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Mark Martin

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Begin New Search

For service of process contact the Secretary of State's office.

Corporation Name	METAL MANAGEMENT MEMPHIS, L.L.C.
Fictitious Names	
Filing #	800187872
Filing Type	Foreign Limited Liability Company
Filed under Act	Foreign LLC; 1003 of 1993
Status	Good Standing
Principal Address	
Reg. Agent	CORPORATION SERVICE COMPANY
Agent Address	300 SPRING BUILDING, SUITE 900 300 S. SPRING ST. LITTLE ROCK, AR 72201
Date Filed	10/29/2010
Officers	AMIT N PATEL , Incorporator/Organizer
Foreign Name	N/A
Foreign Address	2908 POSTON AVE NASHVILLE, 37203
State of Origin	TN

Purchase a Certificate of Good Standing for this Entity   Pay Franchise Tax for this corporation

Business Entity Detail

Entity details cannot be edited. This detail reflects the current state of the filing in the system.

To perform a new search, select Business Information Search.

Actions Available For This Entity:

File Annual Report | Update Mailing Address
Certificate of Existence | Change Registered Agent

000290657: Limited Liability Company - Domestic

Printer Friendly Version

Name: METAL MANAGEMENT MEMPHIS, L.L.C.
Old Name: PERLCO, L.L.C.

Status: Active
Formed in: TENNESSEE
Fiscal Year Close: June
Term of Duration: Perpetual
Principal Office: 325 N LASALLE ST STE 550
CHICAGO, IL 60654 USA
Mailing Address: 325 N LASALLE ST
SUITE 550
CHICAGO, IL 60610 USA
AR Exempt: No
Managed By: Member Managed

Initial Filing Date: 02/15/1995
Delayed Effective Date:
AR Due Date: 10/01/2012
Inactive Date:
Number of Members: 1

Assumed Names | History | Registered Agent

Name	**Status**	**Expires**
Perlco	Active	02/10/2015
PERLCO	Inactive - Name Expired	01/10/2010
SIMS METAL MANAGEMENT	Active	06/02/2013

Storm Water Pollution Prevention Plan (SWPPP) Completeness Checklist

Permittee: Metal Management Memphis, LLC
Facility Name: Sims Metal Management
Tracking Number: ARR00 1006

Yes = Complete
No = Incomplete/Deficient
N/A = Not Applicable to Facility

Yes	No	N/A	Item	Permit Section Citation	Notes
			A. Facility Information		
x			1. Facility Name	Part 4.6.1	
x			2. General Permit Number	Part 4.6.1	
x			3. Physical Address	Part 4.6.1	
x			4. SIC Code	Part 4.6.1	
			B. Stormwater Pollution Prevention Team		
x			1. Identifies specific positions or individuals	Part 4.6.2	
x			2. Outline their responsibilities	Part 4.6.2	
			C. Facility Description		
x			Description of industrial activities conducted at site (process description)	Part 4.6.3	
x			**D. Site Map --- See End of Evaluation Form**	Part 4.6.4	
			E. Description of Potential Pollutant Sources		
x			1. Industrial Activities	Part 4.6.5.1	
x			2. Inventory of Exposed Materials	Part 4.6.5.2	
x			3. Spills and Leaks	Part 4.6.5.3	
x			4. Sampling Data	Part 4.6.5.4	
x			5. Risk Identification and Potential Pollutant Sources	Part 4.6.5.5	
			F. Control Measures		
x			1. Best Management Practice (BMPs)	Part 4.6.6.1	
x			2. Minimize Exposure	Part 4.6.6.2	
x			3. Good Housekeeping	Part 4.6.6.3	
x			4. Preventative Maintenance	Part 4.6.6.4	
x			5. Spill Prevention and Response Procedures	Part 4.6.6.5	
x			6. Employee Training	Part 4.6.6.6	
x			7. Erosion and Sediment Control	Part 4.6.6.7	
x			8. Management of Run-on and Runoff	Part 4.6.6.8	
		x	9. Salt Storage Piles	Part 4.6.6.9	
x			**G. Authorized Non-Stormwater Discharges**	Part 4.6.7	
			H. 303(d) and TMDLs		
x			1. Are pollutants listed on the 303(d) list or in the TMDLs for the receiving waters addressed in SWPPP?	Part 4.6.8	
		x	2. Have pollutants directly related to the site been addressed?	Part 4.6.8	
		x	3. Measures taken to reduce pollutants from the site	Part 4.6.8	
			I. Evaluation and Inspections		
x			1. Visual Site Inspections (Minimum 4/year)	Part 4.6.10.1	
x			2. Compliance Site Evaluations (Once/year)	Part 4.6.10.2	
x			**K. Signed Plan certification**	Part 4.6.12	

Storm Water Pollution Prevention Plan (SWPPP) Completeness Checklist

Permittee: Metal Management Memphis, LLC
Facility Name: Sims Metal Management

Tracking Number: ARR00 1006

Yes = Complete
No = Incomplete/Deficient
N/A = Not Applicable to Facility

Yes	No	N/A	D. Site Map	Permit Section Citation	Notes
x			1. Size of Property	Part 4.6.4.a	
x			2. Location of Significant Structures and Impervious Surfaces	Part 4.6.4.b	
x			3. Drainage Flow	Part 4.6.4.c	
x			4. Structural Contols	Part 4.6.4.d	
		x	5. Receiving water in the immediate vicinity	Part 4.6.4.e	
x			6. Stormwater Conveyences, e.g. ditches, pipes, swales	Part 4.6.4.f.	
x			7. Potential Pollution Sources	Part 4.6.4.g	
x			8. Monitoring Locations	Part 4.6.4.h	
x			9. Stormwater Inlets/outfalls with outfall # and outline of area draining to outfall	Part 4.6.4.i	
x			10. MS4 systems	Part 4.6.4.j	
		x	11. Locations and descriptions of non-stormwater discharges	Part 4.6.4.k	
			12. Location of industrial activities exposed to precipitation including:		
x			a. Fueling stations	Part 4.6.4.l	
x			b. Vehicle / equipment maintenance or cleaning areas	Part 4.6.4.l	
x			c. Loading / unloading areas	Part 4.6.4.l	
x			d. Waste treatment, storage or disposal areas	Part 4.6.4.l	
x			e. Liquid storage tanks	Part 4.6.4.l	
x			f. Processing areas	Part 4.6.4.l	
x			g. access roads to be used to move raw materials, product, waste product or	Part 4.6.4.l	
x			h. Transfer Areas for bulk substances	Part 4.6.4.l	
x			i. Machinery	Part 4.6.4.l	
		x	13. locations and sources of run-on to the site that contains pollutants	Part 4.6.4.m	

SWPPP CERTIFICATION

This Storm Water Pollution Prevention Plan (SWPPP) was prepared for Sims Metal Management in accordance with best management practices and in accordance with the factors outlined in Title 40 Code of Federal Regulations 122.26 as appropriate. It has the full approval of management at a level of authority to commit the necessary resources to ensure full SWPPP implementation. This SWPPP will be implemented as described herein, and will be reviewed and evaluated annually.

