.2-1 – BSIA Site Location Map



2.3) Stormwater Drainage System

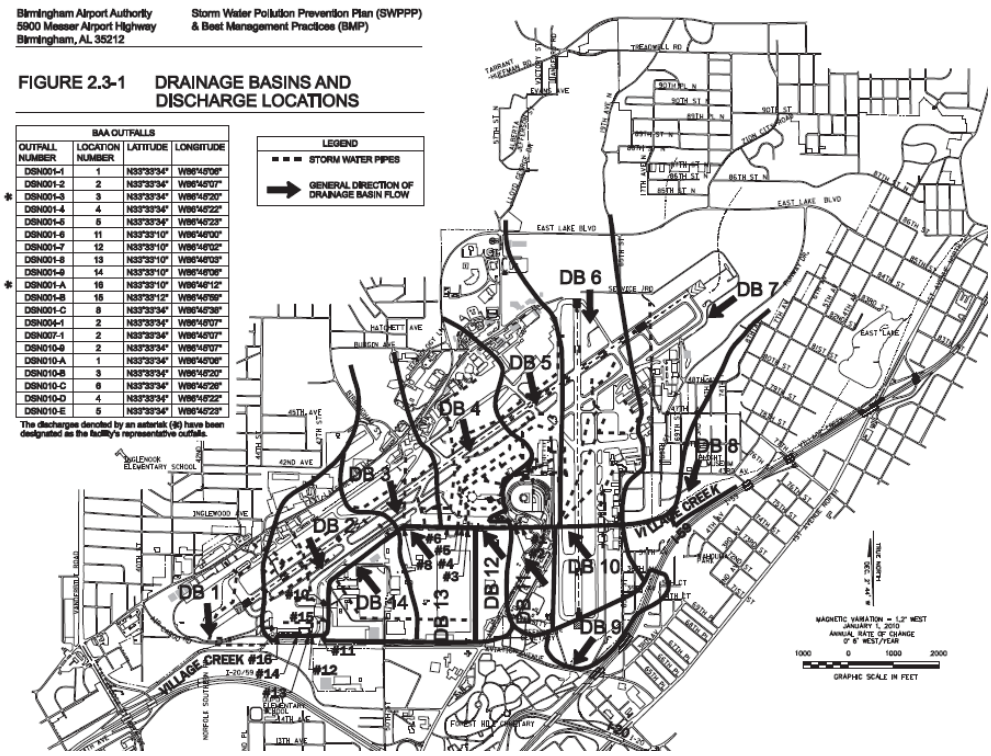
Storm water flows at the BSIA can be attributed to 14 distinct drainage basins. These basins and their associated flow patterns are shown on the drainage basins and outfall map, Figure 2.3-1.

Detailed diagrams of the storm water system, sanitary system, and topographic layouts are not included in this plan due to the large number of blueprints in the series.

2.3.1) Drainage Ditches, Detention Ponds & Drainage Improvements

Storm water runoff through BSIA is controlled and restricted by a combination of man-made and natural structures. These include natural and constructed drainage ditches and storm water detention ponds. The storm water drainage facilities are indicated on Figure 2.3-1.

Figure 2.3-1 – Drainage Basins and Discharge Locations



Drainage ditches and swales are used throughout the facility to collect storm water from local areas and channel it to a series of arterial ditches that channel the flows into the storm water outfalls or detention ponds. Local and arterial ditches and swales typically have modest gradients, are well-vegetated, and feature porous soils. As a result, runoff from minor rainfall events will infiltrate into the soil before reaching an outfall.

The BSIA has constructed storm water detention ponds to control storm water and to capture sediments from the facility. The ponds are located north and south of Runway 6-24 and north of Runway 18-36. The ponds capture water from the property and direct storm water to outfalls that are connected to the arterial drainage ditches. These arterial drainage ditches carry storm water runoff to Village Creek and its connected tributaries. The ponds are designed as detention structures for storm water and its sediment burden. During heavy rainfall events, most of the captured sediment material will be filtered out through natural filtration and settlement prior to discharge. Severe storm events, however, may cause the ponds to overflow through relief outlets that channel the water back into arterial drainage ditches for immediate delivery to an outfall.

During construction of the Terminal Modernization project, runoff will be directed to the arterial ditches and discharge from the designated outfalls. Once construction is complete, runoff will be reduced because the facility will collect rain water from the rooftop. This rain water will be directed to cisterns inside the facility where it will be used to provide water for the toilets and urinals in the restrooms. This water will be discharged into the municipal sewer system, not the airport's storm

water collection and treatment system. Any rooftop rain water not collected and routed to the cisterns will be directed to new structures in the storm water drainage system and be discharged through existing outfalls along Village Creek. Among the new drainage improvements associated with the Terminal Modernization project are new drainage conduits, new drop inlets, and a new oil water separator (OWS) (See Figure 4-3). Some existing underground storm water drainage conduits, drop inlets, and other storm water structures will be removed and/or replaced by these new utilities. There will be no additional discharge from the Terminal Modernization improvements.

2.4) Industrial Activities

The BAA's conducts industrial activities that are classified within categories (viii) and (x) as defined in Section 1.2. All construction activities at the BSIA that disturb one acre or more of land fall under category (x), (40 CFR 122.26(b) (14) (i)-(xi)). ADEM requires that activities under category (x) obtain a separate NPDES construction permit ("ALR" permits). The specific activities of the BAA which fall under category (viii) are described in more detail in Section 3.2. These activities require an NPDES permit (ALG permit) and are generally performed within Drainage Basins DB02 thru DB05 and DB14.

3.) Potential Pollutant Sources

This section contains a description of the significant materials inventory and other potential sources owned by the BAA that may contribute pollutants to storm water runoff at the BSIA.

3.1) Significant Materials Inventory

"Significant materials," as defined in 40 CFR 122.26, are substances related to industrial activities such as process chemicals, raw materials, fuels, pesticides, fertilizers, and hazardous substances. When these substances enter storm water runoff they may be carried to a receiving water body and potentially impact the environment. Although "wastes" are not specifically defined in 40 CFR as potential contributors to storm water pollution, they also may be a significant source of storm water pollution if not properly stored, handled, or managed. For the purposes of this SWPPP and BMP Plan, it is assumed that the term "significant materials" includes wastes in addition to its regulatory definition.

Due to the type of operations conducted at BSIA, there are no significant materials produced onsite since no manufacturing is performed. Table 3.1-1 presents the significant materials owned and used by the BAA. Locations of the significant material presented in Table 3.1-1 are shown in Figure 3.1-1. These significant material locations have the potential to impact storm water at the facility.

Significant materials contained in aboveground storage tanks are further discussed in Section 3.2.8. Each tenant's significant material inventories are contained in the respective tenant's SWPPP and BMP.

Material safety data sheets for some of the significant materials used by the BAA are included in **Appendix B**.

Figure 3.1-1 – Significant Material Inventory Locations

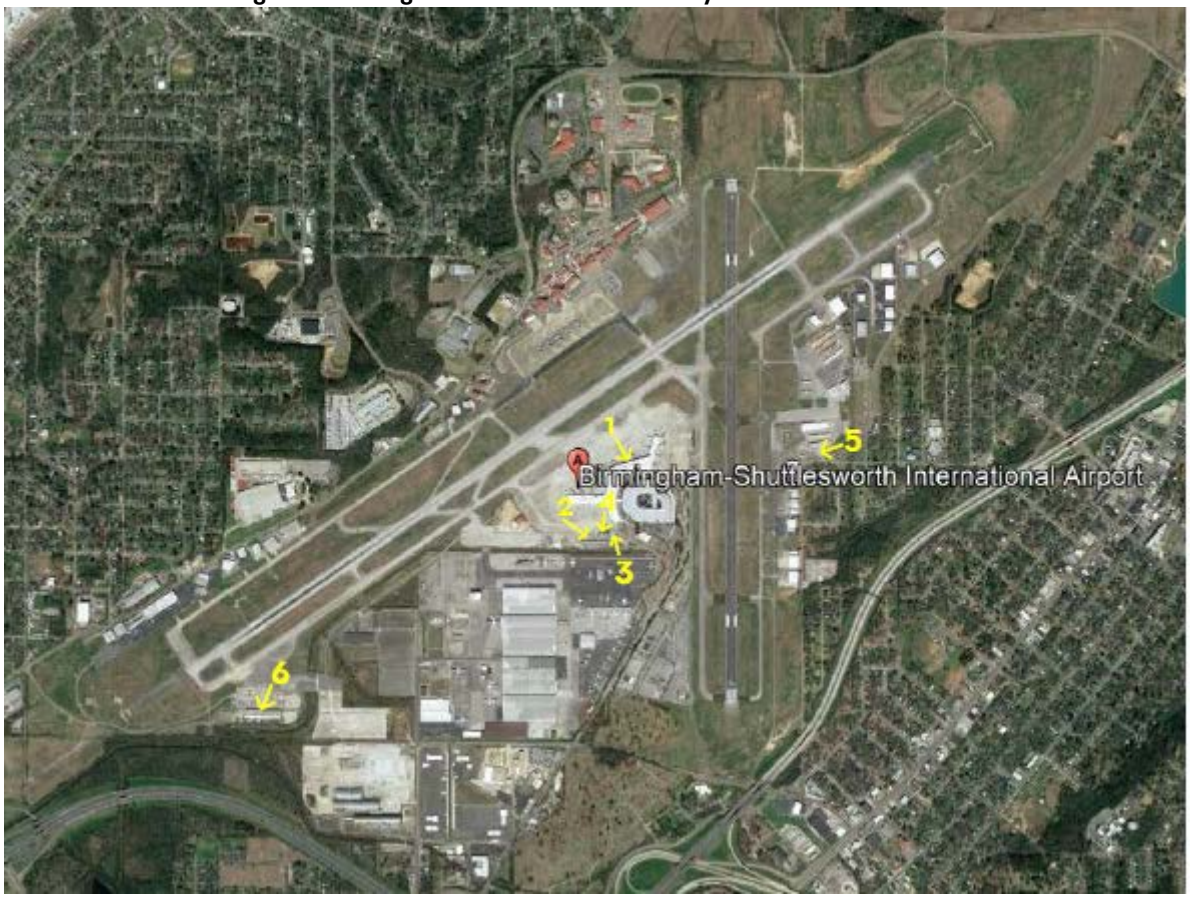


Table 3.1-1 – Significant Material Inventory List

Location Number	Drainage Basin	Facility Name	Industrial Activity	Indoor/ Outdoor	Materials	Container/ Structural Spill Control	Comments
01	DB 5	Terminal Gates	Material Storage	Outdoor	Deicing fluids	Portable and fixed ASTs	Materials used by airlines. Use is dependent on seasonal conditions
02	DB 4	Vehicle Fueling Area	Material Storage	Outdoor	Potassium acetate, diesel & unleaded gasoline, deicing waste, paint waste	Gas & diesel AST have double walls. Single wall Potassium Acetate AST w/ lined berms and 275-gallon plastic totes.	Potassium acetate tank use is dependent on seasonal conditions.
03	DB 5	Maintenance Building	Material Storage	Indoor/ Outdoor	Engine oils, lubricants, hydraulic fluids, antifreeze, K-Chem degreaser, waste oil	Small containers & boxes in storage room. Degreaser & waste oil AST outside	
04	DB 5	Maintenance Building	Material Storage	Outdoor	Paints, paint thinner	Material stored on pallets or in covered drums and buckets	
05	DB 6	Maintenance Building	Material Storage	Indoor		Shelves available for material storage	Possible future material storage
06	DB 2	Receiving Center	Material Storage	Indoor	Paint, potassium acetate, calcium chloride, de-greaser, adhesives, chemicals	Wrapped material stored on pallets and shelves	Material contents vary with Airport activity. Floor drain on interior of facility connects to storm system

3.2) General Risk Identification

In addition to the specific sources identified in Table 3.1-1, there is a general risk of storm water pollution associated with certain activities which occur at numerous facilities around BSIA, rather than at specific locations. Storm water may be impacted by activities such as:

- unprotected outdoor storage, transfer, and disposal of materials or wastes;
- application of de-icing chemicals to aircraft or airfield pavement;
- incidents such as spills or leaks, which are not expected and must, therefore, be managed by planning response procedures; or
- non-point sources, such as application of chemical fertilizers and pesticides, surface erosion, and channel erosion.

Another facility-wide risk is the presence of aboveground storage tanks. This section identifies the risks and potential for storm water impact associated with these sources. General procedures for minimizing these risks (by implementation of BMPs) are described in Section 4.0.

3.2.1) Material Storage

Material storage locations are often potential sources of storm water pollution. Stored materials may impact storm water for a number of reasons, including:

- Inadequate cover, which allows direct contact with sources;
- Overstocking or improper stacking, which increases the likelihood of releases;
- Improper or inadequate containment.
- Absence of Best Management Practices (BMP)

At the BSIA, liquid materials are typically stored both indoors and outdoors with some type of secondary containment. Dry materials are typically stored without secondary containment, but most dry materials are stored indoors. The materials stored vary at each location, but the most common potential sources at BSIA are oils, liquid chemicals, greases, and fuels.

3.2.2) Material Transfer

Whenever liquid or dry materials are transferred, there is a potential for loss or spillage, especially with respect to bulk materials, such as fuels, which are transferred regularly at several locations around the facility. Over time, small spills not addressed at transfer areas can accumulate and become significant sources of pollution that could negatively impact the quality of the storm water discharged at the facility. Material transfer operations may impact storm water for a number of reasons, including:

- Lack of containment around transfer areas or operations;
- Lack of drip pans or other portable containment devices;

- Inadequate cover over transfer points such as receiving docks;
- Careless handling of containers;
- Improperly closed or open containers;
- Improper seals at hose connections;
- Inadequate cleanup procedures following transfer operations.

The majority of the BAA's material transfers take place during fueling operations. The BAA has a written Spill Prevention, Control, and Countermeasures Plan (SPCC) that contains procedures and other good housekeeping practices for material transfer operations.

3.2.3) Waste Storage and Disposal

Waste storage and disposal operations are a potential source of storm water impact. Storm water may be impacted for a number of reasons, including:

- Inadequate cover, which allows direct storm water contact with sources;
- Improper or inadequate containment;
- Storage outside designated containment areas; or
- Disposal of liquid wastes in dumpsters or containers not intended for liquids.

Onsite waste disposal varies by activity and tenant. In general waste oils, antifreeze, degreasing solvents, fuels, paint, and batteries are collected and stored onsite in a designated area and then removed for recycling or disposal by a licensed contractor. At BSIA, solid waste is responsibly managed. All dumpsters are required to be covered. Recyclable materials, such as glass, metals, and paper are picked up by private contractors and transported to a recycling center or sanitary landfill.

3.2.4) Spills and Leaks

Accidental spills and leaks which occur outdoors pose an immediate risk of storm water pollution if they are not contained. The BAA's SPCC Plan and Emergency Response Plan (ERP) is written in accordance with 40 CFR 112. The SPCC and ERP is incorporated by reference as a supplement to this Plan.

The SPCC and ERP designate clear and specific procedures that should prevent storm water impacts from spills and leaks. Additionally, the SPCC and ERP outline fuel spill response and reporting for the facility. All spills are first reported to the BAA Operations Center who notifies the BAA Response Coordinator. A list of all spills from April 2007 to January 2021 is included as Table 2.8 in Part 2 of the SPCC and ERP.

3.2.5) Chemical Applications

Chemicals applied outdoors, such as fertilizers, pesticides, and herbicides, may be a potential source of storm water contamination. These are typically applied on the lawn areas, around electrical transformers, fence lines and at building perimeters. Storm water may become polluted

from spills and leaks of the chemicals, as described above, but there is also a risk of storm water pollution from the areas of application. If a storm event occurs immediately after application, or if the chemicals are improperly spread or over-applied, runoff from these areas may impact storm water.

The herbicides, insecticides and pesticides used by BAA personnel are purchased pre-mixed and are applied following manufacturer directions. Regulated herbicides, insecticides and pesticides are applied by licensed contractors at the BSIA. Fence lines, streets, and sidewalks are sprayed seasonally, and other areas of the facility are only sprayed on request.

3.2.6) Deicing Operation

Deicing operations protect aircraft from accidents which can result from ice and snow build-up on the aircraft itself along with accumulations on runways, taxiways, aprons and other surfaces during inclement weather. These operations are rarely necessary at the BSIA due to the generally mild winters. However, they are sometimes necessary and could pose a possible impact on storm water.

Runways, taxiways, and aprons are the most prominent application areas for pavement deicing at the BSIA. Airfield pavement deicing is performed by the BAA and is achieved using potassium acetate, sodium acetate and/or sodium formate. The BAA also deices pedestrian walkways, stairways and parking areas using calcium chloride. These areas are only deiced as needed. The BAA maintains a record of the types and quantities of the deicing chemicals it uses. MSDS sheets for deicing chemicals used by the BAA are included in Appendix C.

Aircraft deicing activities are performed by the BSIA's tenants using ethylene glycol and/or propylene glycol. The ratio of glycol to water in Type I deicing fluid varies from tenant to tenant. Type IV deicing fluid is usually applied without dilution. Application ratios vary depending on the aircraft or surface to be deiced and weather conditions. Aircraft deicing is restricted to the air cargo and terminal ramps to isolate the majority of the spent deicing fluids. Overspray of deicing fluids and drip and shear of deicing fluids during takeoff have the potential to impact storm water runoff if the chemicals used are absorbed into the soil or runoff to the receiving water, Village Creek.

3.2.6.1) Recently Adopted Federal Deicing Effluent

As of June 16, 2012, the EPA mandated by Final Rule new effluent limits and guidelines concerning the discharge of spent deicing fluids and storm water comingled with these materials for commercial airports. The nature of the regulations differ from airport to airport based on a variety of criteria, including: number of annual jet departures, existing or new facilities and other criteria. The "fact sheet" supplied with the Final Rule states:

"The rule does not establish uniform, national requirements for aircraft deicing discharges at existing airports. Such requirements will continue to be established in general permits, or for individual permits on a site-specific, best professional judgment basis."

The EPA's legal authority to enact and enforce effluent limitation guidelines and standards for the Airport Deicing Category is promulgated under the authority of Sections 301, 304, 306, 307, 308, and 501 of the CWA, 33 U.S.C. 1311, 1314, 1316, 1317, 1318, and 1361.

As discussed in Section 1.3, ADEM has the authority to administer the NPDES program, and therefore, will be the regulatory agency for enforcing the EPA's deicing regulations.

3.2.6.2) Applicability of the New Deicing Effluent Discharge Limits and Guidelines

The newly adopted effluent guidelines are not standardized for all existing commercial airports.

The EPA established a cut-off of greater than or equal to 60,000 gallons of aircraft deicing fluid used per deicing season. Airports at or above this usage amount are subject to the requirements set for aircraft deicing. For airports below this amount, such as the BSIA, the permitting authority will establish technology-based limitations for aircraft deicing discharge in NPDES permits on a case-by-case, best professional judgment basis.

ADEM is the permitting authority for the state of Alabama. At the time of this SWPPP update, ADEM had not established any requirements for aircraft deicing discharges.

For airfield pavement deicing, airports must either certify annually that they do not use airfield deicing products that contain urea or must perform effluent monitoring to ensure that effluent from deicing chemicals containing urea meet numerical limitations. Effluent monitoring must be performed before any dilution or commingling with non-deicing discharge.

3.2.6.3) Spent Deicing Effluent Collection and Treatment

At the BSIA, all deicing activities are performed as needed and generally occur only a few times per year.

Aircraft deicing is accomplished using ethylene glycol or propylene glycol solutions and is performed by air carrier and air cargo tenants at terminal gates or on the air cargo apron. Historically, the combined total usage amount of aircraft deicing fluid by all air carrier and air cargo tenants at the BSIA is well below the 60,000 gallon cut-off amount. Therefore, the BSIA will follow the technology based limitations imposed by ADEM when they are announced.

As preparedness for the announcement of deicing effluent limitations by ADEM, the BAA has explored potential collection and treatment measures for aircraft deicing effluent at the BSIA including the use of vacuum trucks and the plug and pump recovery method. Once ADEM requirements are established, the BAA will re-evaluate the deicing effluent collection program(s) at the BSIA and make any necessary amendments to this Plan.

The BAA is responsible for deicing the airfield pavement and uses potassium acetate, sodium acetate and/or sodium formate for this purpose. The BAA also deices pedestrian walkways, stairways and parking areas using calcium chloride. Pavement deicers containing urea are not used. Therefore, the BAA does not have to recover, treat and discharge, or recycle the airfield pavement deicing effluent if no urea is used to deice airfield pavement.

3.2.7) Erosion

Erosion occurs when soil is exposed to rainfall without adequate stabilization or vegetation. Surface erosion not only damages the site and facilities, but also may be a significant source of storm water pollution in the form of suspended solids. Erosion may occur under the following circumstances:

- Lack of vegetation;
- Lack of ground coverage;
- Steep slopes;
- Recent activity by heavy machinery and,
- Exposed soils and land disturbance cause by construction activities
- Exposed soils and land disturbance cause by construction activities

While minor erosion occurs at numerous locations at BSIA, it is not generally significant due to the storm water controls that are implemented at the facility. J2F noted during their 2007 inspections that there were locations at the BSIA where there was minor erosion but deemed the erosion to be insignificant. Because of this determination, those areas were not identified specifically in the report.

There can also be several small construction sites on the property at any given time. All construction sites can be potential sources of erosion and sedimentation. All construction activities at the BSIA are not covered by the industrial permit Category (x). Separate NPDES permits have and will continue to be obtained from ADEM construction projects.

3.2.8) Airport Fueling System and Aboveground Storage Tanks

The BAA owns and maintains numerous aboveground storage tanks on the airfield. These tanks hold fuel, deicing fluid, degreaser, and other potentially hazardous materials. These tanks are listed in Table 3.2.8-1, below, and their locations are shown in Figure 3.2.8-1. A spill or leak from these tanks can occur due to operator error or equipment failure. If not quickly contained and cleaned-up, fuel spills can be a significant source of storm water contamination.

Potential pollutants associated with fuels and fueling operations include petroleum hydrocarbons, petroleum distillates, volatile organic compounds, metals, and additives such as MTBE. MSDSs for diesel and gasoline are included in Appendix B.

The air carrier and air cargo tenants own and operate non-petroleum ASTs at the BSIA. These tanks typically include Type I and Type IV deicing fluid and are mobile tanks. These tanks are typically located near the terminal gates and air cargo ramp. Due to the varying number, size, location and type of materials stored in these tanks, the specific locations of all airline and air cargo tenant's ASTs are not listed in this SWPPP. Southwest Airline's Type I Deicing Fluid AST is the only airline-owned permanent AST. See Figure 3.2.8-1 and Table 3.2.8-1 for more information on this Southwest Airlines tank.

AST's and UST's owned and operated by rental car companies and corporate hangar tenants are not included in this Plan and should be addressed by their individual SWPPPs and BMPs.

Table 3.2.8-1 – Aboveground Storage Tank Locations

Location Number	Substance	Capacity, Each (Gallons)	Quantity	Tank Material	Comments
01	Diesel	1,000	1	Steel	In generator
02	Diesel	10,000	1	Steel	
02	Gasoline	10,000	1	Steel	
02	Potassium Acetate	6,000	1	Plastic	Filled as needed. Earth berm w/ liner containment
03	Diesel	2,000	1	Steel	
04	Waste Oil	500	1	Steel	
05	Diesel	750	1	Steel	In generator
06	Deicing Fluid	275	20	Plastic	
07	Type 1 Deicing Fluid	3,000	1	Plastic	Double walled. Owned/Operated by Southwest Airlines
08	Diesel	1,000	1	Steel	In generator
09	Motor Oil	55	5	Steel	Indoors
10	Paint (Waste)	275	14	Plastic	
10	Deicing Fluid (Waste)	275	26	Plastic	

Figure 3.2.8-1 – Aboveground Storage Tank Location Map

3.2.9) Aircraft, Runway, Ground Vehicle, and Equipment Maintenance and Cleaning

Minor ground vehicle and equipment maintenance and cleaning activities may occur outdoors at specified locations by air carrier and air cargo tenants. Materials of concern used in maintenance operations are degreasing agents and/or solvents, hydraulic fluids, antifreeze, oils and greases and acids. These materials may enter the storm system by vehicle tracking or when employees do not utilize BMPs or adequately clean-up areas where exterior maintenance activities occur. Wash water from cleaning activities can contain high concentrations of oil and grease, phosphates, degreasers and metals. The BAA currently implements a no wash policy effective on the terminal and air cargo ramps.

Runway paint and rubber removal is performed periodically by the BAA and currently utilizes one of two methods: a chemical removal method or a high pressure water blast. The first method employs a chemical solution, which dissolves excess paint and rubber from runways. The second method employs a high-pressure water blast to remove the rubber. The BAA is constantly exploring more economical and environmentally friendlier techniques for these activities.

3.3) Non-stormwater Discharges

The BSIA occasionally has non-storm water flows from permitted (authorized) sources which may include:

- Discharges from firefighting activities;
- Fire hydrant flushing;
- Potable water sources including waterline flushing;

- Irrigation drainage;
- Lawn watering;
- Uncontaminated groundwater;
- Foundation or footing drains where flows are not contaminated with process materials;
- Discharges from springs;
- Routine exterior building wash down which does not use detergents or other compounds;
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used; or
- Air conditioning condensate.

At the BSIA, domestic wastewater, wash waters, industrial wastewater, and other non-storm water flows are discharged to the sanitary sewer system which routes the wastewater to the Jefferson County WWTP. Effluent from Jefferson County's WWTP is discharged according to their NPDES permit.

Discharges of non-storm water into storm drainage systems can be a significant source of storm water impact. Non-storm water discharges may consist of the following:

- Discharges or spills which flow to floor drains located inside buildings that are illicitly connected to the storm water drainage system;
- Discharges of significant materials to the ground surface;
- Wastewater generated by washing or steam cleaning vehicles, aircraft, or equipment;
- Domestic wastewater;
- Non-contact cooling water; or
- Industrial process water.

The BAA's inspects the facility for non-storm water discharges during its annual comprehensive site compliance evaluation (See Section 5.0). Any non-storm water discharge identified during the site compliance evaluation or at other times throughout the year must be immediately discontinued by either plugging the discharge or rerouting it to the sanitary sewer system.

3.4) Stormwater Monitoring Program

Storm water monitoring and sampling data provides information on the quality of storm water runoff from the BSIA. The storm water analytical data is used to identify the types and sources of pollutants and to provide a means for evaluating the environmental risk of storm water runoff.