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

Gary S. Hensley
Signature

6-19-12
Date

Gary Hensley
Name

General Manager
Title

NON-STORM-WATER CERTIFICATION

EPA MSGP 2008 5.1.3.4: Non-Storm-Water Discharges. You must document that you have evaluated for the presence of non-storm-water discharges and that all unauthorized discharges have been eliminated. Documentation of your evaluation must include: the date of any evaluation; a description of the evaluation criteria used; a list of the outfalls or onsite drainage points that were directly observed during the evaluation; the different types of non-storm-water discharge(s) and source locations; and the action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge.

I certify under penalty of law that the facility has been evaluated for the presence of non-storm-water discharges. This evaluation was performed through repeated observations of the facility's outdoor storage and work areas during periods of dry weather. I certify that, to the best of my knowledge, no non-storm-water discharges exist at the facility as of the date. A Non-Storm-Water Evaluation and Certification Form (Appendix C) must be included in the Storm Water Pollution Prevention Plan and must be performed when non-storm-water is observed during **quarterly** facility inspections.

Gary L Hensley

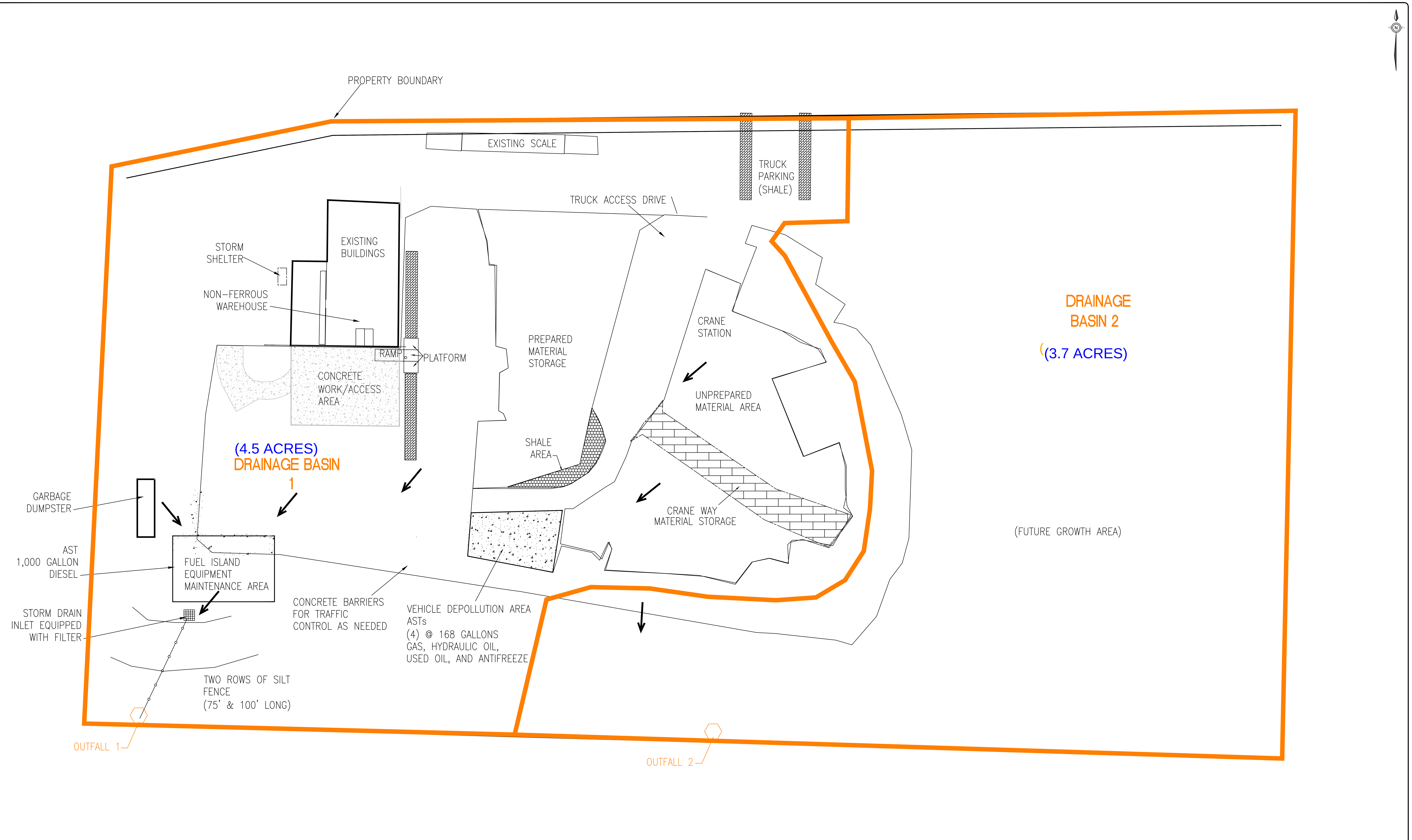
Signature of Responsible Facility Official

6-19-12

Date

Gary Hensley

Name of Responsible Facility Official



LEGEND
→ FLOW DIRECTION

SOURCE:
SIMS METAL MANAGEMENT

NOT TO SCALE

FIGURE 3
SITE MAP
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

REQUESTED BY: S.TCHANG
DRAWN BY: BRONSON
DWG DATE: 05/11/12
DWG NO: 12024_B003

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SIMS METAL MANAGEMENT

CLEAN WATER ACT COMPLIANCE PLANS

LONOKE YARD
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

STORM WATER POLLUTION PREVENTION PLAN, MAY 2012

Appendix A Facility Diagrams
Appendix B Facility Oil Storage and Potential Pollutant Sources Inventory
Appendix C Example Forms
Appendix D Storm Water Permit
Appendix E Best Management Practices Manual
Appendix F Training Presentations
Appendix G Records

Prepared for:

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304 West Bankhead
New Albany, Mississippi 38652
(662) 538-7100
www.simsmm.com

Prepared by:

EnSafe Inc.
5724 Summer Trees Drive
Memphis, Tennessee 38134
(901) 372-7962
(901) 588-7962
www.ensafe.com

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Appendices

SWPPP CERTIFICATION

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

______________________________	______________________________
Signature	Date
Gary Hensley	General Manager
Name	Title

NON-STORM-WATER CERTIFICATION

EPA MSGP 2008 5.1.3.4: Non-Storm-Water Discharges. You must document that you have evaluated for the presence of non-storm-water discharges and that all unauthorized discharges have been eliminated. Documentation of your evaluation must include: the date of any evaluation; a description of the evaluation criteria used; a list of the outfalls or onsite drainage points that were directly observed during the evaluation; the different types of non-storm-water discharge(s) and source locations; and the action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge.