The BAA has three (3) storm water monitoring and sampling locations as identified in the NPDES Permit ALG140453. The BAA is subject to the storm water monitoring and sampling requirements identified in the General NPDES Permit ALG140453. The BAA's storm water monitoring program does not include storm water monitoring for any rental car company or corporate tenant leasehold.

3.4.1) Tenants with Separate NPDES Permits

The BAA's General NPDES permit states "the discharge of wastewater generated by any process, facility, or by any other means not under the operational control of the permittee or not identified in [the] application for [the] permit or not identified specifically in the description of the outfall in [the] permit is not authorized by [the] permit." As mentioned in Section 2.2, a portion of the BSIA is leased to corporate tenants for private hangar space. These tenants perform industrial activities outside of the operational control of the BAA and, therefore, are not included in the BAA's NPDES permit. These tenants are required to obtain NPDES permit(s) for their industrial activities. These tenants are referred to as "Tenants with permits".

Tenants with permits are required to supply proof of permit coverage to the BAA at least once annually and within 30 days of ADEM's acceptance of any major modifications to their respective permits. Additionally, tenants with permits are required to conduct all required benchmark, effluent, and visual monitoring identified in their own NPDES permits for their respective leaseholds. If a BMP and/or a SPCC Plan are required by a tenant's NPDES permit, the tenants' BMP and/or SPCC Plan for their respective facility shall meet or exceed the obligations and expectations of the BAA's SWPPP & BMP and SPCC & ERP documents. Tenants with permits are also required to notify the BAA of all non-permitted discharges.

3.4.2) Tenants without Separate NPDES Permits

3.4.2.1) Rental Car Companies

The activities of rental car companies do not qualify for an NPDES permit due to their SIC code, as described in Section 2.2. The activities of rental car company tenants and all tanks within their leaseholds are not covered under the BAA's NPDES permit, SWPPP & BMP and SPCC & ERP (See Appendix I). However, because the rental car tenants operate on property owned by the BAA, the rental car tenants must prepare site specific SPCC and BMP plans. Further, the rental car companies must ensure that their SPCC and BMP plans meet or exceed the requirements set forth in the BAA's plans and must provide copies of those plans to the BAA.

3.4.2.2) Air Carriers and Air Cargo Tenants

The operations of air carriers and air cargo tenants are commingled with the operations of the BAA. Thus, the air carriers and air cargo tenants do not have separate NPDES permits. Rather, the air carrier and air cargo tenants must comply with the requirements of the BAA's NPDES permit and the policies and procedures contained in the BAA's SWPPP & BMP and SPCC & ERP.

These documents are made available to the air carrier and air cargo tenants within 30 days of receipt of the renewed permit and within 30 days of any major modifications to section(s) of this SWPPP and BMP that pertains to these tenants. These tenants are required to annually certify to the BAA compliance with the BAA's General NPDES permit

ALG140453, this SWPPP and BMP, and the SPCC & ERP. The Annual Certification Form is attached as Appendix J.

3.4.3) Representative Discharge Monitoring Conducted by BAA

The BAA conducts visual storm water monitoring and benchmark monitoring utilizing representative discharges from substantially similar outfalls. Guardian Systems, Inc. performs the storm water sampling and prepares the required Discharge Monitoring Reports (DMRs). The BAA submits the DMRs and annual certifications as required by the General NPDES permit, included in Appendix A. The General NPDES permit details the BAA's storm water monitoring and sampling requirements currently in force.

4.) BMPs for Stormwater Management and Control

BMPs are procedures and practices which are intended to prevent or reduce storm water pollution. They consist of both non-structural BMPs (such as personnel training and good housekeeping practices) and structural BMPs (such as oil/water separators and containment dikes).

4.1) Selection of BMPS

BMPs may be categorized as Source Reduction Measures, Source Control Measures, or Treatment Measures. The EPA encourages the implementation of source reduction measures (i.e., chemical substitution, spill prevention, good housekeeping) which minimize the potential for storm water pollution by reducing or eliminating the source. Where source reduction measures are not feasible, source control measures (i.e., secondary containment, dust control, run-on diversion) may be used. Storm water treatment or recycling measures (i.e., oil/water separators and biofilters) are recommended when source reduction and control measures are not expected to reduce storm water pollution. Treatment measures are often the only feasible control of non-point source pollution, such as runoff from the runways which can be treated by oil/water separators.

This Plan follows a tiered approach to selection of BMPs. Source reduction is the preferred course of action, followed by source control and treatment. Some BMPs include both source reduction and source control measures. For example, good housekeeping can include both proper material storage away from storm water exposure (source reduction) and use of drip pans (source control). Where source reduction and source control measures are not deemed effective or feasible, appropriate treatment measures are recommended. The remainder of Section 4.0 describes in detail the non-structural and structural BMPs recommended for the BSIA.

4.2) General Non-structural BMPs

The EPA requires that non-structural BMPs be implemented at all industrial facilities to the fullest possible extent because such BMPs emphasize prevention over treatment and are generally very cost-effective. The following six non-structural BMPs listed in Sections 4.2.1 through 4.2.6 may be implemented at all industrial areas of BAA property including air carrier and air cargo tenant operations. The keys to the success of these non-structural BMPs are facility-wide awareness of storm water pollution prevention practices and encouragement of these practices by directors, managers and supervisors at all levels. All BMPs are the responsibility of individual industrial operators (including air carrier and air cargo tenants) and should be implemented at applicable locations.

4.2.1) Good Housekeeping

Good housekeeping practices are designed to maintain a clean and orderly work environment. A clean and orderly work area reduces the possibility of accidental spills caused by mishandling of materials, while improving safety and efficiency. Good housekeeping has the added benefit of improving facility appearance, which is a priority of the BAA. Poor housekeeping can result in non-storm water discharges or exposure of pollutants to storm water.

Good housekeeping is encouraged everywhere at the BSIA. It is especially important at facilities where potential pollutants or materials are stored, used, or transferred. The industrial facilities at the BSIA generally have good housekeeping procedures that are routinely implemented by staff.

Appropriate portions of the following good housekeeping procedures list may be posted in appropriately conspicuous locations as a regular reminder. This list may also be incorporated into training of new personnel to help them adopt the environmentally responsible philosophy encouraged by BAA:

- Keep floors, ground surfaces, and work areas dry and clean;
- Clean floors and spills with a mop or sorbents, rather than a hose;
- Do not leave wastes or recyclable materials lying around - put them in the proper receptacle or storage area;
- Make sure dumpsters are kept closed or covered;
- Use alternative non-toxic or "green" chemicals when possible (i.e. biodegradable cleaners and degreasers);
- Routinely inspect equipment for leaks or conditions that could lead to the discharge of pollutants;
- Use drip pans under vehicles and equipment during maintenance;
- Place drip pans under all hose or pipe connections during transfers;
- Check drip pans and secondary containment areas during and after each rainfall (if necessary, empty them if the storm water is not contaminated);
- Do not dump or wash anything into storm drains or manholes. If you see something leaking or being dumped into a storm drain, take action to stop it;
- Inform all personnel of materials which are not suitable for outdoor storage (i.e., batteries, oily rags, open containers);
- Minimize the amount of time materials are stored outdoors;
- Consolidate areas used for outdoor storage;
- Provide adequate aisle space to facilitate material transfers, inventories, and inspections;
- Store and stack all containers, drums, and bags in a manner in which they will not be accidentally damaged or knocked over;
- Keep metal drums on pallets or racks to prevent rust and corrosion;
- Clearly label drums of hazardous materials and wastes, and store or dispose of them according to BAA procedures;
- Keep shelves and cabinets organized, and put materials back after use;
- Store flammable materials in metal lockers or ventilated storage buildings;
- Stock only the quantity of material that is needed. Extra inventory increases the chances of a release or spill.

Good housekeeping practices are a very basic pollution prevention measure. They must be practiced consistently by all personnel to be effective, and enforcement of housekeeping policies must be at all levels.

4.2.2) Inspections

The NPDES General Permit requires that facility personnel inspect designated equipment and areas of BAA property. There shall be **"at a minimum, two (2) inspections a week, on days during which the facility is manned, of any structures that function to prevent storm water pollution or to remove pollutants from storm water and of the facility in general to ensure that the BMP is continually implemented and effective"**.

The checklist contained in Appendix D-1 should be used to complete these twice- weekly inspections of the storm water system. The BAA-owned areas identified in Sections 3.2.1 and 3.2.8 are examined during these inspections. The facility's storm water system and management devices are also included in these twice weekly inspections. New facility construction or modifications should also be added to the inspection checklists when they are completed. (During construction, separate inspections are performed to comply with the NPDES construction storm water permit.)

As part of the twice-weekly storm water inspections, areas or equipment that require corrective action are noted and reported to BAA Maintenance for corrective action.

The BAA does not inspect the leaseholds of the air carrier and air cargo tenants covered by the BAA's General NPDES permit. The air carrier and air cargo tenants shall independently inspect their leasehold to maintain compliance with the BAA's General NPDES permit. Areas or equipment that are discovered to need corrective action through tenant inspections are the responsibility of the individual tenant.

Comprehensive Site Compliance Evaluations (CSCE) are more thorough inspections of the facility's storm water system, controls, BMPs and material storage practices. ADEM Administrative Code Rule 335-6-6-.12 requires a CSCE be performed annually. See Section 5.0 for more information on CSCEs.

The BAA's ECO will ensure that the twice-weekly inspections of the storm water system and annual CSCEs are performed in accordance with this Plan and that any problems uncovered during the inspections are communicated to the BAA Maintenance Department for resolution. The ECO will retain the inspections and CSCEs for inclusion in this Plan.

4.2.3) Preventative Maintenance Program

A preventive maintenance program must involve timely inspection and maintenance of facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters. The BAA's preventive maintenance program pertains to monitoring and inspecting equipment, material storage areas, and storage tanks.

The BAA does not inspect the air carrier and air cargo tenants' leaseholds. The preventative maintenance practices of these areas are the responsibility of the individual tenant for compliance with the BAA's General NPDES permit.

The BAA's General NPDES Permit, requires that **preventive maintenance inspections of mechanical equipment and structures are conducted "at a minimum twice per week**". These preventive maintenance inspections and any required maintenance discovered will be performed by BAA Maintenance staff or by contractors hired by BAA Maintenance staff. The checklist in Appendix D-2 should be used to complete these twice weekly inspections.

The BAA's preventive maintenance program also includes maintaining and reviewing records related to routine preventive maintenance activities such as:

- Periodic testing and inspection of BAA equipment
- Maintaining an appropriate inspection and maintenance schedule to ensure effective operation;
- Periodic lubrication, adjustment, cleaning, and repair or replacement of worn parts as required by the manufacturer;
- Tagging and locking inoperable equipment or equipment undergoing maintenance which should not be used.

An inspection schedule for the BAA owned tanks is included in the BAA's SPCC Plan. Records of the preventive maintenance inspections shall be transmitted, at least weekly, to the Planning and Development office for inclusion in this Plan.

4.2.4) Spill Prevention and Response

The establishment of standard operating procedures for safety, spill prevention, and proper employee training can reduce spills and leaks. Development and implementation of spill prevention and response procedures is essential for an effective SWPPP and BMP plan. In the event a spill occurs, a swiftly executed response may prevent storm water contamination and reduce incurred costs from extended clean-up operations. This Plan incorporates by reference the information and procedures contained in the most recently amended BAA SPCC and ERP. Although several SPCC Plans have been developed by various entities on BAA property for oil and petroleum spills, this Plan requires control measures for any potential storm water pollutant.

4.2.4.1) Potential Oil Spill and Stormwater Contamination Areas

The areas having the highest spill potential at the BSIA include aircraft and vehicle refueling areas, bulk storage tanks and other facilities associated with vehicle and aircraft maintenance. Spills from these facilities may consist of various types of oil-related products, such as Jet-A, aviation gasoline, diesel fuel, hydraulic fluid, and engine oil.

4.2.4.2) Spill Prevention Procedures

The spill prevention procedures are outlined in Part 3 of the BAA's SPCC and ERP.

Some basic spill prevention and response measures include:

- Provide structural spill controls for all liquid containers that are stored outdoors where a spill may reach the storm drainage system;
- Provide secondary containment for all hazardous waste;
- Ensure adequate distribution of, easy access to and clear labeling of spill response equipment;
- Ensure that personnel know the locations of spill kits and understand proper spill cleanup procedures.

MSDS sheets covering material handling, storage and safety procedures for potentially hazardous substances used by the BAA are included in Appendix B of this SWPPP.

4.2.4.3) Spill Response Procedures

Eliminating the source of a spill and containing the spilled material are the first steps in preventing storm water contamination. **A quick response is imperative** in preventing further contamination and costly clean ups. The spill response procedures are further explained in Part 2 of the BAA's SPCC and ERP and included in this Plan by reference.

4.2.5) Personal Training and Awareness

Although not specifically addressed in the NPDES general permit, personnel awareness can also be improved by:

- Labeling storm drain inlets so that personnel are aware of the direct impact of their actions on storm water runoff quality;
- Posting prominent signs prohibiting dumping of non-storm water in storm drains or washing near storm drains;
- Posting prominent signs discouraging topping off of fuel tanks (to minimize spills from overfilling);
- Posting bulletins on updated maintenance practices and storm water issues.

To ensure effective implementation of this Plan, the BAA's Facilities and Planning and Development departments have Qualified Credentialed Inspectors (QCI) on staff to recognize possible discharges and disturbances and ensure effective erosion and sediment controls are being used effectively. This QCI certification is renewed annually thoroughly yearly training.

The BAA also provides annual training for BAA staff on storm water issues. This training will be performed in January before the BAA submits its annual compliance form. Department directors, supervisors and managers receive training on storm water issues. Ideally, all BAA field personnel will receive some level of storm water training whether through an official training program or instruction from trained supervisors or managers during new-employee orientations. See Appendix C for more information on the BAA's personnel training program.

Storm water training shall relate to:

- storm water management
- specific activities identified in this Plan as potential pollutant sources
- hazardous material or waste management

Annual training should relevant updates to this Plan. Department directors, supervisors or managers can provide periodic update training at department levels as needed. On-site contractors and temporary personnel should also be notified about the BAA's storm water pollution prevention polices.

The air carrier and air cargo tenants shall independently train their employees on storm water pollution prevention practices to maintain compliance with the BAA's General NPDES permit.

The BAA's annual storm water training should focus on implementation of non-structural BMPs, such as good housekeeping, material management practices, and spill prevention and response. Specific topics that should be covered during the training include:

- The importance of the Plan
- The environmental impacts and regulatory consequences of storm water pollution
- Personnel responsibilities
- Description of the potential pollutant sources
- Familiarization of personnel with locations of storm drain inlets
- Prohibition against pouring of non-storm water materials into storm drains
- Material handling procedures and storage requirements
- An explanation of secondary containment and drip pans, their purpose, importance, and correct procedure for releasing storm water
- Identification of potential spill areas and drainage routes, including information on the causes of past spills
- Components of non-structural BMPs such as good housekeeping, preventive and routine maintenance inspections, and spill response procedures including reporting spills to appropriate individuals (Response Coordinator)
- Importance of reporting, record keeping, and follow-up

The log in Appendix C-1 may be used to document attendance at all storm water pollution prevention training sessions. All attendance logs of BAA storm water training shall be reported to the ECO and retained by the ECO for inclusion as a part of this Plan.

4.2.6) Record keeping and Internal Reporting

As described in Section 4.2.2 and Section 4.2.5, inspection records and training logs will be included in this Plan along with other information describing the quality and quantity of storm water discharges. These records should be incorporated into Appendix D.

Twice-weekly maintenance inspection records will be completed by BAA Maintenance staff and submitted at least weekly to the ECO. The ECO will complete and retain inspection records and checklists associated with the twice-weekly inspections, and CSCEs of the storm water system. The ECO will also retain the attendance logs of BAA training for inclusion in this Plan.

4.3) General Structural BMP Descriptions

Structural BMPs are engineered, physical improvements that are intended to divert, treat, reuse or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from an installation. Sections 4.3.1 through 4.3.3 provide general descriptions of structural BMPs which have been installed or can be installed at locations around the BSIA property. Detailed fact sheets of BMPs used at the BSIA are provided in Appendix E.

4.3.1) Sediment Erosion Control

There are three basic categories of sediment and erosion control BMPs: Structural, Vegetative, and Stabilizing. Several types of BMPs within each category are described on the following pages. These BMPs are generally applicable to the BSIA and may be implemented when needed.

4.3.1.1) Structural Erosion Control

- (1) Silt fences: Fabric fences supported by a wire grid suspended from regularly spaced posts are placed at the perimeter of an erosion-sensitive area to retain sediment. Proper installation is critical.
- (2) Tarps: Soil stockpiles should be covered with plastic sheeting or tarps to prevent erosion.
- (3) Rock or gravel filter berms: A rock or gravel berm may be installed downstream of an erosion sensitive area to capture sediment or reduce storm water velocity. This control has limited application and is fairly maintenance intensive. It is most useful as a staged control in channels.
- (4) Detention basins: Although detention does not prevent erosion, runoff is retained within the basin and released at a controlled rate. Thus, sediment settles out and downstream channel erosion is reduced.
- (5) Interceptor berms and swales: A berm or swale (or combination) may be constructed on the upstream perimeter of an erosion-sensitive area to divert run-on around the area. However, this may increase channel erosion at another location and must be applied with caution.
- (6) Outlet protection: Concrete or stone riprap or a stilling basin may be installed at outlets to reduce erosion and velocity, or to settle out solids.
- (7) Inlet protection: Areas around inlets may be protected with sod, silt fences, block and gravel arrangements to prevent sediment from eroded areas from entering the storm sewer.

4.3.1.2) Vegetative Erosion Control

- (9) Sodding
- (10) Vegetated filter strips: A strip of vegetation may be installed downstream of a small area of erosion to slow velocities and capture light sediment loads.
- (11) Mulching, matting, and netting: These are technically stabilization methods, but these three porous technologies allow vegetation to take root while soil is stabilized.

4.3.1.3) Stabilizing Erosion Controls

- (12) Gabions and revet mattresses: Gabions and revet mattresses are prefabricated wire baskets or cages which are installed and filled in place with large cleaned stones.
- (13) Retaining walls: Retaining walls are usually constructed of concrete cast in modular sections, but they may also be constructed of gabions, grid pavers, or compacted earth. The soil behind a retaining wall should be reinforced with plastic geogrids or other methods to prevent washout. Retaining walls should only be designed by a Professional Engineer.
- (14) Paving: Erosion-sensitive areas may be paved, on a temporary basis, with asphalt, gunnite (spray concrete), grid pavers, or other methods. This control must be applied with caution, since it has the potential to increase runoff volume.
- (15) Log cribs: A series of logs may be anchored along channel banks in areas of high velocity or impact, such as turns. This control has limited application, and should only be used in small channels.
- (16) Riprap: Riprap, which can be used in many applications, in rock, concrete, or some other erosion-resistant cover which is placed over erosion-sensitive areas for protection and/or energy dissipation.

4.3.2) Source Control

Source control management practices are an important part of this Plan. Source control measures are, as mentioned previously, often the cheapest form of storm water pollution prevention. The goal of source control is to prevent storm water contact with pollutant sources, and/or to prevent polluted storm water from leaving the source area.

Structural source controls are already in place in many locations at BSIA and there are additional locations where they should be implemented or improved. Several types of typical source controls are described below:

- (17) Containment: Areas which contain potential pollution sources on a regular basis should be contained with impervious dikes, curbs, or drain trenches which keep contact runoff within a confined area. See Figure 4.3.2-1. The area within containment should be

impervious, to minimize follow-up cleanup efforts. A portable method of containment is the use of spill pallets, which provide greater flexibility but are limited in size. Another type of containment, which is for temporary use only, is the employment of portable booms and/or dikes. This is the containment method which may be designated for use during deicing operations, should they become necessary.

Figure 4.3.2-1 – Containment Area

- (18) Structural covers: Materials stored outdoors should be covered with a structural cover within a specified storage area.
- (19) Run-on diversion: Berms, swales, curbs, or storm inlets should be installed upstream of areas which contain potential pollutants, to divert run-on flows.
- (20) Isolation valves: In locations where storm drainage shares an inlet with a process, such as a wash rack, or where emergency closure of a pipe may be required, an isolation valve (usually a gate valve) may be installed.
- (21) Inlet grate covers: Rubber mats should be provided to cover inlet grates, as an emergency response measure, to prevent spills from entering the drains.
- (22) Warning signs: Warning signs should be installed at key locations to remind or inform personnel of pollution prevention procedures or restrictions.
- (23) Drip pans: Drip pans are a portable form of containment, and they should be used under any transfer connections, leaking equipment or piping, or potential spill areas. Figure 4.3.2-2 shows a collapsible drip pan under a fueling tank.

Figure 4.3.2-2 – Drip Pan

- (24) Connection closure: Inappropriate connections to the storm drainage system should be closed by sealing floor drains, removing bypass lines, or other means.
- (25) Removal of source: There are several potential pollution sources which may be removed without hindering BAA activities. This is both a structural and non- structural source reduction measure.
- (26) Re-grading or paving: Areas may be re-graded to improve drainage or reduce pollutant exposure to run-off. In paved areas, this must be accompanied with re-paving.
- (27) Wash rack: Wash racks should be installed with either a closed-loop treatment system or discharge to an oil water separator and to the sanitary sewer. Figure 4.3.2-3 shows an example of a typical wash rack.

Figure 4.3.2-2 – Wash Rack

4.3.3) Treatment Measure - Runoff & Oil/Water Separators

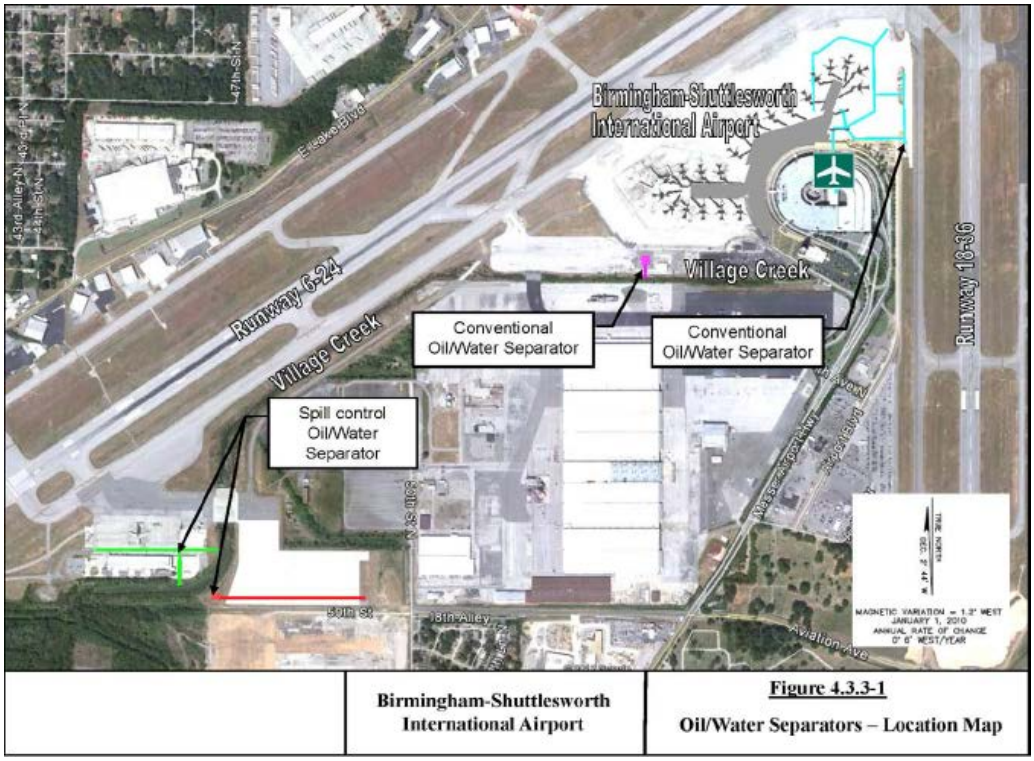
Storm water treatment measures (i.e., oil/water separators and bio-filters) are recommended when source reduction and control measures are not expected to reduce storm water pollution. Treatment measures are often the only feasible control of non-point source pollution, such as runoff from the runways which can be treated by oil/water separators or various systems to address spent deicing fluids.

There are four structural oil/water separators (OWS) installed at the BSIA. Two are spill control separators and two are conventional gravity separators. One conventional oil water separator was last cleaned in April 2012 by a licensed contractor. Approximately 3,000 gallons of hydrocarbon sludge were recovered and removed by One Stop Environmental, LLC (an ADEM approved waste contractor). The other conventional oil water separator was installed in 2012 as a part of the Terminal Modernization Project. Figure 4.3.3-1 shows the OWS locations.

- (28) Oil/water separator or sediment trap: An oil/water separator is an inlet control structure which is baffled to capture settled solids in one chamber and floatables (oil and grease) in the next chamber. There is sometimes a skimmer or other mechanism to remove oil from the second chamber. Other types of oil/water separators (such as coalescing plate interceptors) are available, but they are more maintenance intensive.
- (29) Connection to sanitary sewer: In areas where there is a small volume of runoff with a potential for high pollutant concentrations, it may be necessary to isolate such flows and

convey runoff to the sanitary sewer system subject to approval by the appropriate authorities.

Figure 4.3.3-1 – Oil/Water Separators – Location Map



	Birmingham-Shuttlesworth International Airport	**Figure 4.3.3-1** **Oil/Water Separators – Location Map**

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5.) Comprehensive Site Compliance Evaluation (CSCE)

The Comprehensive Site Compliance Evaluation (CSCE) provides a basis for evaluating the overall effectiveness of the SWPPP. This evaluation is conducted in addition to other routine inspections required by the NPDES permit. The CSCE will also identify where additional controls or practices are needed.

A CSCE of the facility must be completed at least once per year. The PM & D department will be responsible for scheduling the CSCEs. Personnel who are familiar with the facilities, such as facility personnel who maintain and/or operate the facility or outside professionals, should conduct the CSCEs.

5.1) Field Inspections

A field inspection of BAA property must be conducted as a part of the CSCE and should include the following activities to verify that the SWPPP accurately reflects current conditions:

- Inspect all areas associated with industrial activity for evidence of, or the potential for, pollutants entering the storm water drainage system (such as color, foam, outfall staining, visible sheens);
- Inspect the individual components of the storm water management system (during rainfall events, if possible) for proper function and absence of ponding water;
- Evaluate structural and non-structural BMPs for proper implementation and effectiveness in reducing storm water pollution, as well as the need for additional control measures;
- Inspect all permitted outfalls for illicit discharges (after a period of 72 hours without rain, if possible)
- Visually inspect equipment needed to implement the SWPPP, such as spill response equipment and shut-off valves.

The CSCE checklist in Appendix D-3 may be used to complete the CSCE. Upon completion, these forms should be signed, dated and returned to the ECO. The CSCE inspection forms will be retained by the ECO for inclusion in this Plan.

5.2) Plan Revision

Based on the results of the CSCE field inspection, the descriptions and associated tables and figures of potential pollutant sources (Section 3.0) and pollution prevention measures and controls (Section 4.0) in this SWPPP should be revised as appropriate. The updated descriptions and associated revisions are the responsibility of the ECO and should be completed within 60 days of the field inspection. These revisions may also be performed by the outside professionals that conduct the annual CSCE.

5.3) CSCE Evaluation Report

A CSCE evaluation report shall be prepared to report to summarize the findings of the CSCE. The report should include:

- Scope of the inspection;
- Deficiencies noted, including pictures;

- Corrective actions needed;
- Revisions made to the SWPPP.

This report should be completed within 30 days of the field inspection. A written implementation schedule for all necessary corrective actions for the deficiencies noted should be prepared within 60 days of the CSCE evaluation report. This strategy should be prepared before the BAA submits the annual compliance certification by January 31st. All required corrective actions should be completed before the next CSCE.

The CSCE evaluation report shall be retained with the SWPPP for a minimum of three years from the date of the CSCE evaluation report.

6.) Administrative Procedures

This SWPPP is intended to be a continually evolving document, subject to change under a number of circumstances described below. This section contains provisions for review, revision, reporting, and record keeping of this Plan as required by the General NPDES Permit.

6.1) Plan Review and Modifications

In accordance with General NPDES permit, this Plan must be amended whenever there is a "change in facility or change in operation of the facility which materially increases the potential for the ancillary activities to result in a discharge of significant amounts of pollutants."

The Plan should be amended if it is in violation of any conditions of the NPDES, or has not achieved the general objectives of controlling pollutants in storm water discharges. Plan revisions may also be necessary following a CSCE or periodic inspection. Specific reasons for revision or amendment of the Plan may also include:

- Changes in materials used or stored;
- Changes in materials handling or storage procedures;
- Events which may result in storm water discharge pollution (such as spills)
- Construction of new facilities that may affect the quality of discharged storm water;
- Changes in regulatory requirements or permit conditions.

All changes in the Plan should be made as soon as it practically possible. Each Plan revision must be documented by making an entry in the "SWPPP & BMP Record of Revisions" form attached in Appendix F. The ECO or an employee designate by the ECO shall perform all required revisions. The ECO is responsible for documenting the changes in Appendix F.

6.2) Reporting Requirements

Specific monitoring requirements for each outfall are defined in the General NPDES permit, Part I. The general reporting requirements for compliance are outlined in Part I.C. In summary, the following conditions require reporting to ADEM:

- Changes in discharge including new or increased discharges, termination of discharges
- Non-compliance with permit conditions (if potentially dangerous to human health of the environment, report within 24 hours)
- Cooling water or boiler water additives
- Transfer of ownership
- Expiration of permit
- Changes in discharge of toxic pollutants or hazardous substances

All forms and reports required to be submitted by the General NPDES permit, AWPCA and ADEM's rules and regulations must bear the permittee name and number (ALG140453) and be signed by the responsible official listed on the permit. The forms and reports required to be submitted shall be addressed to:

Attn: Environmental Data Section/Information Systems Branch Alabama Department of Environmental Management
Post Office Box 301463
Montgomery, AL 36130-1463

The Program Management & Development department shall be responsible for conveying all changes and required reports to ADEM for the BAA's General NPDES permit. However, it is the responsibility of all BAA department directors, supervisors and/or managers to inform the Planning and Development department of changes that require ADEM notification.

6.3) Record Keeping and Retention of Records

As discussed in Section 4.2.6, the ECO is responsible for record keeping and retention of records regarding storm water monitoring, the General NPDES Permit and this Plan. Miscellaneous correspondence related to the General NPDES Permit and this Plan may be retained as part of this Plan.

The General NPDES Permit requires that **records and information resulting from discharge monitoring activities and required inspections be maintained for a period of three years**. This information must also be readily available and provided to ADEM upon request. This Plan, its revisions, and annual certifications should also be retained for three years, and at least one year past the term of the permit.

6.4) Penalties for Non-compliance

Any non-compliance of the requirements of the General NPDES Permit constitutes a violation of the FWPCA 33 U.S.C. Section 1319, and the AWPCA Code of Alabama 1975, Section 22- 22-14 and is grounds for:

- Enforcement action
- Modification of permit terms
- Termination of permit
- Suspend or termination of authorization to discharge under this permit
- Denial of a permit renewal application

The General NPDES Permit authorizes penalty actions for violations of permit conditions as defined by FWPCA 33 U.S.C. Section 1319, and AWPCA Code of Alabama 1975, Section 22- 22-14.

7.) Reference

Federal Register, May 16, 2012, Vol. 77, No. 95, *Effluent Limitations Guidelines and New Source Performance Standards for the Airport Deicing Category; Final Rule*

Federal Register, July 17, 2002, Vol. 67, No. 137, NPDES *General Permit for Storm Water Discharges Associated with Industrial Activity*

Federal Register, September 29, 1995, Vol. 60, No. 189, *NPDES General Permit for Storm Water Discharges Associated with Industrial Activity*, pp. 51109-51124, United States Government Printing Office, Washington, D.C.

Federal Register, September 29, 1995, Vol. 60, No. 189*, Storm Water Discharges Associated With Industrial Activity from Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas Located at Air Transportation Facilities*, pp. 50998-51004 and 51215-51219, United States Government Printing Office, Washington, D.C.

Federal Aviation Administration Advisory Circular, September 8, 2008, No. 150/5320-15A, *Management of Industrial Waste*, pp. 39-122, U.S. Department of Transportation, Washington, D.C.

Code of Federal Regulations, July 17, 2002, Title 40, Part 112, *Oil Pollution Prevention*, United States Government Printing Office, Washington, D.C.

ADEM General NPDES Permit number ALG140453, October 31, 2007.

Birmingham Airport Authority, 2013, Spill Prevention, Control and Countermeasures Plan (SPCC) and Emergency Response Plan (ERP)

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Appendix A
NPDES Permit

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LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

September 15, 2017

ALFONSO DENSON PRESIDENT/CEO
BIRMINGHAM AIRPORT AUTHORITY
5900 MESSER AIRPORT HIGHWAY
BIRMINGHAM AL 35212

RE: Birmingham-Shuttlesworth International Airport
5900 Messer Airport Highway
Birmingham, AL 35212
Jefferson County (073)

Dear Mr. Denson:

Based on your request (as evidenced by the submittal of a Notice of Intent), coverage under **General NPDES Permit Number ALG140453** is granted. The effective date of reissuance coverage is **October 1, 2017.**

Coverage under this permit does not authorize the discharge of any pollutant or wastewater that is not specifically identified in the permit and by the Notice of Intent which resulted in the granting of coverage. Those discharges identified in the NOI are:

Discharges	Receiving Waters
DSN001-1	Village Creek via storm sewer
DSN001-2	Village Creek via storm sewer
*DSN001-3	Village Creek via storm sewer
DSN001-4	Village Creek via storm sewer
DSN001-5	Village Creek via storm sewer
DSN001-6	Village Creek via storm sewer
DSN001-7	Village Creek via storm sewer
DSN001-8	Village Creek via storm sewer
DSN001-9	Village Creek via storm sewer
*DSN001-A	Village Creek via storm sewer
DSN001-B	Village Creek via storm sewer
DSN001-C	Village Creek via storm sewer
DSN007-1	Village Creek via storm sewer
DSN010-1	Village Creek via storm sewer
DSN010-7	Village Creek via storm sewer
DSN010-9	Village Creek via storm sewer
DSN010-A	Village Creek via storm sewer
DSN010-B	Village Creek via storm sewer
DSN010-C	Village Creek via storm sewer
DSN011-1	Village Creek via storm sewer
DSN011-2	Village Creek via storm sewer
DSN011-3	Village Creek via storm sewer
DSN011-4	Village Creek via storm sewer
DSN011-5	Village Creek via storm sewer
DSN011-6	Village Creek via storm sewer
DSN011-7	Village Creek via storm sewer
DSN011-8	Village Creek via storm sewer
DSN011-9	Village Creek via storm sewer
DSN011-A	Village Creek via storm sewer
DSN011-B	Village Creek via storm sewer
DSN011-C	Village Creek via storm sewer
DSN011-D	Village Creek via storm sewer
DSN011-E	Village Creek via storm sewer

As indicated in the Notice of Intent, the discharges denoted by an asterisk (*) have been designated as the facility's representative outfalls. DSN001-3 and DSN001-A are the representative outfalls for DSN001-1, DSN001-2, DSN001-3, DSN001-4, DSN001-5, DSN001-6, DSN001-7, DSN001-8, DSN001-9, DSN001-A, DSN001-B, and DSN001-C.

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
3664 Dauphin Street, Suite B
Mobile, AL 36608-1211
(251) 304-1176
(251) 304-1189 (FAX)

You are responsible for compliance with all provisions of the permit including but not limited to, the performance of any monitoring, the submittal of any reports, and the preparation and implementation of any plans required by the permit.

Discharge Monitoring Reports (DMRs) must be submitted electronically via the Department's E2 Reporting System in accordance with Permit Condition I. C. To participate in this program, the Permittee Participation Package and registration forms may be downloaded online at https://e2.adem.alabama.gov/npdes. ADEM will not provide paper DMR forms due to the electronic reporting requirements.

An annual certification DMR is now required to be submitted electronically for each of the above DSN010 outfalls instead of a separate statement. Please be aware this DMR is for an entire calendar year (January – December) and shall not be submitted on or before December 31st of the calendar year being certified, but must be received by January 28th of the following year.

If you discharge to an impaired waterway, additional Best Management Practices (BMPs) will be required. The Alabama Department of Environmental Management encourages you to exercise pollution prevention practices and alternatives at your facility. Pollution prevention will assist you in complying with effluent limitations and permit regulations.

A copy of the General NPDES Permit under which coverage of your discharges has been granted is enclosed. If you have any questions concerning this permit, please contact Jessica Duncan by email at jcduncan@adem.alabama.gov or by phone at (334) 271-7828.

Sincerely,

Glenda L. Dean

Glenda L. Dean
Chief
Water Division

Enclosure: Permit

File: NOI/1770

ADEM
Alabama Department of Environmental Management

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT

DISCHARGE AUTHORIZED	DISCHARGES ASSOCIATED WITH TRANSPORTATION INDUSTRIES AND WAREHOUSING CONSISTING OF STORM WATER; NON-CONTACT COOLING WATER; UNCONTAMINATED CONDENSATE; COOLING TOWER BLOWDOWN; BOILER BLOWDOWN; DEMINERALIZER WASTEWATER; VEHICLE AND EQUIPMENT WASHWATER; STORM WATER FROM FUELING, PETROLEUM STORAGE AND HANDLING, EQUIPMENT STORAGE, MAINTENANCE AREAS; AND WASTEWATER ASSOCIATED WITH AIRFIELD PAVEMENT DEICING FROM EXISTING AND NEW PRIMARY AIRPORTS WITH 1,000 OR MORE ANNUAL JET (NON-PROPELLER AIRCRAFT) DEPARTURES.
AREA OF COVERAGE:	THE STATE OF ALABAMA
PERMIT NUMBER:	ALG140453
RECEIVING WATERS:	ALL WATERS OF THE STATE NOT DESIGNATED OUTSTANDING NATIONAL RESOURCE WATER OR OUTSTANDING ALABAMA WATER

In accordance with and subject to the provisions of Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1388 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, ***Code of Alabama 1975,*** *§§22- 2-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended,* ***Code of Alabama 1975****, §§22-22A-1 to 22-22A-17, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the dischargers covered by this permit are hereby authorized to discharge into the above receiving waters.*

ISSUANCE DATE:	June 8, 2017
EFFECTIVE DATE:	October 1, 2017
EXPIRATION DATE:	September 30, 2022

Glenda L. Dean

Alabama Department of Environmental Management

TRANSPORTATION GENERAL NPDES PERMIT
TABLE OF CONTENTS

PART I

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN001: Storm water from vehicle and equipment parking and maintenance areas

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS 1/	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Rainfall	inches	-	Monitor	1/6 months	2/
pH	s.u.	Monitor	Monitor	1/6 months	Grab
Benzene	µg/l	-	Monitor	1/6 months	Grab
Ethylbenzene	µg/l	-	Monitor	1/6 months	Grab
Toluene	µg/l	-	Monitor	1/6 months	Grab
Xylene	µg/l	-	Monitor	1/6 months	Grab
Naphthalene	µg/l	-	Monitor	1/6 months	Grab
Oil and Grease	mg/l	-	15	1/6 months	Grab
Total Phosphorus	mg/l	-	Monitor	1/6 months	Grab
Total Recoverable Lead	mg/l	-	Monitor	1/6 months	Grab
Total Suspended Solids	mg/l	-	Monitor	1/6 months	Grab

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.
2/ See Part IV.B.

PART I

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN002: Storm water from warehousing and storage of goods that are exposed to storm water (other than motorized equipment).

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS 1/	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Rainfall	inches	-	Monitor	1/6 months	2/
pH	s.u.	Monitor	Monitor	1/6 months	Grab
Oil and Grease	mg/l	-	15	1/6 months	Grab
Total Nitrogen	mg/l	-	Monitor	1/6 months	Grab
Total Organic Carbon	mg/l	-	Monitor	1/6 months	Grab
Total Suspended Solids	mg/l	-	Monitor	1/6 months	Grab

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.
2/ See Part IV.B.

PART I

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN003: Storm water from warehousing and storage of goods (other than motorized equipment) that are exposed to storm water and that contains heavy metals.

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS 1/	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Rainfall	inches	-	Monitor	1/6 months	2/
pH	s.u.	Monitor	Monitor	1/6 months	Grab
Total Recoverable Barium 3/	mg/l	-	Monitor	1/year	Grab
Oil and Grease	mg/l	-	15	1/6 months	Grab
Total Cyanide	mg/l	-	Monitor	1/year	Grab
Total Nitrogen	mg/l	-	Monitor	1/6 months	Grab
Total Organic Carbon	mg/l	-	Monitor	1/6 months	Grab
Total Recoverable Arsenic 3/	mg/l	-	Monitor	1/year	Grab
Total Recoverable Cadmium 3/	mg/l	-	Monitor	1/year	Grab
Total Recoverable Copper 3/	mg/l	-	Monitor	1/year	Grab
Total Recoverable Lead 3/	mg/l	-	Monitor	1/year	Grab
Total Mercury 3/	mg/l	-	Monitor	1/year	Grab
Total Recoverable Nickel 3/	mg/l	-	Monitor	1/year	Grab
Total Recoverable Silver 3/	mg/l	-	Monitor	1/year	Grab
Total Zinc 3/	mg/l	-	Monitor	1/year	Grab
Total Suspended Solids	mg/l	-	Monitor	1/6 months	Grab

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.
2/ See Part IV.B.
3/ Only those metals which a facility could contribute to storm water must be monitored.

PART I

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN004: Discharges associated with non-contact cooling water, cooling tower blowdown, uncontaminated condensate, and boiler blowdown and demineralizer wastewater. 1/ 2/

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS	
		Daily Minimum	Daily Maximum	Monthly Average	Measurement Frequency	Sample Type
Flow	gal/day	-	Monitor	-	1/month	Instantaneous
pH	s.u.	6.0	8.5	-	1/month	Grab
Temperature 3/	°F	-	90	-	1/month	Grab
Total Residual Chlorine 4/ 5/ 6/ 7/	mg/l	-	0.019	0.011	1/2 weeks	Grab
Chlorides, Total 8/	mg/l	-	860	-	1/month	Grab
Total Dissolved Solids 8/	mg/l	-	Monitor	-	1/month	Grab

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If necessary, the demineralizer wastewater may be diluted to meet water quality standards.

3/ Discharges into the Tennessee and Cahaba Rivers including their tributaries or into that stretch of the Tallapoosa River that lies between Thurlow Dam and the confluence of the Tallapoosa and Coosa Rivers including any tributaries shall not exceed 86°F.

4/ To be monitored if cooling water/boiler blowdown is discharged and/or during "shock chlorination", if applicable. Monitoring is not required if the discharge is greater than 2500 feet from a water of the state (provided the conditions of "Cooling Water Monitoring Options" of the "Notice of Intent" are met) or if the source water is free of chlorine and no chlorine is added to the cooling water system. However, the facility must code the total residual chlorine parameter on the electronic Discharge Monitoring Report (EDMR) as *9 or as "NODI=9" on the hard copy DMR (monitoring is conditional not required this period).

5/ Monitoring is required during "shock chlorination", if applicable.

6/ Monitoring is not required if the source water is free of chlorine and no chlorine is added to the cooling water system. However, the facility must code the total residual chlorine parameter on the electronic Discharge Monitoring Report (eDMR) as *9 or as "NODI=9" on the hard copy DMR (monitoring is conditional not required this period).

7/ A measurement of TRC below 0.05 mg/l shall be considered in compliance with the permit limitations above and should be reported as *B on the electronic Discharge Monitoring Report (eDMR) or as "NODI=B" on the hard copy DMR (below detection limit).

8/ To be monitored when demineralizer wastewater is discharged or when the boiler blowdown volume exceeds 5,000 GPD.

PART I

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN006: Storm water runoff from petroleum storage and fueling areas. 7/

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS 1/	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Rainfall	inches	-	Monitor	1/quarter	2/
pH	s.u.	Monitor	Monitor	1/quarter	Grab
Benzene 3/	µg/l	-	15.5	1/quarter	Grab
Ethylbenzene 4/	µg/l	-	1244	1/quarter	Grab
Toluene 5/	µg/l	-	8723	1/quarter	Grab
Xylene	µg/l	-	Monitor	1/quarter	Grab
Naphthalene 6/	µg/l	-	620	1/quarter	Grab
Oil and Grease	mg/l	-	15	1/quarter	Grab
MTBE (Methyl Tertiary Butyl Ether)	µg/l	-	Monitor	1/quarter	Grab

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.
2/ See Part IV.B.
3/ The limit for benzene shall be 1.12 µg/l if the discharge is to a body of water which is designated as a public water supply.
4/ The limit for ethylbenzene shall be 448 µg/l if the discharge is to a body of water which is designated as a public water supply.
5/ The limit for toluene shall be 1,206 µg/l if the discharge is to a body of water which is designated as a public water supply.
6/ To be monitored only at facilities which handle diesel fuel, aviation fuel, or jet fuel.
7/ If fueling operations are the only industrial activities occurring (except for other permitted industrial activities) within the drainage area, then DSN010 applies for the discharge, unless the Department deems it necessary to require monitoring under DSN006 in addition to DSN010.

PART I

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN007: Discharges associated with vehicle and equipment exterior washing operations that DO NOT use solvents.

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS 1/	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Flow	gal/day	-	Monitor	1/week	Instantaneous 2/
pH	s.u.	6.0	8.5	1/month	Grab
Oil and Grease	mg/l	-	15	1/month	Grab
Total Phosphorus	mg/l	-	1.0	1/month	Grab
Total Suspended Solids	mg/l	-	50	1/month	Grab
Biochemical Oxygen Demand, 5-day	mg/l	-	Monitor	1/month	Grab
Total Recoverable Lead 3/	µg/l	-	64	1/month	Grab
Total Recoverable Aluminum3/ 4/	mg/l	-	0.750	1/month	Grab
Total Recoverable Chromium3/	µg/l	-	1537	1/month	Grab

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.
2/ If flows are intermittent, the flow volume may be estimated.
3/ If wheel / chrome brighteners are used, monitoring of lead, aluminum, and chromium is required.
4/ The aluminum limit only applies to discharges to freshwater.

PART I

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN010: Discharge limitations and monitoring requirements for uncontaminated storm water from fueling, petroleum storage and handling, equipment storage, and maintenance areas. (This outfall may not mix with other discharges unless those discharges are permitted.)

Such discharge shall be limited and monitored by the permittee as specified below:

1. The facility will have a valid SPCC plan pursuant to 40 CFR 112, if applicable.

2. Best Management Practices (BMPs) will be used to prevent pollution of storm water by spillage or leakage during petroleum handling operations and fueling operations and from equipment maintenance and storage areas. The BMP shall include at a minimum:

   a. Twice per week inspections on operational days of the area and removal of any leaked petroleum product;
   b. Immediate cleanup of spilled or leaked petroleum product during handling operations, including fueling; and
   c. All cleanup activities shall be conducted using dry sweep or other approaches that do not result in the creation of polluted wastewater or storm water runoff.

3. Records shall be maintained in the form of a log and shall contain the following information, as a minimum:

   a. Date and time of inspections;
   b. Any cleanup accomplished as a result of the inspection;
   c. Time the cleanup was initiated and the time it was completed;
   d. The signature of person making visual inspection and performing any cleanup; and
   e. Description of any spillage occurring during petroleum handling, which shall include the date and time of the spill, estimated volume of spill, name of the person observing the spill, date and time the spill was cleaned up, and name of the person cleaning up the spill.

4. Best Management Practices (BMP) are used in draining the diked area. BMP is defined as use of a portable oil skimmer or similar device or the use of absorbent material to remove oil and grease (as indicated by the presence of a sheen) immediately prior to draining.

5. Monitoring records for dike drainage shall be maintained in the form of a log and shall contain the following information, as a minimum:

   a. Date and time of discharge;
   b. Estimated volume of discharge;
   c. The signature of person making visual inspection and authorizing discharge.

6. The discharge shall have no sheen, and there shall be no discharge of visible oil, floating solids or visible foam in other than trace amounts.

*7. The permittee shall submit an **ANNUAL CERTIFICATION** DMR by January 28th (unless otherwise directed by the Department) that all discharges during the preceding calendar year, associated with the above, were in accordance with the conditions of the permit.

AN ANNUAL CERTIFICATION DMR SHALL BE SUBMITTED BY JANUARY 28TH (UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT) MARKED "0" IF FOR THE PREVIOUS CALENDAR YEAR, OPERATIONS HAVE NOT CHANGED AND ALL DISCHARGES HAVE BEEN MADE IN ACCORDANCE WITH THE CONDITIONS OF THE PERMIT. IF CONDITONS HAVE CHANGED, THE DMR SHOULD BE MARKED "1" AND THE FACILITY SHOULD CONTACT THE DEPARTMENT REGARDING ANY CHANGES IN CONDITIONS OR DISCHARGE / PERMIT NONCOMPLIANCE. ANY NONCOMPLIANCE SHOULD ALSO BE ADDRESSED IN A NONCOMPLIANCE FORM THAT IS ELECTRONICALLY ATTACHED TO THE DMR IN THE E2 SYSTEM.

PART I

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN011: Discharge limitations and monitoring requirements for wastewater associated with airfield pavement deicing from existing and new primary airports with 1,000 or more annual jet (non-propeller aircraft) departures

Whenever possible, there should be no discharge of airfield pavement deicers containing urea from such airports.

To comply with this limitation, any existing point source must certify that it does not use airfield deicing products that contain urea or alternatively, airfield pavement discharges at every discharge point must achieve the below numeric limitation for ammonia, prior to any dilution or commingling with any non-deicing discharge.

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS 1/	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Ammonia as Nitrogen 3/	mg/l		14.7	1/ month	Grab

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.

2/ See Part IV.B.

3/ 40 CFR Part 449 requires that existing and new primary airports with 1,000 or more annual jet departures ("non-propeller aircraft") that generate wastewater associated with airfield pavement deicing are to use non-urea-containing deicers, or alternatively, meet the above numeric effluent limitation for ammonia. If no urea-containing deicers are used during the monitoring period, then the electronic DMR(s) may be coded *9 as certification of no discharge of airfield pavement deicers containing urea during the period.

PART I

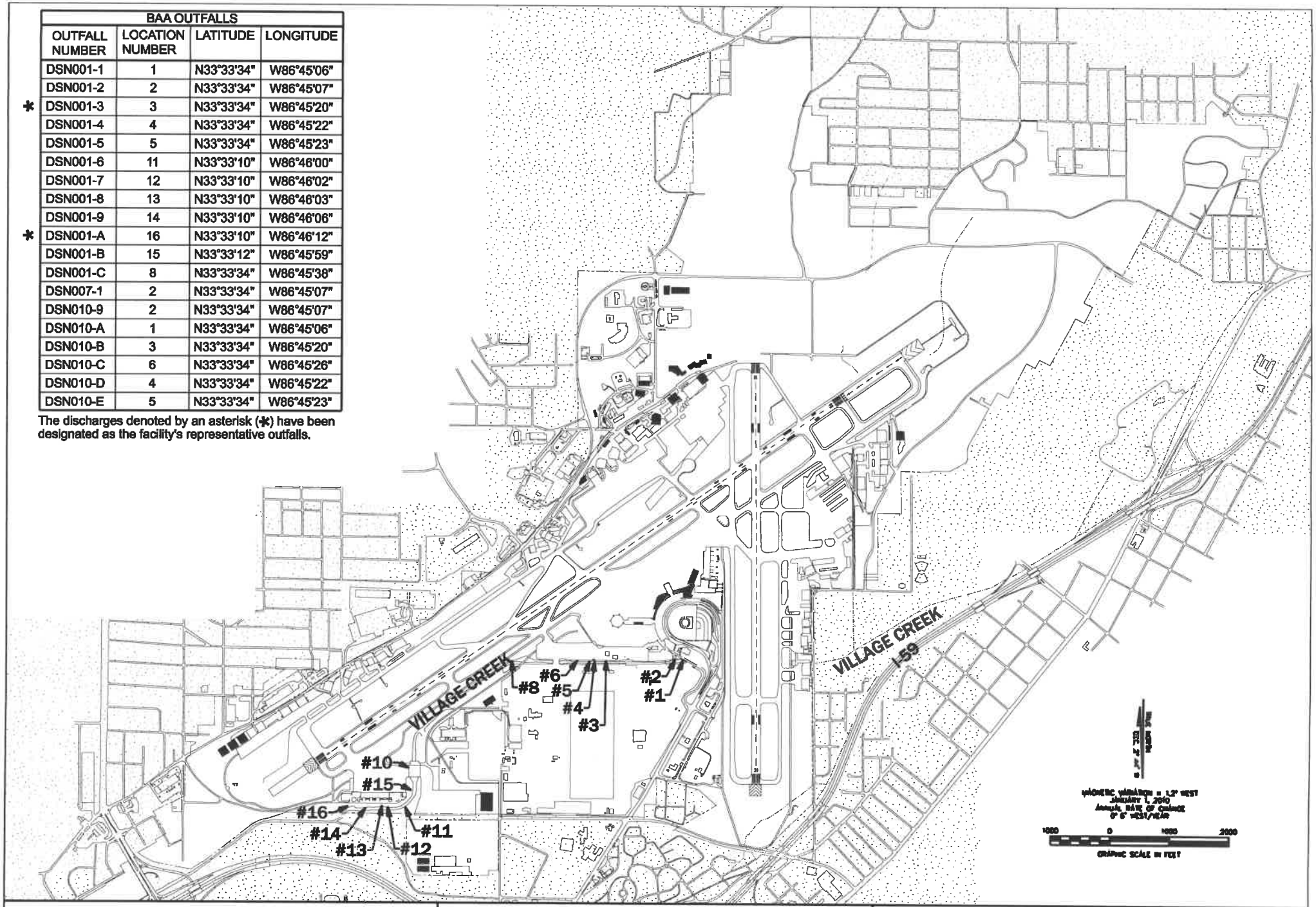
A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

Discharge monitoring requirements applicable to all discharges

1. Monitoring of one **storm water** outfall within a designed drainage area as representative of the remaining outfalls, may be allowed if the applicant submits certification that the discharges are essentially the same. If at a later date the discharges are determined to be dissimilar or if pollutant concentrations are such that water quality standards are contravened, then monitoring of all discharges may be required.