I certify under penalty of law that the facility has been evaluated for the presence of non-storm-water discharges. This evaluation was performed through repeated observations of the facility's outdoor storage and work areas during periods of dry weather. I certify that, to the best of my knowledge, no non-storm-water discharges exist at the facility as of the date. A Non-Storm-Water Evaluation and Certification Form (Appendix C) must be included in the Storm Water Pollution Prevention Plan and must be performed when non-storm-water is observed during **quarterly** facility inspections.

____ ___________________________

Signature of Responsible Facility Official Date

Gary Hensley

Name of Responsible Facility Official

Record of SWPPP Review Amendments Sims Metal Management				
Date	**Reviewer**	**Section**	**Amendments**	**Responsible Party Initials**

1.0 INTRODUCTION

Sims Metal Management's Storm Water Pollution Prevention Plan (SWPPP) has been prepared with the goal of improving water quality by reducing pollutants contained in storm water discharges. Meeting this goal can be a difficult challenge for many reasons. For example, the original sources of pollutants transported in storm water can be diffused or spread out over a wide area. Small oil and grease spills at hundreds of different activities within a single facility can collectively represent a major pollution problem. In addition, the nature of storm water is such that the amount of pollutants that enter the receiving waters will vary in accordance with the frequency, intensity, and duration of rainfall and the nature of the drainage patterns.

The pollution prevention approach in this SWPPP focuses on three major objectives:

- Identifying sources of pollution associated with industrial activities that are potentially affecting the quality of storm water discharges from the facility.

- Describing and ensuring implementation of practices to minimize and control pollutants associated with industrial activities that are entering storm water discharges from the facility.

- Ensuring compliance with the terms and conditions of the facility's National Pollutant Discharge Elimination System (NPDES) permit.

This SWPPP addresses areas at the facility where storm water discharges exposed to source materials can be practicably prevented or eliminated and identifies potential sources of pollution that may be reasonably expected to affect the quality of storm water discharges.

This SWPPP describes the implementation of best management practices (BMPs) at the facility to eliminate or reduce the amount of pollutants in storm water runoff from industrial activity areas to the maximum extent practicable (MEP). BMPs include both structural and nonstructural (operational) practices. Structural practices include secondary containment basins, storm water diversionary curbing, drain plugs, and similar items constructed or installed to eliminate or reduce the amounts of pollutants in storm water runoff. Nonstuctural (operational) practices are also referred to as source controls and include standard operating procedures, schedules of activities, prohibitions on practices, and other management actions that are intended to eliminate or reduce the amount of pollutants in storm water runoff.

1.1 Regulatory Drivers

40 CFR122.26(b)14): ***Storm water discharge associated with industrial activity.*** Means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under this part. For the categories of industries identified in this section, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots, as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally-, state-, or municipally-owned or operated that meet the description of the facilities listed in paragraphs (b)(14)(i) through (xi) of this section) include those facilities designated under the provisions of paragraph (a)(1)(v) of this section. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of paragraph (b)(14):

Category (vi) Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as SIC 5015 (used motor vehicle parts) and 5093 (scrap and waste materials).

Sims Metal Management discharges storm water that is associated with industrial activity as defined in the U.S. Environmental Protection Agency (USEPA) NPDES program established pursuant to the Federal Water Pollution Control Act, as amended by the Clean Water Act (33 U.S.C. 1251 et seq.), and codified in Title 40 of the Code of Federal Regulations (CFR), Part 122 (40 CFR 122). Specifically, the facility is a ferrous and non-ferrous metal recycler as defined by Standard Industrial Classification (SIC) Code 5093, and the definition of industrial activity areas in 40 CFR 122.26(b)(14)(vi) includes SIC Codes in the 50 series.

Arkansas is a delegated state with NPDES permitting authority. The state's NPDES program is administered by the Arkansas Department of Environmental Quality (ADEQ). Arkansas storm water regulations for storm water discharges associated with industrial activity are codified in the Act 472 of 1949 and set forth in the *Arkansas Water and Air Pollution Control Act*, 8-4-101 et seq., as amended, and the Clean Water Act (33 U.S.C. 1251 et seq.). Sims Metal Management is covered under Arkansas's Storm Water Industrial General Permit for Industrial Activities (ARR00). The general permit is included as Appendix D. Table 1-1 summarizes permit requirements.

Table 1-1
Permitted Storm Water Discharges

Discharges Covered	Permit No.	Effective Permit Date	Permit Expiration Date	Permit Required Activities	Reporting Required
Storm Water Associated with Industrial Activity					
Ferrous and non-ferrous metal recycler (SIC Code 5093)	ARR00	07/01/2009	06/30/2014	Semi-annual analytical monitoring from outfall 1 for Al, Cu, Fe, Pb, and Zn; quarterly facility inspections including visual outfall examinations (at least 1 during a rain event); annual comprehensive site compliance evaluations; periodic dates for employee training maintained with the SWPPP	Industrial Storm Water General Permit Annual Report Form due to ADEQ by January 31 of each calendar year

The ADEQ can be reached at:

Thomas Rheaume, Branch Manager
Permits Branch
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
http://www.adeq.state.ar.us/Default.htm

1.2 Storm Water Pollution Prevention Plan Requirements

ARR00, ACT- 472 in Appendix D specifically requires the facility to develop and implement a SWPPP.

In general, this SWPPP follows the regulatory requirements for SWPPPs outlined in 40 CFR 122.26, USEPA Multi-Sector General Permit (MSGP) for storm water discharges associated with industrial activity (EPA MSGP 2008), and ARR00. The SWPPP discusses the facility's conformance to the applicable regulatory requirements of that section. In general, the federal regulations are cited at the beginning of each appropriate section. If the state regulations are more stringent, they are discussed in the applicable section.

1.3 Pollution Prevention Team

EPA MSGP 2008 5.1.1: ***Storm Water Pollution Prevention Team.*** You must identify the staff members (by name or title) that comprise the facility's storm water pollution prevention team as well as their individual responsibilities. Your storm water pollution prevention team is responsible for assisting the facility manager in developing and revising the facility's SWPPP as well as maintaining control measures and taking corrective actions where required. Each member of the storm water pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of the permit and SWPPP.