	BAA OUTFALLS			
	OUTFALL NUMBER	LOCATION NUMBER	LATITUDE	LONGITUDE
	DSN001-1	1	N33°33'34"	W86°45'06"
	DSN001-2	2	N33°33'34"	W86°45'07"
*	DSN001-3	3	N33°33'34"	W86°45'20"
	DSN001-4	4	N33°33'34"	W86°45'22"
	DSN001-5	5	N33°33'34"	W86°45'23"
	DSN001-6	11	N33°33'10"	W86°46'00"
	DSN001-7	12	N33°33'10"	W86°46'02"
	DSN001-8	13	N33°33'10"	W86°46'03"
	DSN001-9	14	N33°33'10"	W86°46'06"
*	DSN001-A	16	N33°33'10"	W86°46'12"
	DSN001-B	15	N33°33'12"	W86°45'59"
	DSN001-C	8	N33°33'34"	W86°45'38"
	DSN007-1	2	N33°33'34"	W86°45'07"
	DSN010-9	2	N33°33'34"	W86°45'07"
	DSN010-A	1	N33°33'34"	W86°45'06"
	DSN010-B	3	N33°33'34"	W86°45'20"
	DSN010-C	6	N33°33'34"	W86°45'26"
	DSN010-D	4	N33°33'34"	W86°45'22"
	DSN010-E	5	N33°33'34"	W86°45'23"

The discharges denoted by an asterisk (*) have been designated as the facility's representative outfalls.



General Permit # ALG14-0453

Birmingham-Shuttlesworth International Airport

Figure 2
Discharge Location Map

Appendix B
Material Safety Data Sheets

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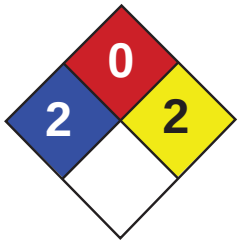

Health	2
Fire	0
Reactivity	1
Personal Protection	C

Material Safety Data Sheet
Calcium chloride, Anhydrous MSDS

Section 1: Chemical Product and Company Identification

Product Name: Calcium chloride, Anhydrous

Catalog Codes: SLC5011, SLC2221, SLC4012, SLC4798, SLC1006

CAS#: 10043-52-4

RTECS: EV9800000

TSCA: TSCA 8(b) inventory: Calcium chloride, Anhydrous

CI#: Not available.

Synonym:

Chemical Name: Calcium Chloride, Anhydrous

Chemical Formula: CaCl2

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Calcium chloride, Anhydrous	10043-52-4	100

Toxicological Data on Ingredients: Calcium chloride, Anhydrous: ORAL (LD50): Acute: 1000 mg/kg [Rat]. 1940 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to heart, cardiovascular system. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Furan-2-peroxycarboxylic acid + calcium chloride causes explosion at room temperature.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as moisture.

Storage:
Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 30°C (86°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Synthetic apron. Gloves (impervious).

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystalline solid.)

Odor: Odorless.

Taste: Saline.

Molecular Weight: 110.99 g/mole

Color: Colorless. White. Off-white.

pH (1% soln/water): 9 [Basic.]

Boiling Point: 1670°C (3038°F)

Melting Point: 772°C (1421.6°F)

Critical Temperature: Not available.

Specific Gravity: 2.15 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility:
Easily soluble in cold water, hot water, acetone. Freely soluble in alcohol. Soluble in Acetic Acid.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, moisture.

Incompatibility with various substances: Reactive with moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Hygroscopic. Reacts violently (violent boiling) with water, generating heat. Forms flammable gases and evolves hydrogen when reacted with zinc. Solutions attack some metals. Generates heat and violent polymerization occurs when mixed with methyl vinyl ether. Bromine trifluoride reacts violently with and attacks calcium chloride.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 1000 mg/kg [Rat].

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: heart, cardiovascular system.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose: LDL [Rabbit] - Route: Oral; Dose: 1384 mg/kg

Special Remarks on Chronic Effects on Humans:
May affect genetic material based on animal data. May cause cancer (tumorigenic) based on animal data.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause severe irritation and possible burns, especially if skin is wet. Contact with dry skin causes mild irritation. Contact of solid with moist/wet skin or skin contact with strong solutions may cause marked irritation or possible burns. Eyes: May cause severe irritation, possible transient corneal injury, and possible eye burns. Inhalation: May cause severe irritation of the upper respiratory tract with pain, inflammation and possible burns. Ingestion: May cause severe gastrointestinal (digestive) tract irritation with nausea, vomiting and possible burns. May affect cardiovascular system (cardiac disturbances, slow heart beat), behavior (seizures), metabolism, blood, and brain, respiration (rapid respiration). Chronic Potential Health Effects: effects may be delayed.

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 100 mg/l 96 hours [Fish].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Calcium chloride, Anhydrous

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R36- Irritating to eyes. S2- Keep out of the reach of children. S22- Do not breathe dust. S24- Avoid contact with skin.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 1

Personal Protection: C

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 2

Specific hazard:

Protective Equipment:
Gloves (impervious). Synthetic apron. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 04:31 PM

Last Updated: 06/09/2012 12:00 PM

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Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DIESEL FUEL No. 2

Product Use: Fuel
Product Number(s): CPS203410 [See Section 16 for Additional Product Numbers]
Synonyms: 15 S Diesel Fuel 2, Alternative Low Aromatic Diesel (ALAD), Calco LS Diesel 2, Calco ULS DF2, Calco ULS Diesel 2, Chevron LS Diesel 2, Chevron ULS Diesel 2, Diesel Fuel Oil, Diesel Grade No. 2, Diesel No. 2-D S15, Diesel No. 2-D S500, Diesel No. 2-D S5000, Distillates, straight run, Gas Oil, HS Diesel 2, HS Heating Fuel 2, Light Diesel Oil Grade No. 2-D, LS Diesel 2, LS Heating Fuel 2, Marine Diesel, RR Diesel Fuel, Texaco Diesel, Texaco Diesel No. 2, Ultra Low Sulfur Diesel 2
Company Identification
Chevron Products Company
Marketing, MSDS Coordinator
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
MSDS Requests: (800) 689-3998
Technical information: (510) 242-5357

SPECIAL NOTES: This MSDS covers all Chevron and Calco non-CARB Diesel No. 2 Fuels. The sulfur content is less than 0.5% (mass). Red dye is added to non-taxable fuel. (MSDS 6894)

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Diesel Fuel No. 2	68476-34-6	100 %wt/wt
Distillates, hydrodesulfurized, middle	64742-80-9	0 - 100 %wt/wt
Distillates, straight run middle (gas oil, light)	64741-44-2	0 - 100 %wt/wt
Kerosine	8008-20-6	0 - 25 %wt/wt
Kerosine, hydrodesulfurized	64742-81-0	0 - 25 %wt/wt
Distillates (petroleum), light catalytic cracked	64741-59-9	0 - 50 %wt/wt
Naphthalene	91-20-3	0.02 - 0.2 %wt/wt
Total sulfur	None	0 - 0.5 %wt/wt

SECTION 3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

- COMBUSTIBLE LIQUID AND VAPOR
- HARMFUL OR FATAL IF SWALLOWED - MAY CAUSE LUNG DAMAGE IF SWALLOWED
- CAUSES SKIN IRRITATION
- MAY CAUSE CANCER BASED ON ANIMAL DATA

****

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea
Inhalation: Mists of this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS:

Cancer: Prolonged or repeated exposure to this material may cause cancer. Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Diesel exhaust particulate has been classified as reasonably anticipated to be a human carcinogen in the National Toxicology Program's Ninth Report on Carcinogens. The National Institute of Occupational Safety and Health (NIOSH) has recommended that whole diesel exhaust be regarded as potentially causing cancer. Diesel engine exhaust is known to the State of California to cause cancer. Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Combustible liquid.

NFPA RATINGS: Health: 0 Flammability: 2 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Pensky-Martens Closed Cup) 52 °C (125 °F) (Min)
Autoignition: 257 °C (494 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 0.6 Upper: 4.7

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material

undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 29C (85F).
Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Do not breathe mist. Wash thoroughly after handling. Keep out of the reach of children.
Unusual Handling Hazards: WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Viton, Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.

When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Diesel Fuel No. 2	ACGIH	100 mg/m3	--	--	Skin A3 total hydrocarbon
Diesel Fuel No. 2	CVX	--	1000 mg/m3	--	--
Kerosine	ACGIH	200 mg/m3	--	--	Skin A3 Total hydrocabon vapor
Kerosine	CVX	--	1000 mg/m3	--	--
Kerosine, hydrodesulfurized	ACGIH	200 mg/m3	--	--	Skin A3 Total hydrocabon vapor
Kerosine, hydrodesulfurized	CVX	--	1000 mg/m3	--	--
Naphthalene	ACGIH	10 ppm (weight)	15 ppm (weight)	--	Skin
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: 0.04 kPa (Approximate) @ 40 °C (104 °F)
Vapor Density (Air = 1): >1
Boiling Point: 175.6 °C (348 °F) - 370 °C (698 °F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.8 - 0.88 @ 15.6 °C (60.1 °F) (Typical)
Viscosity: 1.9 cSt - 4.1 cSt @ 40 °C (104 °F)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: This material did not cause skin sensitization reactions in a Buehler guinea pig test.
Acute Dermal Toxicity: LD50: >5ml/kg (rabbit).
Acute Oral Toxicity: LD50: > 5 ml/kg (rat)
Acute Inhalation Toxicity: 4 hour(s) LC50: > 5mg/l (rat)

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains gas oils
CONCAWE (product dossier 95/107) has summarized current health, safety and environmental data available for a

number of gas oils, typically hydrodesulfurized middle distillates. CAS 64742-80-9, straight-run middle distillates, CAS 64741-44-2, and/or light cat-cracked distillate CAS 64741-59-9. CARCINOGENICITY: All materials tested have caused the development of skin tumors in mice, but all featured severe skin irritation and sometimes a long latency period before tumors developed. Straight-run and cracked gas oil samples were studied to determine the influence of dermal irritation on the carcinogenic activity of middle distillates. At non-irritant doses the straight-run gas oil was not carcinogenic, but at irritant doses, weak activity was demonstrated. Cracked gas oils, when diluted with mineral oil, demonstrated carcinogenic activity irrespective of the occurrence of skin irritation. Gas oils were tested on male mice to study tumor initiating/promoting activity. The results demonstrated that while a straight-run gas oil sample was neither an initiator or promotor, a blend of straight-run and FCC stock was both a tumor initiator and a promoter.
GENOTOXICITY: Hydrotreated & hydrodesulfurized gas oils range in activity from inactive to weakly positive in in-vitro bacterial mutagenicity assays. Mouse lymphoma assays on straight-run gas oils without subsequent hydrodesulphurization gave positive results in the presence of S9 metabolic activation. In-vivo bone marrow cytogenetics and sister chromatic exchange assay exhibited no activity for straight-run components with or without hydrodesulphurization. Thermally or catalytically cracked gas oils tested with in-vitro bacterial mutagenicity assays in the presence of S9 metabolic activation were shown to be mutagenic. In-vitro sister chromatic exchange assays on cracked gas oil gave equivocal results both with and without S9 metabolic activation. In-vivo bone marrow cytogenetics assay was inactive for two cracked gas oil samples. Three hydrocracked gas oils were tested with in-vitro bacterial mutagenicity assays with S9, and one of the three gave positive results. Twelve distillate fuel samples were tested with in-vitro bacterial mutagenicity assays & with S9 metabolic activation and showed negative to weakly positive results. In one series, activity was shown to be related to the PCA content of samples tested. Two in-vivo studies were also conducted. A mouse dominant lethal assay was negative for a sample of diesel fuel. In the other study, 9 samples of No 2 heating oil containing 50% cracked stocks caused a slight increase in the number of chromosomal aberrations in bone marrow cytogenetics assays. DEVELOPMENTAL TOXICITY: Diesel fuel vapor did not cause fetotoxic or teratogenic effects when pregnant rats were exposed on days 6-15 of pregnancy. Gas oils were applied to the skin of pregnant rats daily on days 0-19 of gestation. All but one (coker light gas oil) caused fetotoxicity (increased resorptions, reduced litter weight, reduced litter size) at dose levels that were also maternally toxic.

This product contains naphthalene.
GENERAL TOXICITY: Exposure to naphthalene has been reported to cause methemoglobinemia and/or hemolytic anemia, especially in humans deficient in the enzyme glucose-6-phosphate dehydrogenase. Laboratory animals given repeated oral doses of naphthalene have developed cataracts. REPRODUCTIVE TOXICITY AND BIRTH DEFECTS: Naphthalene did not cause birth defects when administered orally to rabbits, rats, and mice during pregnancy, but slightly reduced litter size in mice at dose levels that were lethal to the pregnant females. Naphthalene has been reported to cross the human placenta.
GENETIC TOXICITY: Naphthalene caused chromosome aberrations and sister chromatid exchanges in Chinese hamster ovary cells, but was not a mutagen in several other in-vitro tests.
CARCINOGENICITY: In a study conducted by the National Toxicology Program (NTP), mice exposed to 10 or 30 ppm of naphthalene by inhalation daily for two years had chronic inflammation of the nose and lungs and increased incidences of metaplasia in those tissues. The incidence of benign lung tumors (alveolar/bronchiolar adenomas) was significantly increased in the high-dose female group but not in the male groups. In another two-year inhalation study conducted by NTP, exposure of rats to 10, 30, and 60 ppm naphthalene caused increases in the incidences of a variety of nonneoplastic lesions in the nose. Increases in nasal tumors were seen in both sexes, including olfactory neuroblastomas in females at 60 ppm and adenomas of the respiratory epithelium in males at all exposure levels. The relevance of these effects to humans has not been established. No carcinogenic effect was reported in a 2-year feeding study in rats receiving naphthalene at 41 mg/kg/day. This product may contain significant amounts of Polynuclear Aromatic Hydrocarbons (PAH's) which have been shown to cause skin cancer after prolonged and frequent contact with the skin of test animals. Brief or intermittent skin contact with this product is not expected to have serious effects if it is washed from the skin. While skin cancer is unlikely to occur in human beings following use of this product, skin contact and breathing of mists, vapors or dusts should be reduced to a minimum.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
48 hour(s) EC50: 20-210 mg/l (Daphnia magna)
96 hour(s) LC50: 21-210 mg/l (Salmo gairdneri)
72 hour(s) EC50: 2.6-25 mg/l (Raphidocellus subcapitata)

ENVIRONMENTAL FATE
On release to the environment the lighter components of diesel fuel will generally evaporate but depending on local environmental conditions (temperature, wind, mixing or wave action, soil type, etc.) the remainder may become dispersed in the water column or absorbed to soil or sediment. Diesel fuel would not be expected to be readily biodegradable. In a

modified Strum test (OECD method 301B) approximately 40% biodegradation was recorded over 28 days. However, it has been shown that most hydrocarbon components of diesel fuel are degraded in soil in the presence of oxygen. Under anaerobic conditions, such as in anoxic sediments, rates of biodegradation are negligible.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: UN1202, GAS OIL, COMBUSTIBLE LIQUID, III

IMO/IMDG Shipping Description: UN1202, GAS OIL, 3, III, FLASH POINT SEE SECTION 5

ICAO/IATA Shipping Description: UN1202, GAS OIL, 3, III

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated:

Diesel Fuel No. 2	07
Distillates, straight run middle (gas oil, light)	06
Kerosine	05, 06, 07
Naphthalene	01-2B, 02, 03, 04, 05, 06, 07

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Naphthalene	100 lbs	None	55556 lbs

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States)

NEW JERSEY RTK CLASSIFICATION:
Refer to components listed in Section 2. Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: DIESEL FUEL

WHMIS CLASSIFICATION:
Class B, Division 3: Combustible Liquids
Class D, Division 2, Subdivision A: Very Toxic Material - Carcinogenicity

Class D, Division 2, Subdivision B: Toxic Material - Skin or Eye Irritation

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 2 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE - Personal Protection Equipment Index recommendation, * - Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

Additional Product Number(s): CPS203413, CPS203417, CPS220122, CPS225114, CPS225115, CPS225150, CPS266176, CPS270000, CPS270005, CPS270094, CPS270095, CPS270096, CPS271006, CPS272006, CPS272007, CPS272008, CPS272009, CPS272010, CPS272011, CPS272012, CPS272013, CPS272093, CPS272102, CPS272126, CPS272152, CPS272185, CPS272190, CPS272195, CPS272593, CPS272601, CPS272693, CPS272793, CPS273003, CPS273030, CPS273053, CPS275000

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1, 2, 16.

Revision Date: March 21, 2008

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

HMIS RATINGS:
Health: 1
Flammability: 2
Reactivity: 0
Personal Protection: B

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: NBC DEGREASER
Chemical Family: Degreaser/Cleaner
Distributed By: K-Chem, Inc.
P.O. BOX 530632
Birmingham, AL 35253

Emergency Telephone Number: (800)535-5053
Date Prepared: AUG 20, 2003
MSDS Number: DG76D5
MFGD. BY: ABC Compounding Co., Inc.
6970 Jonesboro Rd.
Morrow, Ga. 30260

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

CAS NUMBER	CHEMICAL NAME	% BY WGHT.	OSHA PEL/ ACGIH TLV	SARA 302/304(1)*	SARA 313 (2)*	STATE INFO(3)(4)
141-43-5	Monoethanolamine	< 5.0	3 ppm / 3 ppm	NO	NO	NO
5989-27-5	D'limonene	< 3.0	n/e / n/e	NO	NO	NO
64-02-8	Tetrasodium salt of Ethylenediamine-tetraacetic acid	< 2.0	n/e / n/e	NO	NO	NO

* See Section 15 for more information

n/e = none established - n/a = not applicable

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER. Corrosive. Causes irritation of skin and respiratory tract.
Clear, yellow liquid with citrus/orange fragrance. COMBUSTIBLE.

Primary Route of Entry: Eye contact, skin contact, inhalation

Acute/Potential Health Effects:

EYES: Causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, with redness and swelling of the conjunctiva.

SKIN: Brief contact may cause slight irritation. Prolonged contact may cause more severe irritation with pain, local redness and swelling and possible tissue destruction.

INHALATION: High concentrations of mist may cause irritation of the respiratory tract.

INGESTION: May cause headache, dizziness, incoordination, nausea, vomiting, diarrhea and general weakness.

Section 3: HAZARDS IDENTIFICATION - continued:

Chronic / Long Term Effects: None known.

Signs and Symptoms of Overexposure: Dermal exposure may cause local redness and swelling, pain and discomfort.

Target Organ Effects: No data.

Reproductive/Developmental Information: No data.

Carcinogenic Information: This material is not listed as a carcinogen by IARC, NTP or OSHA.

Section 4: FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

SKIN: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

INGESTION: Seek medical attention immediately. Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Never give anything by mouth to an unconscious person.

Section 5: FIRE FIGHTING MEASURES

Flash Point: 180 degrees F (TCC method)
Extinguishing Media: Use appropriate methods for combating surrounding fire.
Special Fire Fighting Instructions: Wear a self contained breathing apparatus with a full face piece operated in the positive pressure demand mode. Chemical resistant PPE is recommended.

Section 6: ACCIDENTAL RELEASE MEASURES

Stop all leaks. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Absorb spill with inert material (e.g. dry sand, earth). Prevent runoff from entering drains, sewers or other bodies of water. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal.

Section 7: HANDLING AND STORAGE

Follow all MSDS/label precautions even after container is emptied because they may contain product residues. Use with adequate ventilation. Do not get in eyes, on skin or clothing. Store in a cool, dry place. Keep container closed when not in use. Keep out of reach of children.

Section 8: EXPOSURE CONTROLS and PERSONAL PROTECTION

Eye Protection: Wear safety glasses or goggles.

Skin Protection: To prevent repeated or prolonged contact, wear impervious gloves (made from rubber, nitrile or neoprene), clothing and boots.

Respiratory Protection: When respiratory protection is required, use an organic vapor cartridge. A respiratory program that meets OSHA's 29 CFR 1910.34 & ANSI Z88.2 requirements must be followed.

Engineering Controls: Good general ventilation required.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear, yellow liquid with citrus/orange fragrance
pH Concentrate: 12.0
Solubility in Water: Complete
Vapor Pressure [mmHg]: n/e
Evaporation Rate (Butyl Acetate=1): n/e
Vapor Density [Air=1]: n/e
Specific Gravity [H20=1]: 1.02
Boiling Point: > 212 F

Section 10: REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur
Conditions to avoid: High temperature
Hazardous Decomposition Products: None
Incompatibility: Strong acids, alkalis, oxidizing agents

Section 11: TOXICOLOGICAL INFORMATION

No data.

Section 12: ECOLOGICAL INFORMATION

No data.

Section 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Wastes must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: TRANSPORTATION INFORMATION

D.O.T. Shipping Name / Class:

Corrosive Liquid, Basic, Inorganic, N.O.S., 8

UN 3267, II (Contains Ethanolamine)

Section 15: REGULATORY INFORMATION

U.S. Federal Regulations:

TSCA (Toxic Substances Control Act): The intentional ingredients of product are listed.

Title III Section 311/312 Hazardous Categories - 40 CFR 370.2:
ACUTE (X) Chronic ( ) Fire (X) Pressure ( ) Reactive ( ) Not Applicable ( )

(1) Title III Section 302/304 Extremely Hazardous Substances - 40 CFR 355 Appendix A

(2) Title III Section 313 Toxic Chemicals - 40 CFR 372.65

If indicated under Section 2 of this MSDS, this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning & Community Right to Know Act of 1986. This information must be included in all MSDS that are copied and distributed for this material.

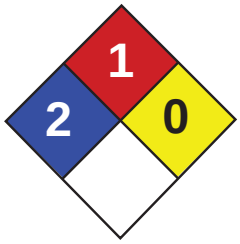
RCRA Status: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. If this product becomes a hazardous waste it would be assigned RCRA Code(s)
None

State and Local Regulations: Certain states maintain their own ingredient lists which differ slightly from the Federal standards. If indicated under Section 2 of this MSDS, states listed below may have regulations on ingredients contained in this product. Check with your state for any additional regulations.
(3) California proposition 65 (Safe Drinking Water & Toxic Enforcement Act of 1986)
(4) Massachusetts (Hazardous Substance Disclosure by Employers)

Section 16: OTHER INFORMATION

This information was compiled from current manufacturer's MSDS's of the component parts of the product.

Disclaimer: The Manufacturer believes that the information contained in the Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements.



Health	2
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Potassium acetate MSDS

Section 1: Chemical Product and Company Identification

Product Name: Potassium acetate

Catalog Codes: SLP1285, SLP4909, SLP2083

CAS#: 127-08-2

RTECS: AJ3325000

TSCA: TSCA 8(b) inventory: Potassium acetate

CI#: Not available.

Synonym:

Chemical Name: Not available.

Chemical Formula: CH3COOK

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Potassium acetate	127-08-2	100

Toxicological Data on Ingredients: Potassium acetate: ORAL (LD50): Acute: 3250 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of eye contact (irritant), of ingestion. Slightly hazardous in case of skin contact (irritant), of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact: Not available.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation: Not available.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes Wear suitable protective clothing If ingested, seek medical advice immediately and show the container or the label.

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 98.14 g/mole

Color: Not available.

pH (1% soln/water): 10 [Basic.]

Boiling Point: Decomposes.

Melting Point: 292°C (557.6°F)

Critical Temperature: Not available.

Specific Gravity: 1.57 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 3250 mg/kg [Rat].

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Potassium acetate

Other Regulations: Not available..

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC): R36- Irritating to eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:48 PM

Last Updated: 11/01/2010 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

Appendix C
Personnel Training Program

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Appendix C: PERSONNEL TRAINING PROGRAM

BIRMINGHAM AIRPORT AUTHORITY
STORM WATER POLLUTION PREVENTION (SWPP)
PERSONNEL TRAINING PROGRAM

The SWPPP & BMP Plan includes provision for training of personnel who may be involved directly or indirectly in storm water management. The Plan itself may be used as a guide for detailed reference during training sessions, and the training program outline should loosely follow the organization of the Plan.

The following is an outline of the training topics to be covered. Additional recommendations on topics for training are located in Section 4.2.5 of the Plan.

Training for Department Directors & Managers

Training for department directors and managers should be conducted on an annual basis at a minimum. The program must include both introductory training for personnel new to BAA and continuing education for experienced personnel. Topics to be covered under each aspect of the program include:

Introduction to Storm Water Pollution Prevention

- Regulatory framework
- Potential pollutant sources
- Storm water monitoring program
- Best Management Practices (BMP)
- Control of non-storm water discharges
- CSCE and response implementation
- Personnel roles and responsibilities
- Reporting and compliance

Continuing Education

- Recent regulatory changes
- Recent developments in storm water monitoring
- Experiences at other facilities

Annual Training for BAA Personnel

Information must be included in the storm water management training program to assure proper understanding and implementation of the following non-structural BMPs:

- Good housekeeping procedures
- Spill prevention and response
- Preventative maintenance
- Inspections
- Personnel awareness

- Reporting and record keeping for spills
- Non-storm water discharge prevention

The program should provide personnel with an understanding of the importance of their role in pollution prevention. Emphasis on individual participation is the key to a successful training program.

Training Documentation

Records of personnel attendance of training sessions must be retained as part of the SWPPP & BMP. All attendance logs of BAA storm water training shall be reported to the ECO and retained by the ECO for inclusion as a part of this Plan. **Appendix C-1** may be photocopied and used as an attendance sheet at each training session to serve as a record of required training(s).

Appendix C-1
Storm Water Pollution Prevention Training Log

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Appendix C-1

Birmingham Airport Authority

STORM WATER POLLUTION PREVENTION TRAINING LOG

TRAINING DATE:_____

Printed Name	Job Title	Department/Organization	Signature

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Appendix D-1
Twice Weekly Storm Water Inspection Checklist

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Twice Weekly Storm Water Inspection Checklist

Person(s) conducting inspection:	
Weather conditions at time of inspection:	
Inspection Date:	**Time:**

Items Inspected	**Yes**	**No**	**Description & Comments (Note tank/equipment ID)**
Aboveground Storage Tanks			
AST locations properly locked or secured?			
Containment berm shows visible sheen, oil, foam or floating solids			
Tank area clear of trash and vegetation			
Equipment protectors, labels, or signs are present			
Transfer equipment/Vehicle Fueling Area			
Secondary containment (e.g. drip pans) available for use?			
Evidence of fuel spill observed			
Puddles containing spilled or leaked material?			
Evidence of leaks especially at hoses or nozzles?			
Warning signs present and in good condition?			
BMPS			
Silt Fences (sediment barriers) functioning per design			
Check (filter) dams functioning per design			
Erosion blankets functioning per design			
Rip rap functioning per design			
Swales & Berms functioning per design			
Outlet/Inlet protection functioning per design			
Containment dikes & curbing functioning per design			
Structural covers used			
Oil water separator functioning			
Industrial activity areas covered?			
Areas properly graded to prevent polluted stormwater runoff?			
Good Housekeeping			
Dumpster & trash receptacles covered or closed?			
Trash collection areas covered & use containment?			
Material storage areas secure?			
Storage materials wrapped, sealed or contained?			
Stored materials off of floor? Or on pallets?			
Leaky equipment being used?			
Drip pans used under leaking equipment?			
Shop floors, ground surfaces and work areas contaminated with oils or other pollutants?			

Items Inspected	**Yes**	**No**	**Description & Comments (Note tank/equipment ID)**
Batteries stored properly (indoors, on pallets)			
Waterways & drainage ditches clear & maintained?			
Waterways & drainage ditches need maintenance?			
Stormwater Inlets & outlets functioning properly?			
Stormwater Inlets, outlets, need maintenance?			
Soil stock piles (no activity for 13 days) mulched or seeded?			
Outdoor washing of vehicles, aircraft, or equip. observed			
Exposed Significant Materials (Materials observed exposed to storm water during Inspection. If yes, note location in comment column)			
Fuel (diesel, gasoline, JET A)			
Hyd. Oils/Lubricants/Greases			
Stripping compounds			
Paints			
Chemical/solvents			
Detergents			
Herbicides/Pesticides			
Other			

Description of Other Conditions Needing Corrective Action:

Further description and comments, if needed, should be provided on a separate sheet of paper and attached to this sheet. Any item needing repair, replacement or maintenance should be promptly reported to BAA Maintenance as it may result in non-compliance with regulatory requirements. This record of inspection should be maintained with the SWPPP & BMP Plan at the BAA Planning and Development office.

Inspector Signature _____

Appendix D-2
Preventive Maintenance Inspection Checklist

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Preventive Maintenance Inspection Checklist

To be Performed Twice per Week

Person(s) conducting inspection:	
Weather conditions at time of inspection:	
Inspection Date:	**Time:**

Items Inspected	**Yes**	**No**	**Description & Comments (Note tank/equipment ID)**
Aboveground Storage Tanks			
Tank surface shows sign of leakage?			
Tank shows signs of damage, rust or deterioration?			
Drip marks present?			
Leaks from welds or seams?			
Puddles at base of tank containing spilled or leaked material?			
Corrosion visible (pitting/flaking) especially at base?			
Cracks in metal?			
Bolts or rivets damaged?			
Shutoff valves operable?			
Warning signs present and in good condition?			
Spill response kit present?			
Spill response stocked with:			
Sorbent pillows			
Sorbent SOCs			
Disposal bags for contaminated material			
Chemical resistant gloves			
Protective goggles			
Empty 55 gallon drum available for contaminated material?			
Aboveground Storage Tank Foundations			
Cracks in foundation?			
Aboveground tank supports are deteriorated or buckled?			
Signs of tank foundations eroding or settling?			
Trash or vegetation around tank foundation?			
Transfer Equipment (Fueling Area)			
Evidence of leaks from seals, valves or hoses?			
Corrosion visible on transfer equipement?			
Are lines/hoses damaged or deteriorated?			
Are fuel nozzles' automatic shutoffs working properly?			
Spill response items available nearby?			

(checklist continued on back)

Items Inspected	Yes	No	Description & Comments (Note tank/equipment ID)
Material Storage & Maintenance Areas			
Stored material leaking or spilled?			
Stored material exposed to storm water (rain)?			
Parked equipment leaking?			
Spill response items available nearby?			

Additional Comments:

Further description and comments, if needed, should be provided below or on a separate sheet of paper and attached to this sheet. **Work order(s) should be submitted promptly for any item needing repair, replacement or maintenance as the improper condition may result in non-compliance with regulatory requirements.**

This record of inspection must be retained by the BAA Maintenance Department for transmittal to Planning and Development office. All preventative maintenance inspections shall be included in the BAA's SWPPP & BMP Plan in accordance with the BAA's General NPDES Permit ALG140453.

Inspector Signature _____

Appendix D-3
Comprehensive Site Compliance Evaluation Checklist

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Appendix D-3 Birmingham Airport Authority

Comprehensive Site Evaluation Checklist

Personnel Conducting Field Inspection: _____

Field Inspection Date: _____

Weather Conditions During Field Inspection: _____

Date of Last Rain Event Before Field Inspection: _____

FIELD INSPECTION

Items Inspected	**Yes**	**No**	**Description & Comments (Note tank/equipment ID)**
Industrial Activity Areas ***Evidence of or Potential for Pollutants Entering Storm Water System***			
Aboveground Storage Tanks			
Aboveground Storage Tank Foundations			
Aboveground Storage Tank Piping			
Transfer Equipment			
Vehicle Fueling Areas			
Material Storage Areas			
Storm Water System ***(should be checked after rainfall event)***			
Inlet functioning properly?			
Inlet maintenance needed?			
Outlet functioning properly?			
Outlet maintenance needed?			
Culvert/Pipe functioning properly?			
Culvert/Pipe maintenance needed?			
Water ways & drainage ditches draining properly?			
Water ways & drainage ditches need maintenance?			
Water ponding in unsuitable area?			
BMPs ***Functioning Per Design (should be checked during rainfall)***			
Silt Fences (sediment barriers)			
Check dams/Filter dams			
Erosion blankets			
Rip Rap			
Swales & Berms			

Items Inspected	**Yes**	**No**	**Description & Comments (Note tank/equipment ID)**
Outlet/Inlet protection			
Containment dikes & curbing			
Structural covers			
Oil water separators			
Are all BMPs installed properly? If not, note specific deficiencies			
Are additional control measures or BMPs needed? If so, note specific locations			
Are bare spots present?			
Is ground cover adequate in all areas?			

Inspection of Outfalls – Check for the following: Color, Foam, Outfall Staining, Visible Sheen

	Present	**Not Present**
DSN001-1 (Outfall #1)	o	o
DSN001-2 (Outfall #2)	o	o
DSN001-3 (Outfall #3)	o	o
DSN001-4 (Outfall #4)	o	o
DSN001-5 (Outfall #5)	o	o
DSN001-6 (Outfall #11)	o	o
DSN001-7 (Outfall #12)	o	o
DSN001-8 (Outfall #13)	o	o
DSN001-9 (Outfall #14)	o	o
DSN001-A (Outfall #16)	o	o
DSN001-B (Outfall #15)	o	o
DSN001-C (Outfall #8)	o	o
DSN007-1 (Outfall #2)	o	o
DSN010-9 (Outfall #2)	o	o
DSN010-A (Outfall #1)	o	o
DSN010-B (Outfall #3)	o	o
DSN010-C (Outfall #6)	o	o
DSN010-D (Outfall #4)	o	o
DSN010-E (Outfall #5)	o	o

Required Action:

Additional Comments:

Personnel Conducting SWPPP & BMP Inspection: _____

SWPPP & BMP Inspection Date: _____

SWPPP & BMP PLAN REVIEW

	No Action Required	Action Required	Not Applicable
Accuracy of SWPPP & BMP Figures	o	o	o
Identification and location of outfalls and storm water inlets			
Drainage basin boundaries	o	o	o
Direction of runoff flow	o	o	o
Buildings, facilities and impervious areas	o	o	o
Exposed material storage areas	o	o	o
Locations of significant spills	o	o	o

Required Action: _____

_____

Accuracy of SWPPP & BMP Plan and Related Records

Significant material inventory & locations (Table & Figure 3.1-1)	o	o	o
Aboveground storage tanks & locations (Table & Figure .2.8-1)	o	o	o
Description of potential pollutant sources accurate?	o	o	o
Description of pollution prevention measures & controls accurate?	o	o	o
Does Plan reflect current conditions/operating procedures?	o	o	o

Required Action: _____

_____

Required SWPPP & BMP Plan Documents included

Personnel training record log (Appendix C-1)	o	o	o
Twice weekly storm water inspection records (Appendix D-1)	o	o	o
Preventive maintenance inspection records (Appendix D-2)	o	o	o
CSCE inspection records (Appendix D-3)	o	o	o
Updated SPCC?	o	o	o

Required Action: _____

_____

	No Action Required	Action Required	Not Applicable
Good housekeeping practices			
Preventative maintenance program/inspections	o	o	o
Spill prevention and response	o	o	o
Personnel training and awareness	o	o	o
Non-storm water discharge control	o	o	o
Record keeping and internal reporting	o	o	o
Structural measures and controls accurate	o	o	o
Drainage Area 01	o	o	o
Drainage Area 02	o	o	o
Drainage Area 03	o	o	o
Drainage Area 04	o	o	o
Drainage Area 05	o	o	o
Drainage Area 06	o	o	o
Drainage Area 07	o	o	o
Drainage Area 08	o	o	o
Drainage Area 09	o	o	o
Drainage Area 10	o	o	o
Drainage Area 11	o	o	o
Drainage Area 12	o	o	o
Drainage Area 13	o	o	o
Drainage Area 14	o	o	o

Required Action:_____

Appendix E
Best Management Practices Fact Sheets

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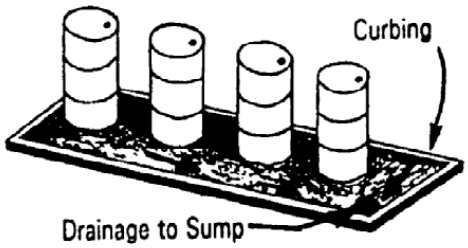
Containment Dikes

DESCRIPTION:

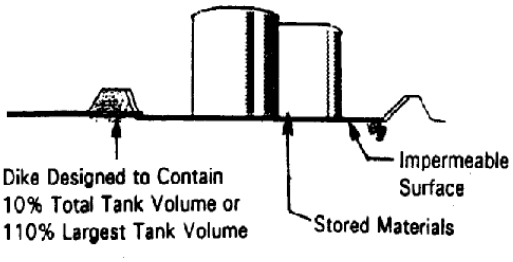
Containment dikes contain spills, leaks, and polluted runoff which may be generated in storage areas. Small storage areas are also often surrounded by curbs to contain any small leaks and spills. These curbs also serve as a diversion to prevent run on from contacting the contaminated ground of the storage area.

DESIGN CRITERIA:



- Common materials for containment are asphalt, concrete, synthetics, metals, or other impenetrable materials.
- Area within containment should be graded to one side or corner for easy removal of accumulated liquid.
- Curbed areas should be easily accessible for maintenance equipment to pump spills out. Although integral drainage for spills is not necessary, a drainage sump will simplify maintenance.
- If curbs will be subject to vehicle traffic, use reinforced curbs in areas of concern.
- If possible, consider recycling materials which are caught by curbs.
- Loading and receiving docks should be provided with a door skirt for minor spills and should be surrounded by containment measures in case of larger spills.

MAINTENANCE AND INSPECTION REQUIREMENTS:



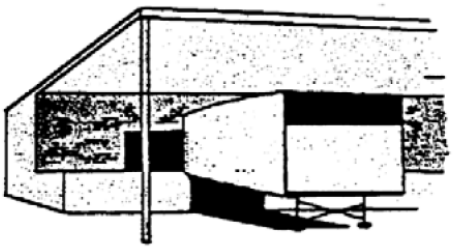
- Inspect containment before forecasted storms and immediately after storms to ensure that all leaked materials have been removed. This will simplify cleanup and recycling efforts.
- Maintain dikes and curbs by patching and replacement as necessary.
- All spills should be cleaned up immediately, to prevent overflow and reduce the chances of runoff contamination.

COST CONSIDERATIONS:

- Capital cost of diking is dependent on the volume required.
- Curbs are relatively inexpensive in terms of materials and installation, but vehicle traffic may incur frequent maintenance costs.

Structural Cover

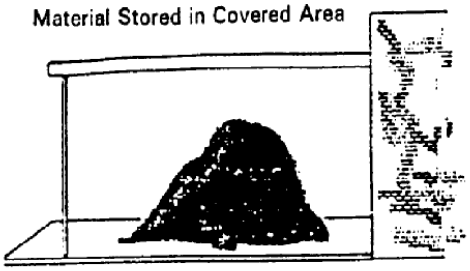
DESCRIPTION:



Many of the industrial shops conduct operations which involve the loading and unloading of materials and liquids to and from vehicles, above and below ground storage tanks, and containment areas. During these operations, pollutants which are harmful to water quality may be exposed to storm water. Areas around loading/ unloading operations may become contaminated by spills, leaks, or lost materials, which are then carried by storm water runoff or area wash water. Storm water exposure to equipment used in loading/unloading of materials can also contribute to runoff contamination. A simple and effective means of storm water pollution source control is to use a structural cover to prevent contact.

DESIGN CRITERIA:

- Outdoor loading docks should be covered to eliminate direct exposure; roof drains should be directed away from loading area.



MAINTENANCE AND INSPECTION REQUIREMENTS:

- Minimal maintenance expected.

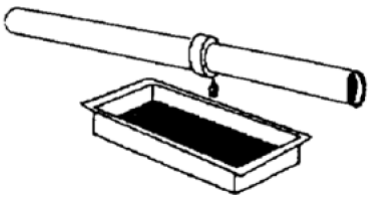
COST CONSIDERATIONS:

- Implementation costs will vary, depending on size of facility, but in general installation will be only moderately expensive.
- Maintenance costs should be low.

Drip Pans

DESCRIPTION:

Minor spills and leaks are a widespread source of storm water pollution. They often go unnoticed, or they happen on such a small scale that personnel do not bother to take precautions against them. Drip pans are a source control measure which provides an easy, inexpensive way of containing such small spills. They may be used on a permanent basis, or transferred from place to place. Permanent drip pans may consist of a channel or depression in concrete or other impervious pavement which drain to storage.



DESIGN CRITERIA:

- The pans should be sized according to the source from which drips are anticipated.
- Drip pans should be placed away from walkways or areas where they might be knocked over.
- Locations to consider are pipe or hose connections, overhead conduits (from which pans may be suspended) hose reels, loading areas, and areas where permanent repairs on a leak are delayed. Drip pans should always be in place before and during operations which involve making and breaking connections.
- Pan material must not be reactive with fluid it is receiving.
- For drips on permanent pipelines, drip pans may be extended into graded gutters which drain to storage.

  Materials caught in drip pans may be recycled, and pans themselves may be made from used containers.

MAINTENANCE AND INSPECTION REQUIREMENTS:

- Pans should be checked for leaks and emptied as necessary; strict maintenance is the only way drip pans will be effective.
- Employees must realize the importance of maintaining drip pans, or they will be ignored and will overflow.

COST CONSIDERATIONS:

- Materials and installation are very inexpensive.
- Maintenance can become expensive if frequency of spills is high.
- Costs can be saved by recycling liquids caught in pans.

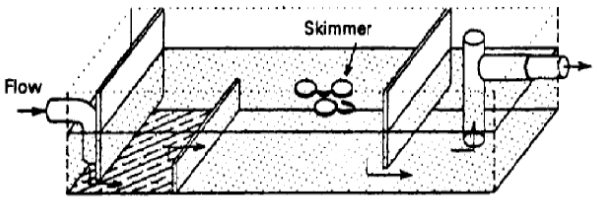
Oil Water Separators

DESCRIPTION:

There are four standard types of oil/water separators: Spill Control (SC) separators, Coalescing Plate Interceptor (CPI) separators, and conventional gravity separators, also known as the American Petroleum Institute (API) separator. They are specifically intended to remove petroleum compounds and grease, but they may also aid in removing floatable debris and settleable solids. An SC separator simply consists of a manhole or vault with a T-outlet; it is only effective at containing smaller spills, and will not remove dispersed oil droplets such as those found in turbulent runoff. An API separator removes pollutants by mechanical means. Baffles are arranged so sediments settle out in the first chamber, oil and floatables are trapped in the next chamber, and water is released from the third chamber. Sometimes a skimmer is incorporated in the second chamber to remove oil from the surface. A CPI separator is the most elaborate of these measures. Runoff passes over a bundle of closely spaced plates, usually constructed of fiberglass or polypropylene, which are positioned at an angle. Oil, grease, and some fine suspended solids are retained on the plates.

DESIGN AND SIZING CRITERIA:

API SEPARATOR



- Oil/water separators should be designed by a licensed professional engineer.
- SC separators are only used to contain small spills, and should not be employed as a regular means of treatment.
- Sizing is determined by design flow, loading, and the rise rate of oil droplets, which is influenced by viscosity, densities of oil and water, and temperatures. Formulae are available through API.

MAINTENANCE AND INSPECTION REQUIREMENTS:

- Inspect separators frequently for clogging, sediment buildup, or other problems.
- Separators should be cleaned regularly so that oil and sediments are not flushed out during extreme storms.
- Close effluent valves during cleaning.

COST CONSIDERATIONS:

- Installation costs are moderately high for API and SC units, and very high for CPI units.
- Maintenance costs should be moderate to high, depending on runoff concentrations.

The following Best Management Practices (BMP) fact sheets were taken from the:

Alabama Soil and Water Conservation Committee, March 2009, Vol. 2, *Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Area*

Sediment Barrier (SB)

Practice Description

A sediment barrier is a temporary structure used across a landscape to reduce the quantity of sediment that is moving farther downslope. Commonly used barriers include silt fence (a geotextile fabric which is trenched into the ground and attached to supporting posts) or hay bales trenched into the ground. Other barrier materials include sand bags, brush piles and various man-made materials that can be used in a similar manner as silt fence and hay bales.

This practice applies where sheet and rill erosion occurs on small disturbed areas. Barriers intercept runoff from upslope to form ponds that temporarily store runoff and allow sediment to settle out of the water and stay on the construction site. Barriers can also prevent sheet erosion by decreasing the velocity of the runoff.

Typical Components of the Practice

- Site Preparation
- Barrier Installation
- Reinforce Outlet Bypass. (Not always applicable)
- Erosion Control
- Construction Verification

Construction

Prior to start of construction, sediment barriers should be designed by a qualified professional. Plans and specifications should be referred to by field personnel throughout the construction process.

Note: Silt fence is the only barrier installation being covered in this handbook.

Site Preparation

Determine exact location of underground utilities so that locations for digging or placement of stakes can be selected where utilities will not be damaged.

Smooth the construction zone to provide a broad, nearly level area for the fence. The area should be wide enough throughout the length of the fence to provide storage of runoff and sediment behind the fence.

Silt Fence Installation

Fence should be installed on the contour, so that runoff can be intercepted as sheet flow, Ends should be flared uphill to provide temporary storage of water. Fence should be placed so that runoff from disturbed areas must pass through the fence. Fence should not be placed across concentrated flow areas such as channels or waterways. When placed near the toe of a slope, the fence should be installed far enough from the slope toe to provide a broad flat area for adequate storage capacity for sediment. Dig a trench at least 6” deep along the fence alignment as shown in Figures SB-1 and SB-2 for Types A & B fences. Type C fences require only a 4” deep trench as shown in Figure SB 3. **Please note that installation with a silt fence installation machine may permit different depths if performance is equal.**

Drive posts at least 18” into the ground on the downslope side of the trench. Space posts a maximum of 10 feet if fence is supported by woven wire, or 6 feet if high strength fabric and no support fence is used.

Fasten support wire fence to upslope side of posts, extending 6” into the trench as shown in the appropriate figure for the type fence, see Figure SB-1, SB-2 or SB-3.

Attach continuous length of fabric to upslope side of fence posts. Minimize the number of joints and when necessary to join rolls, they should be joined by rolling the ends together using the “roll joint” method illustrated in Figure SB-4. Avoid joints at low points in the fence line.

For Type A & B silt fence, place the bottom 12” of fabric in the 6” deep (minimum) trench, lapping toward the upslope side. For Type C fabric place the bottom 6” in the 4” deep (minimum) trench lapping toward the upslope side.

Backfill the trench with compacted earth or gravel as shown in Figures SB-1, 2 and 3.

Provide good access in areas of heavy sedimentation for clean out and maintenance.

Erosion Control

Stabilize disturbed areas in accordance with vegetation plan. If no vegetation plan exists, consider planting and mulching as a part of barrier installation and select planting information from appropriate planting practice, Permanent Seeding or Temporary Seeding. Select mulching information from the Mulching practice.

Construction Verification

Check finished grades and dimensions of the sediment fence. Check materials for compliance with specifications.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Variations in topography onsite indicate sediment fence will not function as intended or alignment is not on contour or fence crosses concentrated flow areas; changes in plan may be needed.
- Design specifications for filter fabric, support posts, support fence, gravel or riprap cannot be met; substitutions may be required. Unapproved substitutions could lead to failure.
- Drainage area appears to exceed ¼ acre for 100 feet of non-reinforced silt fence and ½ acre for reinforced fence.

Maintenance

Inspect sediment fences at least once a week and after each significant rain event.

Make required repairs immediately.