The SWPPP Team identifies potential pollutants and spill sources and develops environmental incident reporting procedures. The team develops and coordinates spill prevention and response procedures and provides prompt notices to appropriate agencies and environmental contractors. The team develops storm water pollution prevention, inspection, and record-keeping procedures; reviews environmental occurrences to evaluate the need for modifications to the SWPPP; and implements subsequent amendments to the SWPPP.

The responsibility for storm water pollution prevention for the site lies with Sims Metal Management's facility's General Manager. The General Manager directs the efforts of the storm water team to ensure the actions required by the SWPPP are implemented. Table 1-2 lists the lead members of the storm water team and their responsibilities are presented in subsequent sections.

Table 1-2
Storm Water Team

Name			Work Phone
Gary Hensley	—	General Manager	(901) 521-4400
Kelly Walton	—	Lonoke Facility Manager	(205) 420-9267
Amanda Crafton	—	Southern Region SHEC Manager	(901) 521-4412

1.3.1 General Manager

The General Manager has the responsibility and authority to accomplish the following:

- Coordinating the storm water team and develop BMPs, inspection procedures, staff training, and facility maintenance programs to ensure compliance with the SWPPP.

- Conducting inspections and maintain inspection logs to determine the need for changes to the SWPPP.

- Ensuring that required monitoring is performed and results documented.

- Reviewing monitoring results and initiate corrective action following adverse monitoring reports to ensure compliance with the SWPPP and appropriate regulatory requirements.

- Ensuring the SWPPP and other required reports are maintained, updated as necessary, and available for regulatory review.

- Conducting annual storm water team meetings to review the SWPPP, determine the need for modifications to the SWPPP, and evaluate the overall effectiveness of the SWPPP.

- Identifying resources required, provide training, and maintain training records.

1.3.2 Storm Water Team Members

The SWPPP team is responsible for the following:

- Assisting with the implementing the SWPPP.
- Compiling data and preparing reports.
- Assisting with inspections and maintaining inspection logs.
- Reporting identified deficiencies to the General Manager.

2.0 FACILITY INFORMATION

Facility Name:	Sims Metal Management Lonoke
Mailing Address:	301 Frontage Road Lonoke, Arkansas 72086
Location:	301 Frontage Road Lonoke, Arkansas 72086
Telephone:	(205) 420-9267
Contact:	Facility Manager
NPDES Permit No:	ARR000000
SIC Code:	5093 Ferrous and Non-ferrous Metal Recycler
Latitude:	**34.802989**
Longitude:	-91.884602
Receiving Water:	Bayou Two Prairie to Bayou Meto

2.1 Facility Location

EPA MSGP 2008 5.1.2: *General Location Map.* Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of your facility and all receiving waters for your storm water discharges.

Sims Metal Management is at 301 Frontage Road in Lonoke, Lonoke County, Arkansas. The property is owned by Sims Metal Management. Figure 1, a U.S. Geological Survey topographic map in Appendix A, shows the site location.

2.2 Activities at Facility

EPA MSGP 2008 4.2.2.1: *Activities at Facility.* Your SWPPP must include a description of the nature of the industrial activity(ies) at your facility.

Sims Metal Management processes and recycles ferrous and non-ferrous scrap metal from peddlers and industrial sources at its Lonoke, Arkansas facility. The Sims Metal Management facility stores metal to be processed and receives and stores ferrous, non-ferrous, and stainless steel scrap. There is truck access to and from the site for loading and unloading of scrap metal. The storage yard contains piles of scrap metal, a cutting area for disassembly of scrap items, empty trailers/roll-off bins and garbage containers for sorting materials, and a scale for weighing shipments. Detailed information on the industrial activities at the facility is described in Section 3.0 and the table set in Appendix B.

Sims Metal Management policy requires oil be drained from items before being brought onsite. In addition, loads entering the facility are inspected for any unusual residues or regulated materials, such as transformer units or items that might contain chlorofluorocarbons (CFCs). Loads are either rejected or the regulated materials are removed and placed in designated areas for offsite disposal. Peddlers bringing white goods must sign an agreement certifying that CFC-containing refrigerants have been removed. Metals are then divided into ferrous and non-ferrous. Aluminum cans and other non-ferrous items are unloaded and stored inside the warehouse. Metal turnings that may have cutting fluids are stored in a roofed and diked area. The facility uses a shredder to reduce the size of scrap material to facilitate separating and shipping. Cranes, forklifts, draglines and other types of oil filled operating equipment are located at the site. These units have hydraulic systems that can leak.

2.3 Site Map

EPA MSGP 2008 5.1.2: Your SWPPP must include a ***legible site map identifying the following:***

- The size of the property in acres.
- The location and extent of significant structures and impervious surfaces.
- Directions of storm water flow (use arrows).
- Locations of all existing structural control measures.
- Locations of all receiving waters in the immediate vicinity of your facility, indicating if any of the waters are impaired and, if so, whether the waters have TMDLs established for them.
- Locations of all storm water conveyances including ditches, pipes, and swales.
- Locations of potential pollutant sources identified.
- Locations where significant spills or leaks have occurred.
- Locations of all storm water monitoring points.
- Locations of storm water inlets and outfalls, with a unique identification code for each outfall (e.g., Outfall No. 1, No. 2, etc.), indicating if you are treating one or more outfalls as "substantially identical", and an approximate outline of the areas draining to each outfall.
- Municipal separate storm sewer systems, where your storm water discharges to them.
- Locations and descriptions of all non-storm-water discharges identified.
- Locations of the following activities where such activities are exposed to precipitation: fueling stations; vehicle and equipment maintenance and/or cleaning areas; loading/unloading areas; locations used for the treatment, storage or disposal of wastes; liquid storage tanks; processing and storage areas; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; transfer areas for substances in bulk; and machinery.
- Locations and sources of run-on to your site from adjacent property that contains significant quantities of pollutants.

Figures 2 and 3 in Appendix A is an aerial photograph and site map that details potential pollutant sources from Sims Metal Management; and includes the items detailed in the regulations cited above, and can be used to estimate the predicted flow of potential pollutants in each drainage basin.

2.4 Description of Drainage Basins

Figure 3 in Appendix A shows storm water drainage patterns and drainage basin boundaries. Bayou Two Prairie lies along the site's southern boundary.

Drainage Basin #1

Drainage Basin #1 includes 4.5 acres of the property, which is all of the actively used land on the site. Equipment, processes, and storage areas in this drainage basin include employee parking, equipment maintenance, and miscellaneous (ferrous, nonferrous, and stainless) scrap metal piles. This area drains by sheet flow toward storm water Outfall #1, which flows to undeveloped land that drains to Bayou Two Prairie, a tributary of Bayou Meto.

Drainage Basin #2

Drainage Basin #2 includes 3.7 acres of future growth area covered with vegetation and concrete. The site was formerly used for scrap metal storage by the former owner. This area drains by sheet flow toward storm water Outfall #2, which flows to undeveloped land that drains to Bayou Two Prairie, a tributary of Bayou Meto (see Table 2-1).