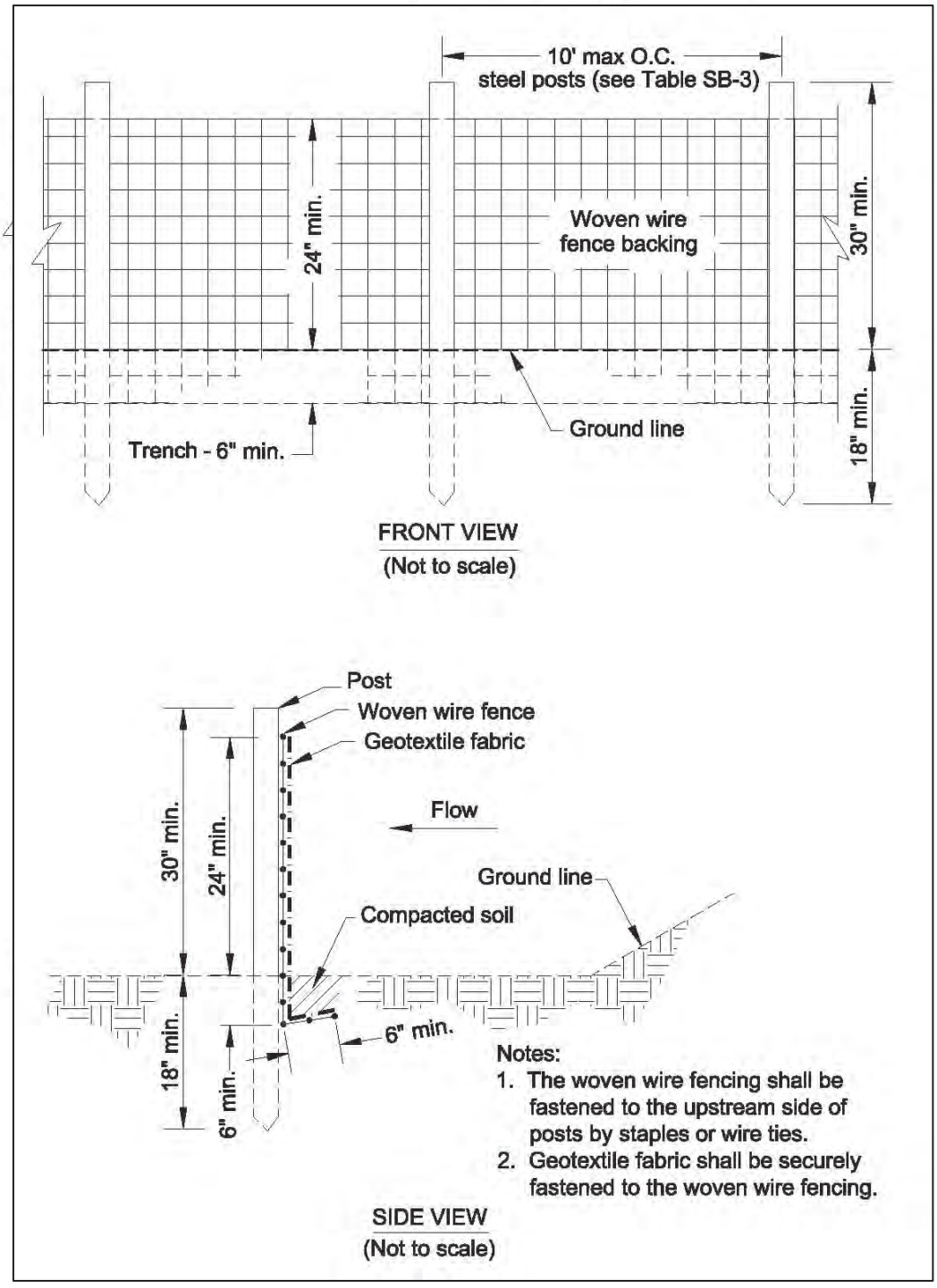


Figure SB-1 Silt Fence-Type A

(1) For fabric material requirements see Table SB-1
(2) For post material requirements see Tables SB-3 and SB-4

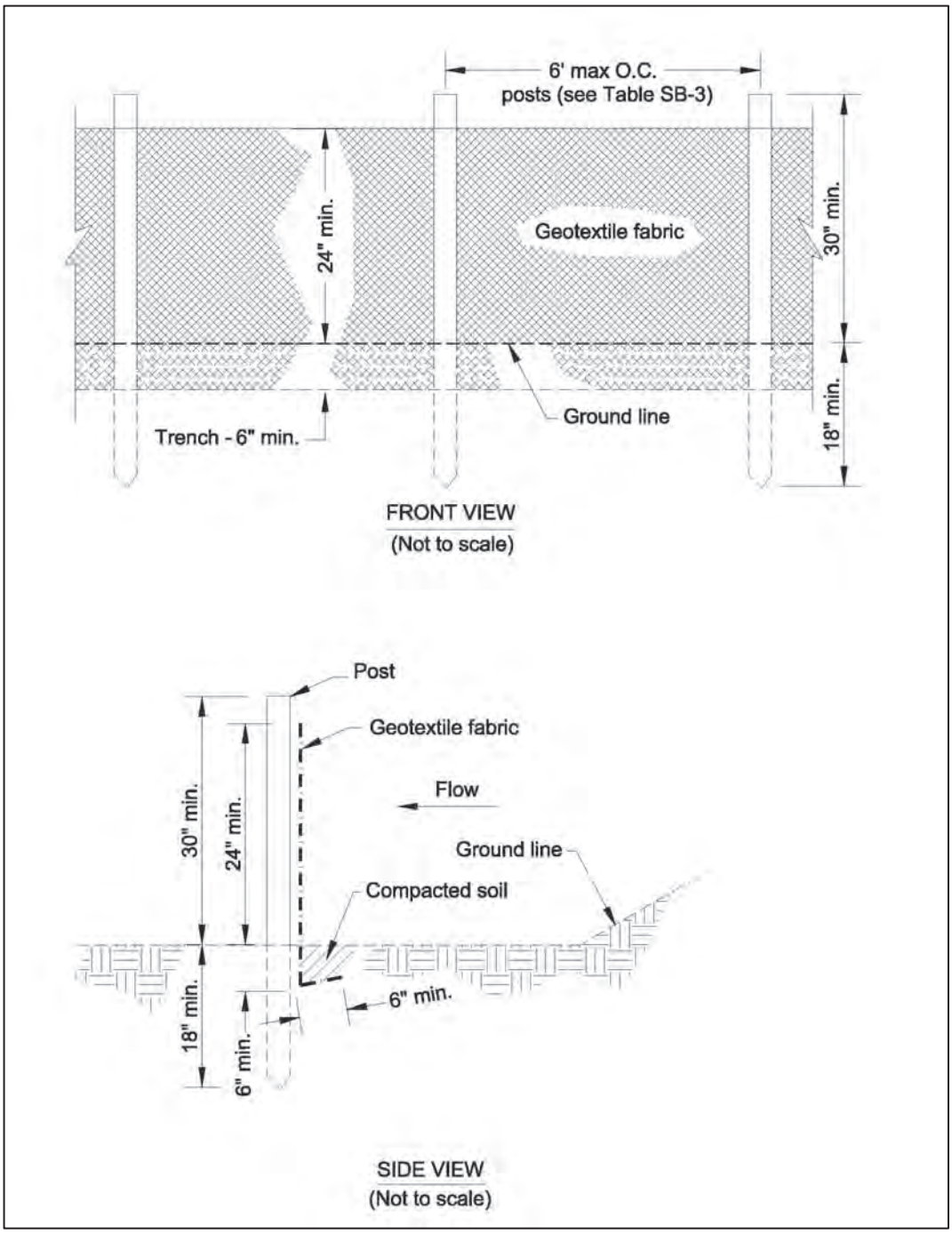


Figure SB-2 Silt Fence - Type B

(1) For fabric material requirements see Table SB-1
(2) For post material requirements see Tables SB-3 and SB-4

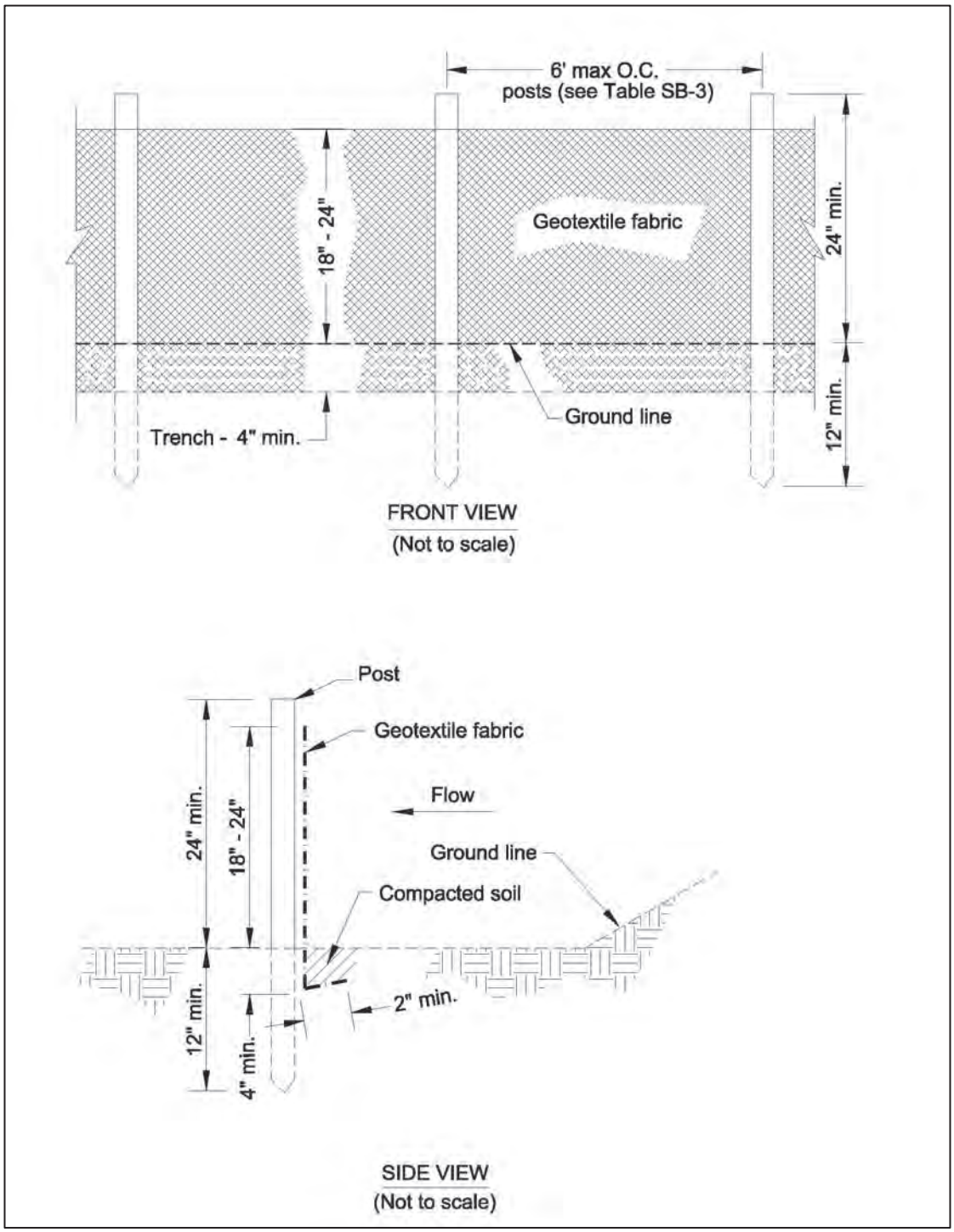


Figure SB-3 Silt Fence – Type C

(1) For fabric material requirements see Table SB-1
(2) For post material requirements see Tables SB-3 and SB-4

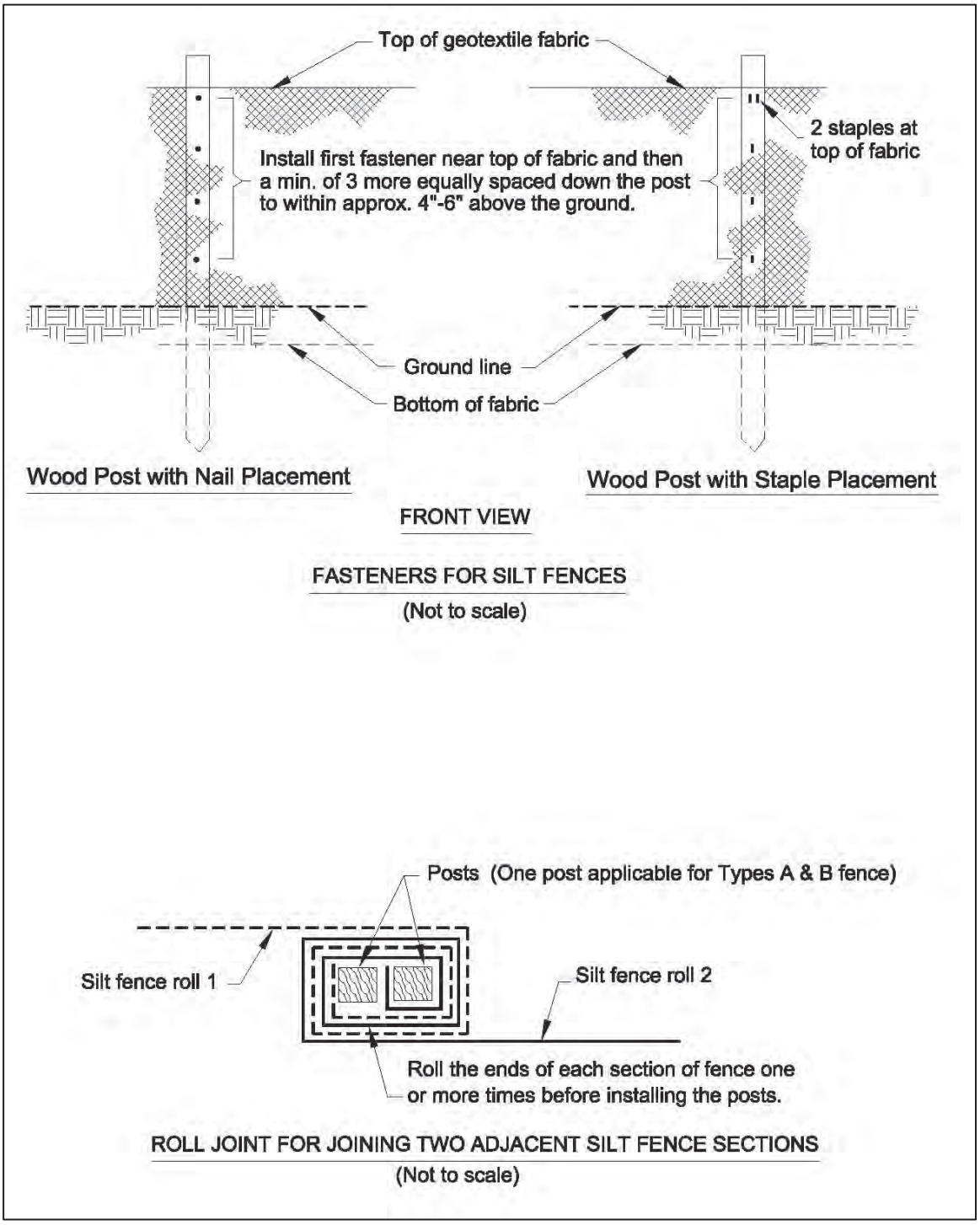


Figure SB-4 Silt Fence Installation Details

Should the fabric of silt fence collapse, tear, decompose or become ineffective, replace it promptly.

Remove sediment deposits when they reach a depth of 15” or ½ the height of the fence as installed to provide adequate storage volume for the next rain and to reduce pressure on the fence.

After the contributing drainage area has been properly stabilized, remove all barrier materials and unstable sediment deposits, bring the area to grade and stabilize it with vegetation.

Rock Filter Dam (RD)

Practice Description

A rock filter dam is a stone embankment designed to help capture sediment in natural drainageways on construction sites. This practice can be used as a fore bay to a sediment basin to help capture coarser particles of sediment. It is usually located so that it intercepts runoff primarily from disturbed areas, is accessible for periodic sediment removal and does not interfere with construction activities

Typical Components of the Practice

- Site Preparation
- Rock Placement
- Erosion and Sediment Control
- Construction Verification

Construction

Prior to start of construction, rock dams should be designed by a qualified design professional. The rock filter dam plan should include details on dam height, dam top width, dam side slopes and rock size(s). Plans and specifications should be referred to by field personnel throughout the construction process.

Site Preparation

Determine exact location of underground utilities and avoid construction over and under utilities.

Clear and grub the area under the dam, removing and properly disposing of all root material, brush and other debris.

Divert runoff from undisturbed areas away from the rock dam and basin area. Smooth the dam foundation.

If specified, cover the foundation with geotextile fabric, making sure the upstream strips overlap the downstream strips at least 1 foot and the upslope end is embedded into the foundation at least 1 foot.

Rock Placement

Construct the dam by placing well graded, hard, angular, durable rock of the specified size over the foundation to planned dimensions and securely embed into both channel banks.

Once the dam is in place, clear the sediment basin area and dispose of the cleared material.

Set a marker stake to indicate the clean out elevation (i.e., point at which the basin is 50% full of sediment).

Erosion and Sediment Control

Stabilize all disturbed areas with either Temporary or Permanent Seeding.

Construction Verification

Check materials and finished elevations of the rock filter dam for compliance with specifications.

Common Problems

Consult with qualified design professional if the following occurs:

- Variations in topography on-site indicate rock filter dam will not function as intended; changes in plan may be needed.
- Materials specified in the plan are not available.

Maintenance

Inspect the rock dam and basin after each storm event.

Check the dam for rock displacement and abutments for erosion and repair immediately when repair is needed. If rock size appears too small or embankment slope is too steep, replace stone with larger size or reduce slope.

Check the drainage way at toe of dam for erosion. If erosion is occurring, a repair involving geotextile fabric (including another toe-in) and additional rock are probably needed to establish a stable outlet.

Remove sediment from the pond reservoir area when it accumulates to ½ the design volume. If the basin does not drain between storms because the filter stone (small gravel) on the upstream face has become clogged, the clogged filter stone should be replaced with clean stone.

Once the construction site is permanently stabilized, remove the structure and any unstable sediment. Smooth the basin site to blend with the surrounding area and stabilize. Sediment should be placed in designated disposal areas and stabilized.

Outlet Protection (OP)

Practice Description

This practice is designed to prevent erosion at the outlet of a channel or conduit by reducing the velocity of flow and dissipating the energy. Outlet protection measures usually consist of a riprap-lined apron, a reinforced concrete flume with concrete baffles a reinforced concrete box with chambers or baffles and possibly pre-manufactured products. This practice applies wherever high velocity discharge must be released on erodible material.

Typical Components of the Practice

- Site Preparation
- Installation of Riprap Structures
- Installation of Concrete Structures
- Erosion Control
- Construction Verification

Construction

Prior to start of construction, the practice should be designed by a qualified design professional. Plans and specifications should be referred to by field personnel throughout the construction process.
The structure should conform to the dimensions, grades and alignments shown on the plans and specifications.

Site Preparation

Completely remove stumps, roots and other debris from the construction area. Fill depressions caused by clearing and grubbing operations with clean, non-organic soil. Grade the site to the lines and grades shown on the plans. Compact any fill required in the subgrade to the density of the surrounding undisturbed material.

If possible, the alignment should be straight throughout its length. If a curve is required, it should be located in the upstream section of the outlet.

Riprap Structures

Ensure that the subgrade for the filter and riprap follows the required lines and grades shown in the plan. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.

Geotextile fabric must meet design requirements and be properly protected from puncturing or tearing during installation. Repair any damage by removing the riprap and placing another piece of filter cloth over the damaged area. All connecting joints should overlap a minimum of 1.5 feet with the upstream edge over the downstream edge. If the damage is extensive, replace the entire geotextile fabric.

Riprap may be placed by equipment. Care should be taken to avoid damaging the filter.

Construct the apron on zero grade with no overfall at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.

Concrete Structures

Reinforcing steel welded wire fabric should be placed in strict accordance with the design plans and maintained in the proper position during the pouring of concrete. Concrete should be placed in horizontal layers not exceeding 24” in thickness or as specified in the design, and consolidated by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping.

Concrete should be placed in sturdy wood or metal forms, adequately supported to prevent deformation. Forms should be oiled prior to placement to prevent bonding between concrete and forms.

If possible, concrete should not be placed during inclement weather or periods of temperature extremes. If temperature extremes cannot be avoided, American Concrete Institute (ACI) guidelines for placement of concrete during such extremes should be consulted.

Concrete should be allowed to cure as required by the plans and specifications.

Typically, the surface should be kept wet during curing by covering it with wet burlap sacks or other means. Design strengths should be confirmed by laboratory tests on representative cylinders made during concrete placement. Form work should not be removed prior to the specified time.

Erosion Control

Immediately after construction, stabilize all disturbed areas with vegetation.

Construction Verification

Check finished structures for conformance with design specifications.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Variations in topography on site indicate measure will not function as intended.
- Design specifications for riprap, filter fabric, concrete, reinforcing steel or backfill cannot be met; substitutions may be required. Unapproved substitutions could lead to failure.
- Problems with the structure develop during or after installation.

Maintenance

Inspect riprap outlet structures after heavy rains to see if any erosion around or below the riprap has taken place or if stones have been dislodged. Check concrete structures for cracks and movement. Immediately make all needed repairs to prevent further damage.

Fabric Drop Inlet Protection (FIP)

Practice Description

Fabric drop inlet protection is a structurally supported geotextile barrier placed around or over a drop inlet to prevent sediment from entering storm drains during construction. This practice applies where early use of the storm drain system is necessary prior to stabilization of the disturbed drainage area. This practice is suitable for inlets with a drainage area of less than 1 acre and a gentle approach slope generally of 1% or less.

Typical Components of the Practice

- Site Preparation
- Structural Frame Installation
- Fabric Installation
- Grading
- Stabilization
- Construction Verification

(Note: Premanufactured fabric drop inlet protective structures should be installed and maintained according to the manufacturer's requirements.)

Installation

Prior to start of construction, fabric drop inlet protection structures should be designed by a qualified professional. Plans and specifications should be available to field personnel.

Site Preparation

The soil around the drop inlet should be well compacted. The area around the drop inlet should be shaped, if necessary, to store the runoff on an almost level area. If runoff could bypass the protected inlet, a temporary dike should be planned and force the runoff to be trapped by the protective device.

Structural Frame Installation

The frame (pre-manufactured or constructed) should provide the internal support necessary to prevent the structure from buckling, the fabric from sagging, or the fabric from being undermined. Frames should be positioned so that water which overtops the device goes directly into the inlet and doesn't cause erosion between the frame and inlet. Pre-manufactured frames should be installed according to manufacturer's recommendations.

Fabric Installation

Generally, fabric is installed by one of two methods:

Fabric can be buried vertically in a trench. The trench is excavated at least 12 inches into compacted soil adjacent to the inlet. Support posts are installed securely against the exterior of the drop inlet. Fabric along with wire fence is secured in the bottom of the trench and against the exterior surface of the inlet with stakes no more than 2 feet apart and driven at least 6 inches into the soil. The trench is backfilled with hand-compacted soil to the density equivalent to the surrounding soil. Fence and fabric are secured to the posts and the structure internally supported to meet the structural requirements of the device.

Fabric for pre-manufactured drop inlet protective devices is generally secured with ballast pockets on well compacted soil around the inlet. Install these according to manufacturer's recommendations.

Grading

If needed to prevent bypass flow or ensure adequate storage, construct a temporary dike on the down slope side of the structure. Material from within the sediment pool may be used for dike construction. To be effective, the site must create the specified volume of ponding around the fabric structure.

Stabilization

Stabilize all bare areas that drain to the inlet with temporary seeding and mulching unless construction will disturb it within 13 days.

Construction Verification

Check finished grades and dimensions of fabric drop inlet protection structures.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Variations in site conditions indicate that the practice will not function as intended; change in plan may be needed.
- Sediment not removed from pool resulting in inadequate storage volume for the next storm.
- Top of fabric set too high; resulting in flow bypassing the inlet.
- Fabric is not adjacent to the inlet exterior surface; resulting in erosion and undercutting of inlet.

Maintenance

Inspect fabric barrier after each rainfall event and make needed repairs immediately.

Remove sediment from the pool area when sediment has reached ½ the fabric height. Take care not to damage or undercut the fabric during the sediment removal.

When the contributing drainage area has been adequately stabilized, remove all materials and unstable sediment and dispose of properly. Fill the disturbed area to the grade of the drop inlet. Stabilize disturbed areas in accordance with the plans.

Block and Gravel Inlet Protection (BIP)

Photo courtesy of CPESC, Inc.

Practice Description

Block and gravel inlet protection is a sediment control barrier formed around a storm drain inlet by the use of standard concrete block and gravel. The purpose is to help minimize sediment entering storm drains during construction. This practice applies where use of the storm drain system is necessary during construction and inlets have a drainage area of 1 acre or less and an approach slope of 1% or less.

Typical Components of the Practice

- Site Preparation
- Installation of Blocks, Wire Mesh and Gravel
- Erosion Control
- Construction Verification

Construction

Prior to start of construction, block and gravel inlet protection should be designed by a qualified design professional. Plans and specifications should be referred to by field personnel throughout the construction process.

Site Preparation

Determine exact location of underground utilities.

Clear area of all debris that might hinder excavation and disposal of spoil.

Grade the approach to the inlet uniformly. The top elevation of the structure must be lower than the ground elevation downslope from the inlet. It is important that all storm flows pass over the structure and into the storm drain and not past the structure. Temporary dikes below the structure may be necessary to prevent bypass flow. Material may be excavated from inside the sediment pool for this purpose.

Installation of Blocks, Wire Mesh and Gravel

Lay one block on its side in the bottom row on each side of the structure to allow pool drainage. The foundation should be excavated below the crest of the storm drain to the depth shown on the drawings. Place the bottom row of blocks against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, give lateral support to subsequent rows by placing 2" x 4" wood studs through block openings.

Place hardware cloth or comparable wire mesh with ½" openings over all block openings to hold gravel in place.

Place stone of the specified gradation around blocks to the lines and dimensions shown on the drawings and smooth to an even grade.

Erosion Control

Stabilize disturbed areas in accordance with the vegetation plan.

Construction Verification

Check finished grades and dimensions of block and gravel barrier. Check materials for compliance with specifications.

Common Problems

Consult with qualified design professional if the following occurs:

- Variations in topography on site indicate block and gravel drop inlet protection will not function as intended; changes in plan may be needed.

Maintenance

Inspect the barrier after each rain and make repairs as needed.

Remove sediment promptly following storms to provide adequate storage volume for subsequent rains and prevent sediment entering the storm drain in subsequent rains.

If the gravel becomes clogged with sediment so that barrier does not drain properly, remove gravel and replace with clean gravel of the specified gradation.

When the contributing drainage area has been adequately stabilized, remove all materials and any sediment, bring the disturbed area to proper grade and stabilize it with vegetation or other materials shown in the design plan.

Sodding (SOD)

Practice Description

Sodding is the use of a transplanted vegetative cover to provide immediate erosion control in disturbed areas. Sodding is well suited for stabilizing erodible areas such as grass-lined channels, slopes around storm drain inlets and outlets, diversions, swales, and slopes and filter strips that cannot be established by seed or that need immediate cover.

Typical Components of the Practice

- Plant Selection
- Surface Preparation
- Soil Amendments (lime and fertilizer)
- Installing the Sod
- Irrigation
- Installation Verification

Installation

Prior to start of installation, Typical Components of the Practice should be specified by a qualified design professional. Plans and specifications should be referred to by field personnel throughout the installation process.

Plant Selection

Use plants specified in plan. If not specified, select a variety using Figure SOD-1, Tables SOD-1 and SOD-2.

Figure SOD-1 Geographical Areas for Species Adaptation

Table SOD-1 Grasses Adapted for Sodding in Alabama

Warm Season Species	Variety	Area Adapted
Bermudagrass	Tifway, Tifgreen, Tiflawn, Common	North, Central, South
Bahiagrass	Pensacola	Central, South
Centipede	No Improved Varieties	Central, South
St. Augustine	Bitterblue, Raleigh, Common	South
Zoysia	Emerald, Meyer	Central, South
Cool Season Species		
Tall Fescue	Kentucky 31	North

Table SOD-2 Adaptation and Maintenance of Grasses Used for Sodding

Species	Tolerance Ratings					Maintenance	
	Shade	Heat	Cold	Drought	Wear	Mowing Height	Mowing Frequency
Bermudagrass	No	Good	Poor	Excel.	Excel.	1”	High
Bahiagrass	Fair	Good	Poor	Excel.	Good	2-3”	High
Centipede	Fair	Good	Poor	Good	Poor	1 ½”	Low
Tall Fescue	Good	Fair	Good	Good	Good	3”	High
St. Augustine	Good	Good	Poor	Poor	Poor	2-3”	Medium
Zoysia	Fair	Good	Fair	Excel.	Good	1”	High

Surface Preparation

Clear the area of clods, rocks, etc. and smooth the area. Grade and loosen the soil to a smooth firm surface to enhance rooting. Break up large clods and loosen compacted, hard or crusted soil surfaces with a disk, ripper, chisel, harrow or other tillage equipment. Avoid preparing the seedbed under excessively wet conditions. Operate the equipment on the contour.

Where topsoiling is specified, additional steps will be done based on the design plan or, if not available, according to the Topsoiling practice.

Application of Soil Amendments

Apply fertilizer and lime according to the plan or by soil test recommendations. In the absence of a plan or soil test recommendations apply agricultural limestone at the rate of 2 tons per acre (100 lbs. per 1000 sq. ft.) and 10-10-10 fertilizer at the rate of 1000 lbs. per acre (25 lbs per 1000 $ft.^2$) Apply ground agricultural limestone unless a soil test shows a pH of 6.0 or greater. Incorporate amendments to depth of 4” to 6” with a disk or rotary tiller.

Rake or harrow to achieve a smooth, final grade on which to lay the sod. Surface should be loose, and free of plants, trash and other debris.

During high temperatures, moisten the soil immediately prior to laying sod. This cools the soil and reduces root burning and dieback.