Table 2-1
Industrial Drainage Basin Summary

Drainage Basin ID	Drainage Basin Industrial Land Uses	Receiving Water
DB-1	Employee parking, equipment maintenance, miscellaneous (ferrous, nonferrous, stainless) scrap metal piles, and scrap metal storage	Sheet flow toward Outfall #1, which flows to Bayou Two Prairie, a tributary of Bayou Meto
DB-2	Future growth area / Future scrap metal storage	Sheet flow toward Outfall #2, which flows to Bayou Two Prairie, a tributary of Bayou Meto

2.5 Section 313 Reporting Requirements

Arkansas has special requirements for facilities having Section 313 "Water Priority Chemicals." The facility does not have any Section 313-listed chemicals; therefore, the additional requirements are not applicable. In addition, Sims Metal Management does not trigger any Form R reporting requirements.

2.6 History of Spills and Leaks

EPA MSGP 2008 5.1.3.3: *Spills and Leaks.* You must document where potential spills and leaks could occur that could contribute pollutants to storm water discharges, and the corresponding outfall(s) that would be affected by such spills and leaks. You must document all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a storm water conveyance, in the 3 years prior to the date you prepare or amend your SWPPP. Significant spills and leaks include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA Section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or Section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC §9602. This permit does not relieve you of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 relating to spills or other releases of oils or hazardous substances.

Because this facility has recently been purchased by Sims Metal Management, there is no information on reportable spills or leaks of toxic or hazardous pollutants that involved storm water contamination or that otherwise were documented to have occurred at the facility in the past 3 years. Significant spills or leaks that contaminate storm water will be documented and included in the annual compliance evaluation as detailed in Section 5.0.

2.7 Scrap Metal Recycler SWPPP Requirements

Sector N of MSGP 2008 has special SWPPP requirements for scrap and waste recycling facilities that receive, process and provide wholesale distribution of ferrous and nonferrous metals. Though not a part of ARR00, the requirements are included in this SWPPP because they are BMPs that meet the intent of ARR00 to set management practices at the site to prevent pollution. Nationally, these requirements apply to facilities like Metal Management that accept industrial material instead of residential/non-industrial recycling material. The special conditions are included in the following sub-sections.

2.7.1 Inbound Recyclable and Waste Material Control Program

Metal Management's inbound recyclable and waste material control program has the following components:

Contractual Component

When contracting with companies to receive scrap metal, Metal Management requires all material to be drained of residual fluids. Used auto bodies are inspected prior to scrapping, and if any residual oil or gasoline remains, these materials are drained and appropriately containerized.

Inspection Component

Recyclable and waste material inspections are conducted when a shipment of scrap metal arrives at Metal Management to minimize the likelihood of receiving materials that may be significant pollutant sources to storm water discharges. A form in Appendix C will be used for this purpose.

Educational Component

Metal Management utilizes the BMP handouts in Appendix E to educate clients to minimize pollutants on materials shipped in provided roll-off bins to Metal Management' facility. This information encourages suppliers of scrap and recyclable waste materials to drain residual fluids, whenever applicable, before arrival at the facility.

Training Component

As detailed in Section 6.0, employees are trained annually regarding the inspection and acceptance of inbound recyclable materials.

2.7.2 Outdoor Scrap and Waste Material Stockpiles/Storage

Table B-4 of Appendix B details all outdoor storage and describes those measures and controls used to minimize contact of storm water runoff with stockpiled materials, processed materials and non-recyclable wastes. The facility's inbound recyclable and waste material control program is the primary BMP for the outdoor storage areas. Some of the material is covered at this time.

- Metal Management may consider using permanent or semi-permanent covers to protect stockpiled materials where such measures are reasonable and appropriate.

- Metal Management may consider the use of sediment traps, vegetated swales and strips, to facilitate settling or filtering out pollutants.

- Metal Management may consider diverting runoff away from stockpiled areas via dikes, berms, containment trenches, culverts and/or surface grading; media filtration such as catch basin filters and sand filters; and, silt fencing; and, oil-water separators, sumps and dry adsorbents.

2.7.3 Covered or Indoor Scrap and Waste Material Stockpiles/Storage

Metal Management currently has limited scrap material storage (turnings and non-ferrous metal) under cover. When this type of storage occurs, Metal Management must minimize residual liquids and accumulated particulate matter, originating from scrap and recyclable waste materials stored indoors or under cover, from coming in contact with surface runoff. Metal Management should consider the following or equivalent measures:

- Good housekeeping measures, including the use of dry absorbent or wet vacuum cleanup methods, to collect, handle, store, and dispose or recycle residual liquids originating from recyclable containers, e.g., beverage containers, paint cans, household cleaning products containers, etc.

- Prohibiting the practice of allowing wash water from tipping floors or other processing areas from discharging to any portion of a storm sewer system.

- Disconnecting or sealing off all existing floor drains connected to any portion of the storm sewer system.

2.7.4 Scrap and Recyclable Waste Processing Areas

Measures and controls to minimize surface runoff from coming in contact with scrap processing equipment are detailed in Section 3.0 and the table set in Appendix B. If storm water is polluted, Metal Management should consider employing the following additional BMPs or equivalent measures: diversion structures such as dikes, berms, culverts, containment trenches, elevated concrete pads, grading to minimize contact of storm water runoff with outdoor processing equipment; oil-water separators, sumps, or equivalent, in processing areas that are potential sources of residual fluids and grease; permanent or semi-permanent covers, or other similar measures; retention and detention basins or ponds, sediment traps or vegetated swales and strips, to facilitate settling or filtering out of pollutants in runoff from processing areas; or media filtration such as catch basin filters and sand filters.

3.0 INVENTORY OF POTENTIAL POLLUTANT SOURCES AND CORRESPONDING BEST MANAGEMENT PRACTICES

EPA MSGP 2008 5.1.3: ***Summary of Potential Pollutant Sources.*** You must document areas at your facility where industrial materials or activities are exposed to storm water and from which allowable non-storm-water discharges are released. *Industrial materials or activities* include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and waste products. *Material handling activities* include, but are not limited to: the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product.

Tables B-1 through B-5 in Appendix B provides an inventory of oil storage containers and other sources of potential pollutants. These potential pollutant sources include aboveground storage tanks, mobile/portable tanks, non-storm-water discharges, miscellaneous outdoor storage, and material handling activities.