Installing the Sod

Lay the first row of sod in a straight line with subsequent rows placed parallel to and butting tightly against each other. Stagger joints to create a brick-like pattern and promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight to prevent spaces which would cause drying of the roots (See Figure SOD-2).

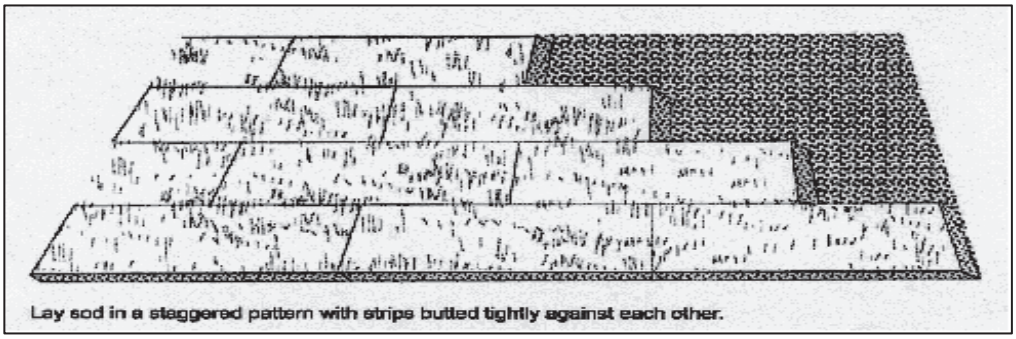


Figure SOD-2 Typical Installation of Grass Sod

On slopes 3:1 or steeper, or wherever concentrated flow may be a problem, lay sod with staggered joints and secure by stapling or pegging. Install sod with the length perpendicular to the water flow (on the contour). See Figure SOD-3. Staple firmly at the corners and middle of each strip. Jute or synthetic netting may be pegged over the sod for further protection against washout during establishment.

Irrigation

Immediately after laying the sod, roll or tamp it to provide firm contact between roots and soil, then irrigate sod deeply so that the underside of the sod pad and the soil 6” below the sod is thoroughly wet.

Until a good root system develops, water sod during dry periods as often as necessary to maintain moist soil to a depth of at least 4”.

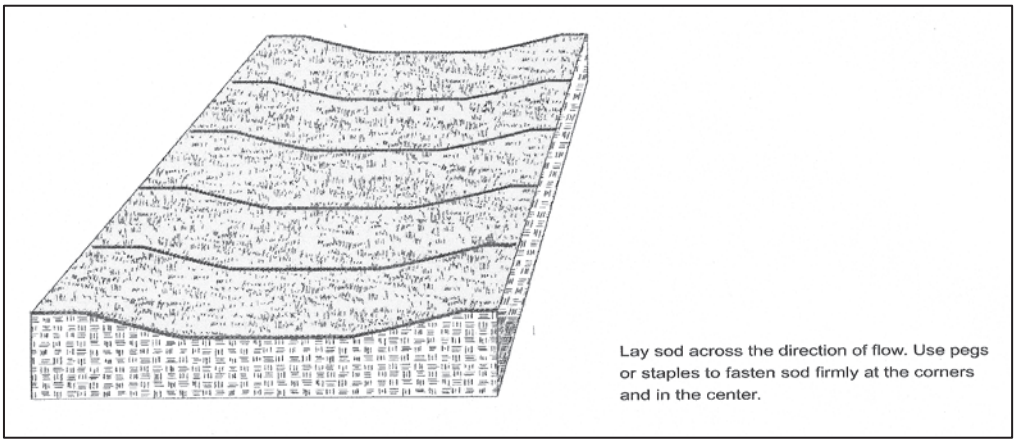


Figure SOD-3 Installation of Sod in Waterways

Construction Verification

Check materials and installation for compliance with specifications.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Variations in topography on site indicate the sodding materials will not function as intended; changes in plan may be needed.
- Design specifications for sod variety cannot be met or irrigation is not possible; substitution or seeding may be required. Unapproved substitutions could result in erosion or sodding failure.
- Sod laid on poorly prepared soil or unsuitable surface and grass dies because it is unable to develop a root system with the soil: remove dead sod, prepare surface properly and resod.
- Sod not adequately irrigated after installation; may cause root dieback or grass does not root rapidly and is subject to drying out: irrigate sod and underlying soil to a depth of 4" and keep moist until roots are established.
- Sod not anchored properly may be loosened by runoff: use guidance under Site Preparation to repair the damaged areas, lay healthy sod, anchor properly and irrigate as planned.
- Slow growth due to lack of nitrogen: apply additional fertilizer.

Maintenance

Keep sod moist until it is fully rooted.

Mow to a height of 2” to 3” after sod is well-rooted, in 2 to 3 weeks. Do not remove more than ⅓ of the leaf blade in any mowing.

Permanent, fine turf areas require yearly fertilization. Fertilize warm-season grass in late spring to early summer; cool-season grass in early fall and late winter.

Preservation of Vegetation (PV)

Practice Description

Preservation of vegetation is the avoidance of an area during land disturbing and construction activity to prevent mechanical and other injury to desirable plants in the planned landscape. The practice provides erosion and sediment control and is applicable where vegetative cover is desired and the existing plant community is compatible with the planned landscape.

Typical Components of the Practice

- Mark Plant Area for Retention
- Plant Protection
- Treating Damaged Plants
- Verification of Practice

Installation

Preservation requirements should be designed by a qualified design professional and plans should be made available to field personnel prior to start of construction

Mark Plant Area for Retention

Clearly indicate the area to be avoided by marking with tape (flagging), barricade netting or other appropriate means.

Plant Protection

Protect plants on the perimeter of the retention area from physical damage from equipment and vehicles. Use boards, cords, burlap and earth berms. Trees, shrubs and vines should also be protected from adjacent cutting and filling operations and trenching or tunneling.

Treating Damaged Plants

Treat damaged trees and shrubs as soon after damage as practical. Treatment may include shaping a wound for proper healing, pruning of jagged roots, pruning of damaged limbs and fertilization to enhance growth.

Verification of Practice

Check to determine that specifications are met as the areas are identified for retention, as the plants are protected during construction and that damaged plants are treated or replaced.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Soil compaction appears to be retarding plant growth or affecting plant health.
- Damage to plants appears to be severe and life threatening.
- Plants appear of poor quality and are undesirable for retention.

Problems during construction that require remedial actions:

- Erosion – eroded areas should be vegetated to grass or a suitable ground cover.
- Severely damaged trees, shrubs or vines should be replaced.

Maintenance

Enhance and maintain plant growth and health according to the maintenance plan.

This may involve applying fertilizer, spreading mulch and pruning trees and shrubs.

Replace dead plants as needed to maintain desired landscape cover. Additional information about plantings is found in practices Permanent Seeding, Shrub, Vine and Groundcover Planting, and Tree Planting on Disturbed Areas.

Groundskeeping (GK)

Practice Description

Groundskeeping or "good housekeeping" describes the various activities and measures, in addition to the specific practices used for erosion and sediment control that are essential during construction for the protection of environmental quality. Groundskeeping is applicable at all construction sites.

Typical Components of the Practice

Prior to the start of construction, Groundskeeping activities and measures should be identified by a qualified design professional and included in the construction and pollution prevention plan. The essential components of Groundskeeping should be provided to the prime contractor for a project. Groundskeeping activities and measures essential at construction sites vary based on the complexity of the site and the project. Groundskeeping typically includes the following activities and measures:

- Inspections During Construction/Installation of Erosion and Sediment Control and Stormwater Measures (BMPS)
- Spill Prevention and Material Management
- Spill Controls

- Other Potential Activities and Measures (examples: removal of contaminated soils, management of hazardous products, protection of air quality, etc.)
-

Details about Components

Inspections of BMPs

Inspections should be made regularly and timely to ensure that erosion and sediment control and stormwater management practices are performing as planned and whether or not maintenance is needed. In addition, inspection requirements and reports should meet local and state requirements.

Spill Prevention and Material Management

Alabama Department Environmental Management (ADEM) regulations require that an operator/owner implement a Spill Prevention Control and Counter Measures (SPCC) Plan for all temporary and permanent onsite fuel or chemical storage tanks or facilities to address the safe storage, handling and clean up of petroleum products and other chemicals.

All vehicles kept on the site need to be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage.

If petroleum products are stored on site, a secondary containment facility will be required if the cumulative storage capacity of all tanks, greater than 55 gallons, at the site exceeds 1,320 gallons. The secondary containment facility must be designed by a qualified design professional.

Petroleum products should be stored in labeled tightly sealed containers.

Any asphalt substances used on-site should be applied according to the manufacturer's recommendations.

No fueling, servicing, maintenance, or repair of equipment or machinery should be done within 50 feet of a stream, or within 100 feet of a stream classified for public water supply (PWS) or Outstanding Alabama Water (OAW), or designated as an Outstanding National Resource Water (ONRW) or a sinkhole.

Only designated entrances should be used for construction access to the site. Mud tracked from the site onto streets and roads should be cleaned on a daily basis if needed.

Concrete trucks should be allowed to wash only in locations where discharge is directed to a sediment basin or an approved sediment barrier. It is not permissible to discharge concrete wash directly to streams or storm drains.

No fuels, oils, lubricants, solvents, or other hazardous materials can be disposed of on the site. All hazardous material must be properly disposed of in accordance with state law.

Solid waste should be disposed of in accordance with state law. Dumpsters or other collection facilities must be provided as needed.

Water for pressure testing sanitary sewers, flushing water lines, etc., may be discharged only in approved areas and to prevent discharging to surface waters. Discharge of hydrostatic test water may require additional permitting, particularly if chlorinated public water is used.

Spill Controls

The operator/owner is expected to maintain on-site or have readily available sufficient oil & grease absorbing material and flotation booms to contain and clean-up fuel or chemical spills and leaks.

Equipment and materials include, but are not limited to brooms, dust pans, mops, rags, gloves, goggles, absorbent clay, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

Spills of toxic or hazardous material must be reported immediately. The operator/owner is required to immediately notify ADEM after becoming aware of a significant spill/leak or visible oil sheen in the vicinity of the construction activity. In the event of a spill with the potential to impact groundwater or other waters of the State, the operator/owner is expected to immediately call the National Response Center (NRC) at 1-800-424-8802 and the Alabama Emergency Management Agency (AEMA) at 1-800-843-0699. The caller should be prepared to report the name, address and telephone number of person reporting spill, the exact location of the spill, the company name and location, the material spilled, the estimated quantity, the source of spill, the cause of the spill, the nearest downstream water with the potential to receive the spill, and the actions taken for containment and cleanup.

All spills need to be cleaned up immediately after discovery and properly containerized for proper disposal. Refer to Material Safety Data Sheets for safe handling procedures. Burial is not acceptable.

The spill area must be kept well ventilated and personnel need to wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

The spill prevention plan needs to be adjusted to include measures to prevent any spill from being repeated, and the plan needs to show how to clean up the spill if another one does occur.

Removal of Contaminated Soils and Underground Storage Tanks

Site assessment and removal of contaminated soils and underground storage tanks should be done following a site assessment based on procedures provided by the Alabama Department of Environmental Management.

Management of Hazardous Products

Products must be kept in original containers unless they are not resealable. If a product is transferred to a new container, it must be properly marked and labeled.

Original labels and Material Safety Data Sheets should be retained until the related product is no longer on the site.

If surplus product must be disposed of, disposal must be done in accordance with state (Alabama Department of Environmental Management regulations).

Protection of Air Quality

Smoke

Burning on the site may require a permit from the Alabama Forestry Commission. County and city ordinances may also apply. Starting disposal fires with diesel fuel, petroleum products, or old tires is not a recommended practice. Burn pits with fans to generate hot disposal fires decreases the fire time and minimizes smoke. Burning may be prohibited by State “burn bans” to reduce potential for ground-level ozone.

Dust

Dust should be controlled if it will create a problem either on or off of the site. If measures are not included in the site design plan see the practice Dust Control for potential measures to use to eliminate or minimize dust.

Other Good Groundskeeping Practices

The following measures may be needed:

- All materials stored on-site should be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products should be kept tightly sealed in their original containers with the original manufacturer's label.
- Whenever possible, all of a product should be used up before disposing of the container.
- Manufacturer's recommendations for proper use and disposal must be followed. See Material Safety Data Sheets for product of concern.
- The site superintendent or a designated employee should inspect daily to ensure proper usage, storage and disposal of materials.

Mulching (MU)

Practice Description

Mulching is the application of plant residues such as straw or other suitable materials to the soil surface. Mulch protects the soil surface from the erosive force of raindrop impact and reduces the velocity of overland flow. It helps seedlings germinate and grow by conserving moisture, protecting against temperature extremes and controlling weeds. Mulch also maintains the infiltration capacity of the soil.

Mulch can be applied to seeded areas to help establish plant cover. It can also be used in unseeded areas to protect against erosion over the winter or until final grading and shaping can be accomplished except in areas of concentrated flow.

Typical Components of the Practice

- Site Preparation
- Application of Material
- Verification of Installation

Erosion Control Blanket (ECB)

Photo courtesy of Environmental Plans and Review Section, Development Department, DeKalb County, GA

Practice Description

To aid in controlling erosion on critical areas by providing a protective cover made of straw, jute, wood or other plant fibers; plastic, nylon, paper or cotton. This practice is best utilized on slopes and channels where the erosion hazard is high, and plant growth is likely to be too slow to provide adequate protective cover. Erosion control blankets are typically used as an alternative to mulching but can also be used to provide structural erosion protection. Some important factors in the choice of a blanket are: soil conditions, steepness of slope, length of slope, type and duration of protection required to establish desired vegetation, and probable sheer stress.

Typical Components of the Practice

- Site Preparation
- Erosion Control Planting
- Blanket Installation
- Construction Verification

Construction

Prior to the start of construction, the application of erosion control blankets should be designed by a qualified design professional and plans and specifications should be available to field personnel.

Numerous products designed to control erosion are available. Product installation procedures for manufactured erosion control blanket products should always be available from the manufacturer. Table ECB-1 lists some of the more common products available.

Table ECB-1 Types of Erosion Control Blankets

Type of Erosion Control	Main Use	Comments
Netting	Synthetic or natural fiber mesh installed over disturbed area to hold organic mulch and/or seed in place.	Provides minimal structural erosion resistance. Mulch applied using standard procedures.
Biodegradable Erosion Control Blanket	Natural fiber blanket held together by netting to provide temporary erosion protection on slopes up to 1:1; and channels with permissible shear stress up to 4 lbs./ft.	Provides 1- to 5-year protection from erosion. Metal staples used as anchors.
Permanent Erosion Control Blanket	Synthetic blanket material which provides permanent erosion control on slopes up to 1:1; channels with increased water flow velocities and increased shear stress.	Provides minimal protection from wave action around ponds and lakes. Permanent erosion control blankets extend the limits of vegetation. Metal staples used as anchors.
Turf Reinforcement Mat	3-dimensional permanent synthetic mat that provides a matrix to greatly reinforce the root system of the desired vegetation for permanent erosion protection in high flow channels and on critical slopes.	Provides a substantial increase in erosion resistance. May provide erosion protection equivalent to stone or concrete liners.

The field inspector should verify that installation is in accordance with the plans and specifications.

Site Preparation

Grade the site in accordance with the approved design to a smooth and uniform surface, free of debris.

Add and incorporate topsoil where needed.

Make sure seedbed is firm yet friable.

Erosion Control Planting

Spread and incorporate lime and fertilizer as described in the design plan.

Spread seed and incorporate as described in the planting specifications.

Blanket Installation

Erosion control blanket products should be installed in accordance with the manufacturer's recommendations and specifications, including check slots and stapling materials.

Anchor product so that a continuous, firm contact (no tenting) with the soil surface/seed bed is maintained. This is best accomplished on slopes by working from the bottom to the top.

Note: *Failure to anchor the product as described above could result in soil erosion which would require regrading and reseeding.*

Construction Verification

Check finished grade, dimensions and staple spacing of erosion control blankets. Check materials for compliance with specifications.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Movement of the blanket or erosion under the blanket is observed.
- Poor contact between the soil and the erosion control blanket results in surface water flowing under rather than over the blanket, causing erosion; retrench or reanchor to direct water over blanket.
- Blanket inadequately or improperly stapled results in tenting, blanket movement or displacement; reinstall and ensure blanket is properly anchored.
- Unstable slope results in blanket or slope failure; determine cause of slope failure, stabilize slope and reinstall blanket.
- Variations in topography on site indicate erosion control mat will not function as intended; changes in plan may be needed, or a blanket with a shorter or longer life may be needed.
- Design specifications for seed variety, seeding dates or erosion control materials cannot be met; substitution may be required. Unapproved

substitutions could result in failure to establish vegetation or breach of contract.

Maintenance

Inspect after storm events until vegetation is established for erosion or undermining beneath the blankets. If any area shows erosion, pull back that portion of the blanket, add tamped soil and reseed; then resecure the blankets.

If blankets should become dislocated or damaged, repair or replace and resecure immediately.

Chemical Stabilization (CHS)

Photo courtesy of Sunshine Supplies, Inc.

Practice Description

Chemical erosion control on construction sites in the Southeast usually involves a water-soluble anionic polyacrlymide product referred to as PAM. It is used to minimize soil erosion caused by water and wind. PAM is typically applied with temporary seeding and or mulching on areas where the timely establishment of temporary erosion control is so critical that seedings and mulching need additional reinforcement. It may be used alone on sites where no disturbances will occur until site work is continued and channel erosion is not a significant potential problem.

Only PAM is currently included in this practice. Cationic forms of PAM are not allowed for use under this guideline due to their high levels of toxicity to aquatic organisms.

Typical Components of the Practice

- Site Preparation
- Equipment Preparation
- PAM Application
- Installation Verification

Application

Prior to the start of construction, the application of PAM should be designed by a qualified design professional and plans and specifications should be available to field personnel.

The application should conform to the design and specifications provided in the plans.

Site Preparation

Prepare site following design and specifications.

Equipment Preparation

If using a liquid application system, pump a surfactant through the injection system before and after injecting concentrated liquid PAM into sprinkler irrigation systems to prevent valves and tubing from clogging.

PAM used in hydroseeding applications should be the last additive to the mix.

After use, rinse all PAM mixing and application equipment thoroughly with water to avoid formation of PAM residues. Rinse residue should be applied to soil areas to create binding to the soil structure and increase erosion reduction.

PAM Application

Site testing for a PAM product should be conducted before PAM application to verify PAM product performance and test reports (recommendations) should be supplied to the design professional and contractor before product application.

Toxicity reports, following EPA/600/4-90/027F 24 Hr. Acute Static Screen Toxicity Test (daphnia sp.), should be provided by the supplier to the contractor before application of a PAM product (this is to assure that PAM applications from the recommended product will be non-toxic).

PAM should be mixed and/or applied in accordance with all Occupational Safety and Health Administration (OSHA) Material Safety Data Sheet requirements and the manufacturer's recommendations for the specified use conforming to all federal, state and local laws, rules and regulations.

Emulsion batches should be mixed following recommendations of a testing laboratory that determines the proper product and rate to meet site requirements.

Never add water to PAM, but instead add PAM slowly to water.

Dry form (powder) may be applied by hand spreader or a mechanical spreader.

Mixing with dry silica sand will aid in spreading. Pre-mixing of dry form PAM into fertilizer, seed or other soil amendments is allowed when specified in the

design plan. Application method should ensure uniform coverage to the target area.

Installation Verification

Check all components of the practice during installation to ensure that specifications are being met.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Problems with application equipment clogging.
- Application specifications for PAM cannot be met; alternatives may be required. Unapproved application techniques could lead to failure.
- Visible erosion occurs after application.

Maintenance

An operation and maintenance plan must be prepared for use by the operator responsible for PAM application. Plan items should include the following items:

- Reapply PAM to disturbed or tilled areas that require continued erosion control.
- Maintain equipment to provide uniform application rates.
- Rinse all PAM mixing and application equipment thoroughly with water to avoid formation of PAM residues and discharge rinse water to soil areas where PAM stabilization may be helpful.
- Downgradient deposition from the use of PAM may require periodic sediment removal to maintain normal functions.

Grass Swale (GS)

Practice Description

A grass swale is a natural or constructed channel that is shaped or graded to required dimensions and established in suitable vegetation for the stable conveyance of runoff without causing damage to the channel by erosion. This practice applies to sites where concentrated runoff will cause erosion damage, a vegetative lining provides sufficient stability for the channel as designed, and space is available for a relatively large cross section. Typical situations where concentrated flow areas are addressed with a grass swale include roadside ditches, channels at property boundaries, outlets for diversions and other concentrated flow areas subject to channel erosion. Grass swales are generally considered permanent structures but may be used as a temporary measure.

Typical Components of the Practice

- Scheduling
- Site Preparation
- Constructing
- Construction Verification
- Vegetating

Installation

Prior to start of construction, grass swale channels should be designed by a qualified design professional. Plans and specifications should be referred to by field personnel throughout the construction process to ensure that the channel has planned alignment, grade and cross section.

Scheduling

Schedule construction during a period of relatively low rainfall and runoff events if practical. Consider, also, the establishment period (planting dates) for the planned species that will be used for long-term vegetative cover.

Site Preparation

Determine exact location of underground utilities.

Install any structures required to stabilize the swale outlet or to provide drainage along the swale prior to beginning installation of the swale. Refer to design for structures to be installed.

Remove brush, trees and other debris from the construction area and dispose of properly.

Constructing

Excavate and shape the channel to dimensions shown in the design specifications, removing and properly disposing of excess soil so surface water can enter the channel freely. The typical features of a grass swale are shown in Figure GS-1 and listed below, but may be different in the design for a specific site.

Cross Section: trapezoidal or parabolic.

Side Slopes: 3:1 or flatter for trapezoidal channels.

Outlet: Channel should empty into a stable outlet, sediment traps, or detention/retention basins.

Subsurface Drain: Use in areas with seasonally high water tables or seepage problems.

Topsoil: Provide topsoil as needed to grow grass on areas disturbed by construction.

Protect all concentrated inflow points along the channel with erosion resistant linings, such as riprap, sod, mulch, erosion control blankets, turf reinforcement mats or other appropriate practices as specified in the design plan.

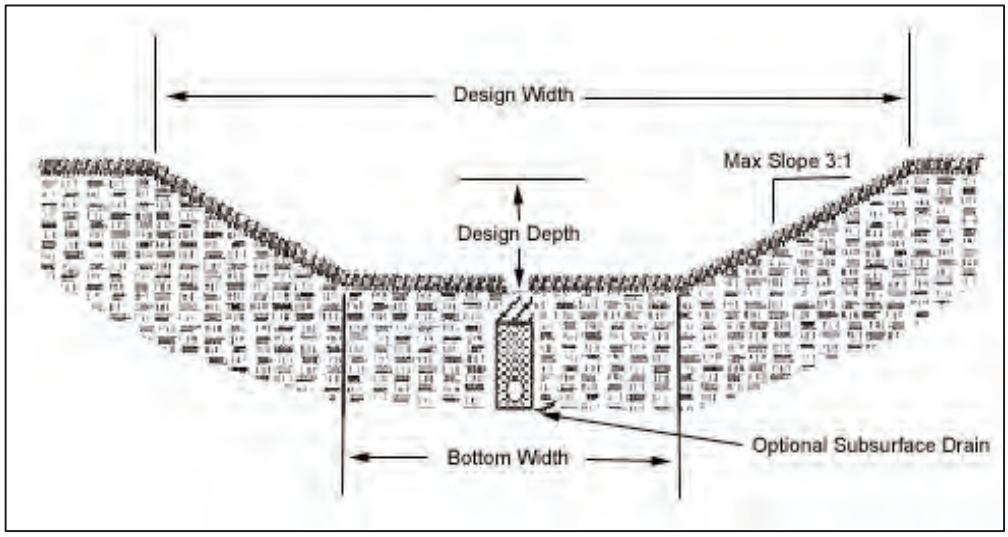


Figure GS-1 Typical Trapezoidal Grass-lined Channel

Construction Verification

Check finished grade and cross section of channel throughout the length of the watercourse. Verify channel cross sections at several locations to avoid constrictions to flow.

Vegetating

Prepare seedbed and apply lime, fertilizer and seed or sod in the swale immediately after grading and protect with erosion control blankets, turf reinforcement mats or mulch according to the design plan. If not specified in a plan, select lime, fertilizer, variety and mulching components from related practices – permanent seeding or temporary seeding, erosion control blanket or sodding.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Variations in topography on site indicate practice will not function as intended.
- Changes in plan may be needed.
- Design specifications for seed variety, seeding dates or erosion control materials cannot be met; substitution may be required.

- Erosion occurs in channel before vegetation is fully established.
- Erosion occurs at channel outlet before vegetation is fully established.
- Sediment is deposited at channel outlet before vegetation is fully established.

Maintenance

Inspect the channel following storm events both during and after grass cover is established; make needed repairs immediately.

Check the channel outlet and road crossings for blockage, ponding, sediment, and bank instability, breaks and eroded areas; remove any blockage, and make repairs immediately to maintain design cross section and grade.

Lined Swale (LS)

Practice Description

A lined swale is a constructed channel with a permanent lining designed to carry concentrated runoff to a stable outlet. This practice applies where grass swales are unsuitable because of conditions such as steep channel grades, prolonged flow areas, soils that are too erodible or not suitable to support vegetation or insufficient space and where riprap-lined swales are not desired. The purpose of a lined swale is to conduct stormwater runoff without causing erosion problems in the area of channel flow.

The material that provides the permanent lining may be concrete, a specialized type of erosion control blanket or manufactured concrete products.

Typical Components of the Practice

- Site Preparation
- Material Placement
- Stabilization
- Construction Verification

Construction

Prior to start of construction, lined swales should be designed by a qualified design professional and specifications should be available to field personnel.

Plans and specifications should be referred to by field personnel throughout the construction process.

Note: Concrete lined channel is the only lining method that is covered in this edition of the handbook. There are numerous permanent erosion control blankets and rock products available with similar applications and their unique installation procedures should be obtained from the manufacturer of the product being used. In addition, riprap-lined swale is covered in this handbook.

Site Preparation

Determine exact location of underground utilities.

Remove brush, trees and other debris from the channel and spoil areas, and dispose of properly.

Grade or excavate cross section to the lines and grades shown in design for the concrete subgrade.

Remove soft sections and unsuitable material and replace with suitable material. The subgrade should be thoroughly compacted and shaped to a smooth, uniform surface.

Material Placement

Place forms to meet the specific plan design for the project and place concrete of the designed mix into the forms according to construction specifications.