- Table B-1, Facility Oil Storage and Potential Pollutant Sources Inventory — Aboveground Storage Tanks
- Table B-2, Facility Oil Storage and Potential Pollutant Sources Inventory — Mobile / Portable Tanks
- Table B-3, Facility Oil Storage and Potential Pollutant Sources Inventory — Non-Storm-Water Discharges
- Table B-4, Facility Oil Storage and Potential Pollutant Sources Inventory — Miscellaneous Outdoor Storage
- Table B-5, Facility Oil Storage and Potential Pollutant Sources Inventory — Material Handling Activities

The tables describe the type of material potentially exposed to storm water, the type and location of storage, flow direction, existing structural and nonstructural controls, and existing and needed BMPs.

3.1 Best Management Practices

USEPA emphasizes the implementation of pollution prevention measures and BMPs that reduce possible pollutant discharges at the source. Source reduction measures include, among others, preventive maintenance (PM), chemical substitution, spill prevention, good housekeeping, training, and proper materials management. Where such practices are not appropriate to a particular source or do not effectively reduce pollutants in storm water discharges, USEPA supports using source control measures and BMPs such as material segregation or covering, water diversion, and dust control. Like source reduction measures, source control measures and BMPs are intended to keep pollutants out of storm water. The remaining classes of BMPs, which involve recycling or storm water treatment, allow reusing storm water or attempting to lower pollutant concentrations before discharge.

BMPs are to be implemented to the MEP. Due to changing technology, MEP is an ever-changing goal. The SWPP Team will continue to review activities at Sims Metal Management to determine what additional BMPs should be implemented at the facility. Additional BMP needs could result from changes in activities performed in the building or outside areas. Personnel changes may result in some of the items on the existing BMP lists moving to the implementation BMP lists, if training is not performed regularly. Some of the recommended BMPs are structural (requiring construction), while others are nonstructural (source control). The SWPP Team will review the recommended structural BMPs and provide an implementation time frame. Nonstuctural BMPs can be implemented more easily, while structural BMPs require funding and a construction timetable.

The following is a list of general BMPs implemented universally throughout the facility:

- Improving operation and maintenance of machinery and processes.
- Maintaining current chemical and waste material inventory.
- Labeling all containers indicating name, type of substance, and handling hazards associated with that material.
- Maintaining well-organized work areas.
- Inspecting storage areas and properly removing and disposing of potential pollutants.
- Adhering to maintenance and inspection programs required at site.
- Training employees about good housekeeping practices and storm water pollution prevention.
- Maintaining records and properly reporting incidents.
- Reporting all spills to a single contact, the General Manager.

- Good housekeeping procedures applied throughout the facility.

- Minimizing exposure of pollutant sources to rainfall and/or runoff.

    — using grading, berming, or curbing to prevent runoff of contaminated flows and diverting run-on away from these areas.

    — locating materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confining storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas).

    — cleaning up spills and leaks promptly using dry methods (e.g., absorbents) to prevent pollutant discharges.

    — using drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible.

    — using spill/overflow protection equipment.

    — draining fluids from equipment and vehicles before onsite storage or disposal.

    — performing all cleaning operations indoors, under cover, or in bermed areas to prevent runoff and run-on and capture any overspray.

    — ensuring that all wash water drains to a proper collection system (i.e., not the storm water drainage system).

    — ensuring vehicles or equipment maintenance is performed under a roof whenever possible.

- Proper security measures throughout the facility.

EPA MSGP 2008 2.1.2.1: ***Minimizing Exposure.*** You must minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff by either locating these industrial materials and activities inside or protecting them with storm resistant coverings (although significant enlargement of impervious surface area is not recommended).
Note: Eliminating exposure at all industrial areas may make the facility eligible for the 40 CFR 122.26(g) "No Exposure" exclusion.

- Good housekeeping (required by ARR00) is practiced by keeping areas that may contribute pollutants to storm water discharges in a clean, orderly manner. Particular attention is paid to areas where materials are stockpiled or handled, storage areas, liquid storage tanks, and loading/unloading areas.

- Spill kits are readily available for all liquid storage areas. The kits are clearly labeled and easily accessible.

- Floatable debris is intercepted before storm water is discharged. Small windblown metal pieces are kept inside to prevent them from leaving in the storm water as floatable debris.

3.2 Scrap Metal Recycler BMPs

Sector N of MSGP 2008 has special BMP guidance for scrap and waste recycling facilities that receive, process and provide wholesale distribution of ferrous and nonferrous metals. As stated in Section 2.8, these BMPs not required as a part of ARR00. This guidance is included in the SWPPP because it meets the intent of ARR00 to set management practices at the site to prevent pollution. Nationally, these BMPs are typically used at facilities like Sims Metal Management and they should be considered the industry standard. These BMPs are included in the following subsections and have been incorporated into recommended BMPs, as needed, in the Facility Potential Pollutant Sources Inventory in Appendix B.

3.2.1 Inbound Recyclable and Waste Material Control Program

Minimize the chance of accepting materials that could be significant sources of pollutants by inspecting inbound recyclables and waste materials. The following are some control measure options: (a) provide information and education to suppliers of scrap and recyclable waste materials on draining and properly disposing of residual fluids (e.g., from vehicles and equipment engines, radiators and transmissions, oil-filled transformers, and individual containers or drums) and removing mercury switches from vehicles before delivery to your facility; (b) establish procedures to minimize the potential of any residual fluids from coming into contact with precipitation or runoff; (c) provide training targeted for those personnel engaged in inspecting and accepting inbound recyclable materials; and (d) establish procedures to ensure that liquid wastes, including used oil, are stored in materially compatible and non-leaking containers and are disposed of or recycled in accordance with the Resource Conservation and Recovery Act.

Sims Metal Management's inbound recyclable and waste material control program has the following components:

Supplier Notification Program

When contracting with new companies to receive scrap metal, ensure that contracts state that Sims Metal Management requires all material to be drained of residual fluids. Notify current suppliers which scrap materials will not be accepted at the facility or will be accepted only under certain conditions.

Inspection Component

Recyclable and waste material inspections will be conducted when a shipment of scrap metal arrives at Sims Metal Management to minimize the likelihood of receiving materials that may be significant pollutant sources to storm water discharges.

Educational Component

Sims Metal Management will use the BMP handouts in Appendix E to educate clients to minimize pollutants on materials shipped in provided roll-off bins to Sims Metal Management. This information will encourage scrap and recyclable waste materials suppliers to drain residual fluids, whenever applicable, before arriving at the facility.

Training Component

As detailed in Section 6.0, employees will be trained annually regarding inspecting and accepting inbound recyclable materials.

3.2.2 Outdoor Scrap and Waste Material Stockpiles/Storage

Table B-4 in Appendix B details all outdoor storage and describes those measures and controls used to minimize contact of storm water runoff with stockpiled materials, processed materials, and non-recyclable wastes. The facility's inbound recyclable and waste material control program is the primary BMP for the outdoor storage areas. Non-ferrous storage is kept under cover. Sims Metal Management should consider the following or equivalent measures:

- Using permanent or semi-permanent covers to protect stockpiled materials where such measures are reasonable and appropriate.

- Using sediment traps, vegetated swales and strips, catch basin filters, silt fencing and sand filters to facilitate settling or filtering out pollutants.

- Diverting runoff away from stockpiled areas via dikes, berms, containment trenches, culverts, and/or surface grading.

- Installing OWSs and sumps, and using dry absorbents for areas where potential sources of residual fluids are stockpiled (e.g., automobile engine storage areas).

3.2.3 Covered or Indoor Scrap and Waste Material Stockpiles/Storage

Sims Metal Management has ferrous and non-ferrous metal turnings, non-ferrous scrap metal and sorting operations under cover. Sims Metal Management must minimize residual liquids and accumulated particulate matter originating from scrap and recyclable waste materials stored indoors or under cover from coming in contact with surface runoff. Sims Metal Management should consider the following or equivalent measures:

- Good housekeeping measures, including using dry absorbent or wet vacuum cleanup methods to collect, handle, store, and dispose of or recycle residual liquids originating from recyclable containers (e.g., beverage containers, paint cans, household cleaning products containers, etc.).

- Prohibiting the practice of allowing wash water from tipping floors or other processing areas from discharging to any portion of a storm sewer system.

- Disconnecting or sealing off any existing floor drains connected to any portion of the storm sewer system.

3.2.4 Scrap and Recyclable Waste Processing Areas

Minimize surface runoff from coming in contact with scrap processing equipment. Pay attention to operations that generate visible amounts of particulate residue (e.g., shredding) to minimize the contact of accumulated particulate matter and residual fluids with runoff (i.e., through good housekeeping, PM, etc.). The following list describes some control measure options:

- Regularly inspect equipment for spills or leaks and malfunctioning, worn, or corroded parts or equipment.

- Establish a PM program for processing equipment.

- Use dry absorbents or other cleanup practices to collect and dispose of or recycle spilled or leaking fluids or use mercury spill kits for spills from stored mercury switches.

3.3 Non-Storm-Water Discharge Management

EPA MSGP 2008 1.1.3: ***Allowable Non-Storm-Water Discharges.*** You must eliminate non-storm-water discharges not authorized by an NPDES permit. The following are the non-storm-water discharges authorized under this permit, provided the non-storm-water component of your discharge is in compliance with Part 2.1.2.10: Discharges from fire-fighting activities; Fire hydrant flushings; Potable water, including water line flushings; Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids; Irrigation drainage; Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling; Pavement wash waters where no detergents are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed); Routine external building washdown that does not use detergents; Uncontaminated ground water or spring water; Foundation or footing drains where flows are not contaminated with process materials; and Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains).

The SWPPP includes a certification (page ii) that storm water discharges have been tested or evaluated for the presence of non-storm-water discharges. No discharges from the site are permitted, except the allowable non-storm-water discharges listed in the text box to the right.

The only potential non-storm-water at the site is generated when washing cranes and other heavy equipment is occasionally necessary. Washing vehicles is occasionally needed also. For details, refer to Table B-3.

Washing equipment is permitted as long as no wash water discharges from the property and no detergents are used. The following BMPs are used to prevent non-storm-water discharges from equipment washing:

- Equipment will be washed or steam cleaned by creating a pooling area around the equipment to retain the discharges.
- Any sheen observed will be cleaned using adsorbent materials before percolating into site soils.

ARR00, Act 472, Part 1.7
Allowable Non-Storm-Water Discharges:
- Discharges from fire-fighting activities
- Fire hydrant flushing
- Potable water sources including waterline flushings
- Runoff from irrigation using non-process water
- Landscape watering provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling
- Routine external building washdown which does not use detergents
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material have been removed) and where detergents are not used
- Air compressor condensate
- Steam condensate
- Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids (such as the discharge of thawed condensate from the surface of liquid nitrogen tanks stored outdoors)
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowndown or drains)
- Uncontaminated ground water or spring water
- Foundation or footing drains where flows are not contaminated with process materials such as solvents
- Excavation dewatering
- Non-process water used for dust suppression on roads

- If a degreaser-type detergent must be used, the wash water cannot be discharged under ARR00. Sims must use barriers and vacuum trucks to prevent wash water from discharging from the site or into site soils.

3.4 Preventive Maintenance Program

EPA MSGP 2008 2.1.2.3: ***Maintenance*****.** You must regularly inspect, test, maintain, and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in storm water discharged to receiving waters. You must maintain all control measures that are used to achieve the effluent limits required by this permit in effective operating condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel appropriately trained). If you find that your control measures need to be replaced or repaired, you must make the necessary repairs or modifications as expeditiously as practicable.

The PM program at Sims Metal Management will use the quarterly inspection program, detailed in Section 5.0, to trigger work orders for potential pollutant sources. In addition, the following equipment has PM schedules:

- Cranes: Weekly and Monthly PM

ARR00, Part 4.6.6.4, Preventive Maintenance
A preventive maintenance program shall involve inspection and maintenance of storm water management devices (cleaning oil/water separators, catch basins, etc.), as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to waters, and ensuring appropriate maintenance of such equipment and systems.

- On unattended hydraulic reservoirs over 150 gallons capacity, install protection devices such as low-level alarms or equivalent devices, or secondary containment that can hold the entire reservoir volume.

- Use containment or diversion structures such as dikes, berms, culverts, trenches, elevated concrete pads, and grading to minimize contact of storm water runoff with outdoor processing equipment or stored materials.

- Use OWSs or sumps.

- Use permanent or semi-permanent covers in processing areas where there are residual fluids and grease.

- Use retention or detention ponds or basins; sediment traps, and vegetated swales or strips (for pollutant settling and filtration).

- Use catch basin filters or sand filters.

3.2.5 Spill Prevention and Response Procedures

Sims Metal Management should consider installing alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break. Alternatively, a secondary containment system capable of holding the entire contents of the reservoir plus room for precipitation can be used. Use a mercury spill kit for any release of mercury from switches, anti-lock brake systems, and switch storage areas.

4.0 ANALYSIS OF HISTORICAL AND POTENTIAL POLLUTANTS

4.1 Sampling Data

EPA MSGP 2008 5.1.3.6: ***Sampling Data.*** You must summarize all storm water discharge sampling data collected at your facility during the previous permit term.

No historical storm water sampling has been conducted at the facility.

4.2 Pollutants

EPA MSGP 2008 5.1.3.2: ***Pollutants.*** A list of the pollutant(s) or pollutant constituents (e.g., crankcase oil, zinc, sulfuric acid, and cleaning solvents) associated with each identified activity. The pollutant list must include all significant materials that have been handled, treated, stored, or disposed, and that have been exposed to storm water in the 3 years prior to the date you prepare or amend your SWPPP.