Construction and expansion joints should be used where swale length exceeds 10 feet. Construction joints should be spaced at 10 feet intervals and expansion points at intervals not to exceed 20 feet.

The subgrade should be moist at the time the concrete is placed.

Place concrete for the lined channel to the thickness shown on the plans and finish it in a workmanlike manner.

Coat the concrete with an approved curing compound as soon as finish work is complete and the free water has disappeared from the surface.

Provisions should be made to protect the freshly poured concrete from extreme temperatures to ensure proper curing.

Stabilization

Stabilize channel inlet and outlet points according to the design plan.

Stabilize adjacent disturbed areas after construction is completed with a vegetation treatment (permanent or temporary seeding) and mulching. Provide topsoil, lime and fertilizer as needed to grow grass on areas disturbed by construction. Many design plans specify a row of sod at the edges of the concrete channel.

If not specified in a plan, select lime, fertilizer, variety and mulching components from related practices – Permanent Seeding or Temporary Seeding and Mulching, Erosion Control Blankets or Sodding.

Construction Verification

Check finished grades and cross sections throughout the length of the channel. Verify channel cross section dimensions at several locations to avoid flow constrictions.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Variations in topography on site indicate practice will not function as intended; changes in plan may be needed.
- Design specifications cannot be met; substitution may be required. Unapproved substitutions could result in failure of the practice.

Maintenance

Inspect lined channel at regular intervals and after storm events. Check for erosion adjacent to the channel, at inlets and outlets and underneath the lined channel.

Give special attention to the channel inlet and outlet and repair eroded areas promptly.

Inspect for erosion in the entire swale and repair with appropriate vegetative treatment (permanent or temporary seeding and mulching).

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Riprap-lined Swale (RS)

Practice Description

A riprap-lined swale is a natural or constructed channel with an erosion-resistant rock lining designed to carry concentrated runoff to a stable outlet. This practice applies where grass swales are unsuitable because of conditions such as steep channel grades, prolonged flow areas, soils that are too erodible or not suitable to support vegetation or insufficient space.

Typical Components of the Practice

- Site Preparation
- Foundation Stabilization
- Rock Placement
- Outlet Stabilization
- Construction Verification

Construction

Prior to start of construction, riprap-lined swales should be designed by a qualified design professional.

Plans and specifications should be referred to by field personnel throughout the construction process.

Site Preparation

Determine exact location of underground utilities.

Remove brush, trees and other debris from the channel and spoil areas, and dispose of properly.

Grade or excavate cross section to the lines and grades shown in design. Over-excavate to allow for thickness of riprap and filter material. Foundation excavation not deep enough or wide enough may cause riprap to restrict channel flow and result in overflow and erosion. Side slopes are usually 2:1 or flatter.

Foundation Stabilization

Install geotextile fabric or aggregate in the excavated channel as a foundation for the riprap. Anchor fabric in accordance with design specifications. If the fabric is omitted or damaged during stone placement there may be settlement failure and bank instability.

Installation

As soon as the foundation is prepared, place the riprap to the thickness, depth and elevations shown in the design specifications. It should be a dense, uniform and well-graded mass with few voids. Riprap should consist of a well-graded mixture of stone (size and gradation as shown in design specifications) that is hard, angular, and highly chemical and weather resistant. Larger stone should predominate, with sufficient smaller sizes to fill the voids between the stones. The diameter of the largest stone size should be not greater than 1.5 times the d_{50} size. Minimum thickness of riprap liner should be 1.5 times the maximum stone diameter.

Blend the finished rock surface with the surrounding land surface so there are no overfalls, channel constrictions or obstructions to flow.

Outlet Stabilization

Stabilize channel inlet and outlet points. Extend riprap as needed.

Stabilize adjacent disturbed areas after construction is completed.

Construction Verification

Check finished grades and cross sections throughout the length of the channel.

Verify channel cross section dimensions at several locations to avoid flow constrictions.

Common Problems

Consult with a qualified design professional if any of the following occur:

- Variations in topography on site indicate channel will not function as intended; changes in plan may be needed.
- Design specifications for riprap sizing, geotextile fabric or aggregate filter cannot be met; substitution may be required. Unapproved substitutions could result in channel erosion.

Maintenance

Inspect channels at regular intervals and after storm events. Check for rock stability, sediment accumulation, piping, and scour holes throughout the length of the channel.

Look for erosion at inlets and outlets.

When stones have been displaced, remove any debris and replace the stones in such a way as to not restrict the flow of water.

Give special attention to outlets and points where concentrated flow enters the channel and repair eroded areas promptly by extending the riprap as needed.

Appendix F
Record of Revisions

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APPENDIX F

RECORD OF REVISIONS
BIRMINGHAM AIRPORT AUTHORITY SWPPP & BMP PLAN
Part IV.A.4.d

Revision Number	Section Affected	Description of Changes and Date	By
1	All	Updated Plan to comply with requirements of General Permit ALG140453. June 30, 2008	J2F, Inc.
2	All	NPDES Permit Renewal Update. – Included Terminal Modernization Project and EPA's Final Rule on deicing effluent discharges. – Removed tenants that require separate NPDES permit. March 2013	Volkert, Inc.
3	All	NPDES Permit Renewal Update. – Updated personnel information – Updated info on tanks/totes added since latest version	Goodwyn Mills Cawood, LLC

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Appendix G
Tenant
Activities/Operations

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APPENDIX G: Tenant Activities/Operations

The tenant information shown was taken from the 2021 BAA Tenant Directory. Tenants designated with an * are included in the BAA's General NPDES permit.

Tenant	Location	Activity / Operation	Separate NPDES Permit Required
Air Quarters Hangar #29A	4601 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
Air National Guard 117th Air Refueling Wing	5401 East Lake Blvd Birmingham, AL 35217	Public Service	Yes
Alabama Airport Parking and Storage	5333 Airport Highway Birmingham, AL 35212	Ground Transportation	
*American Airlines	5900 Airport Highway Box #21 Birmingham, AL 35212	Airline, Cargo/Industrial Services	
Alamo	5527 Airline Drive Birmingham, AL 35212	Ground Transportation	
Army Aviation Support Facility #2	5701 East Lake Blvd Birmingham, AL 35217	Public Service	Yes
Atlantic Aviation - East Ramp	Hangar #s 7A & 10-19 4725 65th Place N. Birmingham, AL 35206	Corporate Hangars/FBO's	
Atlantic Aviation - West Ramp	Hangar #'s 33-38 4243 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	
Avis Rent-A-Car	5500 Airline Drive Birmingham, AL 35212	Ground Transportation	
Barber Motorsports Park	6040 Barber Motorsports Pkwy Birmingham, AL 35094	Community Resources	
Birmingham Bravo, LLC	Hangar #4 3910 65th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Birmingham Business Alliance	505 North 20th St. Birmingham, AL 35203	Community Resources	

Tenant	Location	Activity / Operation	Separate NPDES Permit Required
Birmingham Fire Department-Airport	5401 East Lake Blvd. Bldg 125 Birmingham, AL 35217	Public Service	
Birmingham Police Airport Precinct	5900 Airport Highway Birmingham, AL 35212	Public Service	
Birmingham Police Narcotics - Airport	5900 Airport Highway Birmingham, AL 35212	Public Service	
Budget Rent-A-Car	5900 Airport Highway Box #17 Birmingham, AL 35212	Ground Transportation	
Buffalo Rock	34A West Oxmoor Road Birmingham, AL 35209	Amenities/Concessions	
City of Birmingham	Birmingham City Hall 710 North 20th St. Birmingham, AL 35203	Community Resources	
Clear	5900 Airport Highway Box #18 Birmingham, AL 35212	Amenities/Concessions	
Craneworks	5105 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
Cultural Alliance of Greater Birmingham	310 18th St. North, Ste 303 Birmingham, AL 35203	Community Resources	
*Delta	5900 Airport Highway Box #27 Birmingham, AL 35212	Airline, Cargo/Industrial Services	
*Delta Global Services	5900 Airport Highway Box #39 Birmingham, AL 35212	Airline, Ground Handling	

Tenant	Location	Activity / Operation	Separate NPDES Permit Required
Dollar/Thrifty	5900 Airport Highway Box #41 Birmingham, AL 35212	Ground Transportation	
Drummond Company	Hangar #2 3800 65th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Engie	5900 Airport Highway Box #49 Birmingham, AL 35212	Amenities/Concessions	
Encompass Health	Hangar #20 4851 65th Place N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Enterprise Rent-A-Car	5900 Airport Highway Box #14 Birmingham, AL 35212	Ground Transportation	
*Envoy Air	5900 Airport Highway Box #21 Birmingham, AL 3521	Ground Handling	
Ergon Holding	Hangar #32 4419 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
FAA Air Traffic Control Tower – BHM	5100 Tower View Dr. Birmingham, AL 35212	Public Service	
*FedEX Freight Service Center	2920 Davey Allison Boulevard Bessemer, AL 35020	Cargo/Industrial Services	
Flag Air (Buffalo Rock Hangar)	Hangar #21 4824 69th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
*GAT Airline Ground Support	c/o Delta Airlines 5900 Airport Highway Box #27 Birmingham, AL 35212	Ground Handling	
Greater Birmingham Convention & Visitors Bureau	2200 Ninth Ave N Birmingham, AL 35203	Community Resources	

Tenant	Location	Activity / Operation	Separate NPDES Permit Required
Greater Birmingham Convention & Visitors Bureau – Information Desk	5900 Airport Highway Box #9 Birmingham, AL 35212	Amenities/Concessions	
Hangar 24, LLC	Hangar #24 4900 69th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Hangar 31, LLC	Hangar #31 4427 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
Harbert Aviation, Inc.	Hangar #25 4904 69th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Hertz Corporation	5540 Airline Drive Birmingham, AL 35212	Ground Transportation	
HMSHost Corporation	5900 Airport Highway Box #30 Birmingham, AL 35212	Amenities/Concessions	
Hudson News	5900 Airport Highway Box #29 Birmingham, AL 35212	Amenities/Concessions	
Huntleigh Corporation	c/o US Airways 5900 Airport Highway Box #51 Birmingham, AL 3521	Ground Handling (Skycap Service only)	
JLM Shoeshine	5900 Airport Highway Birmingham, AL 35212	Amenities/Concessions	
Kaiser Aircraft Industries, Inc.	1943 North 50th St. Birmingham, AL 35212	Cargo/Industrial Services	Yes
Lamar Advertising	100 Hartsfield Centre Pkwy, Ste 500 Atlanta, GA 30354	Amenities/Concessions	

Tenant	Location	Activity / Operation	Separate NPDES Permit Required
Lanier Valet	5900 Airport Highway Box #43 Birmingham, AL 35212	Ground Transportation	
Ligon Air, LLC	Hangar #26 5109 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
McGriff, Seibels & Williams, Inc.	Hangar #22 4724 68th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
McWane, Inc.	Hangar #1 3700 65th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Montgomery Transport	Hangar #28 5101 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
MPT of 69th St., LLC	Hangar #25B 5009 69th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
National Car Rental System, Inc.	5527 Airline Dr. Birmingham, AL 35212	Ground Transportation	
O'Neal Steel	Hangar #30 4545 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
Payless Rent A Car	5500 Airline Dr. Birmingham, AL 35212	Ground Transportation	
Regions Financial Aviation	Hangar #21B 4816 69th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Smarte Carte, Inc.	4455 White Bear Pkwy St. Paul, MN 55110	Amenities/Concessions	

Tenant	Location	Activity / Operation	Separate NPDES Permit Required
Southern Company Services, Inc.	Hangar #33 4301 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
Southern Museum of Flight	4343 73rd Street N. Birmingham, AL 35206	Community Resources	
*Southwest	5900 Airport Highway Box #22 Birmingham, AL 35212	Airline, Cargo/Industrial Services	
SynFuel Holdings, LLC	Hangar #29B 4599 East Lake Blvd. Birmingham, AL 35217	Corporate Hangars/FBO's	Yes
Talladega Superspeedway	3366 Superspeedway Blvd. Birmingham, AL 35206	Community Resources	
The Robins Morton Group	Hangar #23 4800 69th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Thompson Tractor Co., Inc.	Hangar #6 4120 65th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes
Transportation Security Administration	6500 43rd Ave. N., Ste 100 Birmingham, AL 35206	Public Service	
*United	5900 Airport Highway Box #28 Birmingham, AL 35212	Airline	
*UPS-United Parcel Service	1710 40th Street North, Suite A Birmingham, AL 35217	Cargo/Industrial Services	
U.S. Customs & Border Protection, Department of Homeland Security	5900 Airport Highway Birmingham, AL 35212	Public Service	

Tenant	Location	Activity / Operation	Separate NPDES Permit Required
Vulcan Materials	Hangar #5 4110 65th Street N. Birmingham, AL 35206	Corporate Hangars/FBO's	Yes

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Appendix H
SWPPP
Responsibilities

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SWPPP RESPONSIBILITIES - BAA

FACILITIES / MAINTENANCE

- Maintain Proper Material Storage, Transfer & Disposal
- Implement Best Management Practices (BMPs) & Perform De-Icing Collection
- Perform Preventative Maintenance on Mechanical Equipment & Storm Water Drainage System
- Perform Twice Weekly Preventive Maintenance Inspections
- Schedule & Have Personnel Attend Annual SWPPP Training for BAA Staff
- Ensure Maintenance Personnel Know Their SWPPP Responsibilities

OPERATIONS

- Provide Tenant Contact Information to Planning and Development Annually
- Have Personnel Attend Annual SWPPP training
- Ensure Operations Personnel Know Their SWPPP Responsibilities

PLANNING AND DEVELOPMENT

- Maintain SWPPP and Required Records
- Verify Tenant Permit Coverage Annually
- Perform Storm Water Monitoring & Discharge Reporting
- Perform Twice Weekly Inspections of Storm Water BMPS & Drainage System
- Schedule Comprehensive Site Compliance Evaluation (CSCE)
- Have Personnel Attend Annual SWPPP training & QCI Training
- Ensure Planning and Development Personnel Know Their SWPPP Responsibilities

SWPPP RESPONSIBILITIES - TENANTS

.

AIR CARRIER / AIR CARGO

- Conduct Regular Inspections of Leasehold
- Correct Non-Compliance Areas Discovered
- Perform Employee Training on Spill Prevention & Storm Water Pollution Prevention
- Report All Spills
- Submit Annual Compliance Certification to BAA by January 15th each year

CORPORATE / GOVERNMENT

- Obtain Separate NPDES Permit as Required
- Provide Proof of Permit Coverage (or Proof Permit Coverage is Not Needed) to BAA
- Provide Copy of SWPPP & SPCC to BAA
- Review BAA's SPCC & SWPPP to Ensure Tenant Plan(s) Meet BAA Requirements
- Report All Spills

RENTAL CAR

- Prepare Site Specific SWPPP & SPCC as required
- Provide Copy of SWPPP & SPCC to BAA
- Review BAA's SWPPP & SPCC to Ensure Rental Car Tenant Plan(s) Meet BAA Requirements
- Report All Spills

Appendix I
Rental Car Tenant NPDES Permit Response

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ENTERPRISEHOLDINGS

Alamo
enterprise
National

September 21, 2012

Birmingham Airport Authority
Attn: Mr. James Ray, Jr.
5900 Airport Highway
Birmingham, AL 35212

South Central Regional Office
1 Riverchase Office Plaza Ste. 204
Birmingham, AL 35244
205-989-6424 p
205-989-8664 f
enterpriseholdings.com

Re: Enterprise Holdings response to Tenant Compliance with Environmental Regulations

Dear Mr. Ray:

Enclosed are both a copy of our SPCC plan for Enterprise/Alamo/National Car Rental and our response to the NPDES permit and SWPPP/BMP information you are requesting. The response has been drafted by our Corporate Airport Environmental Compliance Manager and reviewed and approved by outside council.

If you have any further questions with regard to permit and plans, please feel free to reach out to Wil Bereswill at our Corporate office in St. Louis, MO. His contact number is (314)512-5958. If you have any questions for me, I may be reached at 205-989-6424 x209.

Sincerely,

Genie Deusner
Regional Operations Manager

Enclosures

Stormwater Permitting Position Paper

Background: The U.S. EPA developed the Storm Water Permitting system in order to protect precipitation from becoming contaminated by industrial activities that are exposed to precipitation. The EPA utilized Standard Industrial Classification Codes (SIC Codes) to determine applicability to the Storm Water Permit Program. Airports fall under SIC Codes that are covered under the Storm Water Permit Program.

Exemption: Rental car companies are exempt from Stormwater Discharge regulations as a result of their SIC Code. We are not required by any state or federal environmental agency to obtain a permit, develop a plan (SWPPP) or obtain samples for analysis. Outside counsel has opined that rental car companies are exempt from Stormwater Discharge regulations, confirming our position. As noted, the regulations regarding storm water permitting govern industrial activities. The majority of rental car facility activity is commercial. Additionally, any "industrial" activity (vehicle fueling, vehicle maintenance and vehicle washing) is conducted indoors or under cover, and as a result is not exposed to precipitation. For example, fueling is done under a canopy, vehicles are serviced in service bays and washing is performed in car wash tunnels.

Action/Impact: In the event language is included in a concession or lease agreement that requires your Group to become a co-permittee to the Authority's permit, it should be deleted. If your Group is designated as a co-permittee, the requirements are rigorous and difficult to comply with and result in unnecessary costs.

General Response: Rental car facilities operate under SIC Code 7514. Even when they are located at an airport, they are not required to obtain an NPDES Stormwater permit under the Clean Water Act or its implementing regulations. Because the car rental facility does not operate under one of the designated industrial activities SIC Codes, and because it is not otherwise subject to storm water effluent limitations, new source performance standards, or toxic pollutant effluent standards, stormwater permitting requirements do not apply. As a result, rental car companies are not required to submit a Notice of Intent, obtain a Storm Water Permit, prepare a Storm Water Pollution Prevention Plan, etc.

Specific Responses: If the Authority points to the "Multi-Sector General Permit – Sector S – Air Transportation language that indicates that the permits apply to stormwater discharges from only those portions of the air transportation facility that are involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication), equipment cleaning operations or deicing operations, your Group should respond that the Multi-Sector General Permit applies to SIC Codes 4512 Air Transportation, Scheduled, 4513 Air Courier Services, Air Transportation, Nonscheduled, 4581 Airports, Flying Fields, and Airport Terminal Services, including aircraft maintenance and fueling, and that rental car facilities, although performing

fueling, servicing and cleaning of vehicles, they do not fall in those SIC Codes, and all equivalent operations are conducted under cover with little to no exposure to rainwater.

In the event the Authority indicates that your Group must comply with the stormwater regulations because its facilities should fall under the transportation facility category, you should respond that your Group's car rental facilities fall under 7514 SIC code, which does not fall under the transportation facility category. Other transportation related businesses operating facilities that do not need storm water discharge permits because their SIC Codes are exempt include truck stops, gas stations, repair shops that primarily service other's vehicles, and establishments that rent or lease trucks and other vehicles without drivers.

Permits May Be Required: Notwithstanding the foregoing, there may be times in which a car rental facility may still be required to obtain an NPDES stormwater permit, however this decision is made by the permitting authority, not the Airport Authority. In such instance, the permitting authority may individually designate a facility to obtain a permit due to their determination that there is an adverse impact of stormwater from the facility on water quality. We are unaware of any time in which Enterprise Holdings has been required by any environmental government agency to apply for and obtain a permit.

EPA Questions & Answers as Clarification:
Additional information that may help to enforce our position is cited from the EPA's website in the attached appendix.

Conclusion: As an industry, rental car companies are exempted from obtaining a stormwater permit or becoming a co-permittee to an airport authority's permit by our SIC Code. However, we do realize that we are operating on land owned by the airport and we must help them comply with their permit conditions. In order to achieve this, we can agree to prepare site specific Best Management Practices ("BMPs") and perform routine inspections to ensure conformance with those BMPs. A sample BMP is attached that can be used as a template for preparing a site specific BMP.

Appendix- Q&A From EPA Website

The answers to Question 66[1], 21[2], 22 below clearly specifies that only tenants who are operating on an airport that are regulated by the stormwater regulations (those with certain SIC Codes) are required to either apply for a permit or become a co-permittee with the airport.

Q66: Can multiple tenants at an industrial site (airport, industrial park) who require coverage under the MSGP act as co-permittees, prepare one SWPPP and conduct monitoring jointly? Or must they each prepare a separate SWPPP and monitor separately?

Ans: In Appendix A of the 2008 MSGP, "Operator" is defined as:

> "any entity with a stormwater discharge associated with industrial activity that meets either of the following two criteria:
> (i) The entity has operational control over industrial activities, including the ability to modify those activities; or
> (ii) The entity has day-to-day operational control of activities at a facility necessary to ensure compliance with the permit (e.g., the entity is authorized to direct workers at a facility to carry out activities required by the permit).

Thus, it is possible that there may be more than one operator at a facility. Using airports as an example, an airport typically operates under a single management organization known as the airport "authority" which in most cases is a public agency. Airline carriers and other fixed base operators (e.g., fueling companies and maintenance shops) that have contracts with the airport authority to conduct business on airport property are commonly referred to as "tenants" of the airport.

Tenants may be of two types – those that are regulated as stormwater dischargers associated with industrial activities under 40 CFR 122.26(b)(14) and those that are not. The operator and the tenants of the airport that conduct industrial activities as described above, or as described anywhere in 40 CFR 122.26(b)(14) and which have stormwater discharges, are required to apply for coverage under an NPDES stormwater permit for the discharges from their areas of operation. Where an airport has multiple operators (airport authority and tenants) that have stormwater discharges associated with industrial activity, as described above, each operator is required to apply for coverage under an NPDES stormwater permit. This may be done as separate operators or may be done as co-permittees. Each individual party must submit a Notice Of Intent (NOI) to be covered under the Permit. Ultimately, the operator(s)/owner(s) of the stormwater outfalls from the airport is(are) responsible for compliance with all terms and conditions of the Permit. The airport authority and tenants of the airport are encouraged to work in partnership in the development and implementation of a stormwater pollution prevention plan.[4]

[4] Federal Register, Vol. 60, No. 189, 50998. Friday, September 29, 1995.
http://www.dep.state.fl.us/water/stormwater/npdes/docs/msgp/sfp.pdf

[1] Question & Answer 66 are found in the document on the following link: http://yosemite.epa.gov/R10/water.nsf/989a02d6c3ced525882573fc0065b9a3/df0df90d683b419e882573590081496e/$FILE/MSGP%202008%20Region%2010%20Q&A%20%20-%20final.pdf

[2] Questions & Answers for 21, 22, 30 & 58 are found in the document on the following link: http://www.tn.gov/environment/wpc/stormh2o/epastormwater.pdf

21. Are gas stations and automotive repair shops required to apply for an NPDES storm water discharge permit?

No. These facilities are classified in SIC codes 5541 (gasoline filling stations) and 7538 (automotive repair shops). The storm water rule generally does not address facilities with SIC classifications pertaining to wholesale, retail, service or commercial activities. Additional regulations addressing these sources may be developed under Section 403(p)(6) of the CWA if studies required under Section 402(p)(5) indicate the need for regulation.

22. Does a vehicle maintenance shop or an equipment cleaning facility need to apply for a permit?

Yes, if the shop is categorized by the SIC codes listed in the transportation category of facilities engaged in industrial activity [i.e., SIC codes 40, 41, 42 (except 4221-25) 43, 44, 45 and 5171]. Only the vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) and equipment cleaning areas (such as truck washing areas) must be addressed in the application.

As explained above, gas stations are classified in SIC code 5541 and automotive repair services are classified as SIC code 75, which are not included in the regulatory definition of industrial activity, and therefore are not required to submit NPDES storm water discharge permit applications.

Question 30 clarifies that the term "Operator" as used in the Sector S Permit means operating airlines and does not specifically call out rental car facilities as an operator.

30. Who is responsible for seeking permit coverage at an airport that has many companies using the facility and discharging storm water?

The operator is responsible for seeking coverage. EPA strongly encourages cooperation between the airport authority and all operating airlines at that airport. Each operator is responsible for coordinating with the others and they may act as co-applicants. Please note that under 122.26(a)(6) the Director has the discretion to issue individual permits to each discharger or to issue an individual permit to the airport operator and have other dischargers to the same system act as co-permittees to the permit issued to the airport operator.

The following question supports the position that the facility's primary SIC code dictates whether or not the facility must submit a stormwater permit application.

58. If the SIC code for the activity in which a facility is primarily engaged is not included in the definition of storm water discharge associated with industrial activity, but the facility has a secondary SIC code that is included in the definition, is the facility required to submit an NPDES storm water permit application?

For purposes of this regulation, a facility's SIC code is determined based on the primary activity taking place at that facility. In the case described above, the facility is not required to apply for an NPDES storm water discharge permit. However, if the facility conducts an activity on the site identified in the narrative descriptions of categories (i), (iv), (v), (vii), or (x), then the facility would be required to submit an NPDES storm water permit application for portions of the facility used for the activities described in those categories.

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Appendix J
Air Carrier/Air Cargo Tenant Annual Compliance Certification

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Birmingham Airport Authority
Air Cargo/Air Carrier Tenant
Annual Compliance Certification

Must Complete Annually By January 15

To: Birmingham Airport Authority

From: _____(Tenant)

By: _____(Tenant's Authorized Representative)

I understand that _____ (hereinafter referred to as "Tenant") must comply with all requirements, procedures, and policies contained in the Birmingham Airport Authority's ("BAA") NPDES Permit # ALG140453; Storm Water Pollution Prevention Plan and Best Management Practices Plan; and Spill Prevention, Control, and Countermeasure Plan (hereinafter collectively referred to as "BAA Storm Water Permit Requirements"). I have reviewed and understand the BAA Storm Water Permit Requirements. My signature below indicates that I have made appropriate inquiry, and I certify that Tenant complied with all BAA Storm Water Permit Requirements at all times during the prior calendar year and is currently in compliance with all BAA Storm Water Permit Requirements. For purposes of this certification, compliance by Tenant includes, but is not limited to:

- Conducting regular inspections of Tenant's leasehold and promptly correcting any areas of non-compliance. **Copies of Tenant's inspection records are attached.**

- Conducting preventative maintenance of facility equipment and systems to correct conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

- Training all Tenant employees on spill prevention and storm water pollution prevention practices. **Copies of Tenant's training records are attached.**

- Reporting all spills to BAA, and if required by law, to the appropriate federal, state, or local agencies.

Dated: _____

_____
Signature

_____
Title of Authorized Representative

_____
Phone Number

_____
Email Address