The facility's potential pollutant sources inventory is presented in Appendix B. Table 4-1 presents the facility's associated pollutant risks.

Table 4-1
Risk Identification and Summary of Potential Pollutant Sources

	Oil and Grease	Organic Material/TSS	RCRA Metals	Oxygen Demand
Diesel fuel storage	X	X		X
Hydraulic oil storage	X	X		X
Scrap metal exposed to rain	X	X	X	X
Scrap metal and garbage roll-off bins	X	X	X	X
Heavy equipment operation	X	X		X

Notes:
TSS = Total Suspended Solids
RCRA = Resource Conservation and Recovery Act

4.3 Discharges to Water Quality Impaired/Water Quality Limited Waters

ARR00, Documentation of Permit Eligibility Related to the 303 (d) list (Impaired Water Bodies) and Total Maximum Daily Loads (TMDL). The SWPPP should include information on whether or not the storm water discharges from the facility enters a water body that is on the most recent 303 (d) list or with an approved TMDL. If the storm water discharge does enter a water body that is on the most recent 303(d) list or with an approved TMDL, then the SWPPP should address the following items: (a) document that the pollutant(s) for which the waterbody is impaired is not present at the facility, and retain documentation of the finding with the SWPPP; (b) incorporate into the SWPPP any additional BMPs needed to prevent to the maximum extent possible exposure to storm water of the pollutants for which the waterbody is impaired and to sufficiently protect water quality. Please note that the Department will be reviewing this information. If it is determined that the facility will discharge to an impaired water body, then the Department may require additional requirements."; (c) identification of measures taken by the facility to ensure that its discharge of pollutants from the site is consistent with the assumptions and allocations of the TMDL; and (d) If a specific numeric wasteload allocation has been established that would apply to the facility's discharges, the operator must incorporate that allocation into its SWPPP and implement necessary steps to meet that allocation and implement necessary steps to meet that allocation. Please note that the Department will be reviewing this information. If it is determined that the facility will discharge to a TMDL, then the Department may require additional BMPs.
If the Department determines during the review process that the facility will be discharging to a receiving water that is on the most recent 303 (d) list or with an approved TMDL, then the Department will notify the applicant to include additional Best Management Practices in the SWPPP.

Bayou Two Prairie, the receiving water body for the facility's discharges, is on the "303(d) list", a list that details the water quality impaired/water quality limited water bodies in Arkansas. There is no Total Maximum Daily Load (TMDL) for siltation or metals for Bayou Two Prairie; however, ARR00 could require storm water monitoring in the future if:

(1) The water body has a wasteload allocation for a specific parameter(s) established by a TMDL.

(2) ADEQ has reason to believe the specific parameter(s) is present at the facility and not subject to controls consistent with the implementation of TMDL plan.

Periodically, the facility should go to the following Web site to ensure that new pollutants are not added to the list that would require compliance with this section:

http://www.adeq.state.ar.us/poa/pa/tmdl_sum.asp

ENSAFE

5.0 STORM WATER INSPECTION AND EVALUATION PROGRAM

ARR00 requires developing and implementing a storm water inspection and evaluation program. The Sims Metal Management program will include quarterly facility inspections, quarterly visual outfall examinations, semi-annual analytical monitoring, and an annual comprehensive site compliance evaluation.

The objectives of this program are as follows:

- Demonstrate compliance with the permit.
- Demonstrate compliance with implementing the SWPPP.
- Measure the effectiveness of BMPs in eliminating pollutants in industrial storm water discharges.

Appendix C contains the Quarterly Facility Inspection Checklist Form, Inspection Checklist Corrective Action Form, Non-Storm-Water Discharge Certification Form, Description of Exposed Materials Form (for additional items in the future), and the ADEQ Industrial Storm Water General Permit (ARR000000) Annual Report Form for Storm Water Pollution Prevention Plan Evaluation. Inspections of areas and equipment are documented, and inspection records can be maintained in Appendix G.

5.1 Quarterly Facility Inspections

ARR00, SWPPP / Description of Evaluations and Inspections, Part 4.6.10.1 ***Visual Site Inspections.*** Qualified facility personnel shall be identified to conduct routine facility inspections of all areas of the facility where industrial materials or activities are exposed to storm water, all storm water control measures used to comply with this permit, and storm water outfalls (if accessible) for the presence of floating materials, visible sheen, discoloration, turbidity, odor, etc. Inspections should be performed not less than four (4) times a year. At least one of the four required inspections must be conducted during a period when a storm water discharge is occurring. One inspection shall check for the presence of non-storm-water discharges, such as domestic wastewater, non-contact cooling water, or process wastewater (including leachate), to the storm water drainage system that are not authorized under this general permit**.** This shall be done preferably during dry weather, when it is easier to find non-storm-water discharges. If a non-storm-water discharge is discovered, the Permittee shall notify ADEQ and eliminate the illicit discharge within 30 days. The permittee must document the findings of each visual inspection performed and maintain this documentation onsite with the SWPPP. At a minimum, documentation of each site inspection must include: date of inspection, personnel making the inspection, major observations, and a summary of actions that need to be taken as a result of the inspection.

ARR00 requires facility equipment and material-handling area inspections for evidence of pollutants entering the drainage system. Storm water must be free from (1) debris, oil, scum, and other floating materials, other than in trace amounts; (2) eroded soils and other materials that will settle to form objectionable deposits in receiving waters; (3) suspended solids, turbidity, and color at levels inconsistent with the receiving waters; and (4) substances in concentrations that would cause violation of state water quality criteria in the receiving waters.

According to the general storm water permit (ARR00), qualified facility personnel (as designated in Table 1-2) must perform quarterly inspections of areas where industrial materials, equipment, or activities are exposed to storm water at Sims Metal Management. **At least one of the four required inspections must be conducted during a period when a storm water discharge is occurring and at least one of the four required inspections must be conducted during dry weather to check for non-storm water discharges.** Records of inspections shall be maintained (using forms provided in Appendix C), and follow-up procedures shall be implemented to ensure appropriate actions are taken in response to the inspections.

Inspections of areas and equipment are documented and inspection records can be kept in Appendix G. These inspection reports include date, time, name of inspector, weather conditions, and follow-up action needed. Before each inspection, the SWPPP and previous inspection reports will be reviewed to ensure that adequate response and corrective actions have been taken in previous inspections.

Ongoing inspections of material-handling areas and equipment that could contribute pollutants to the drainage system are recommended. Qualified personnel will inspect material handling areas and equipment each workday for evidence of, or the potential for, pollutants entering the drainage system. Necessary adjustments, replacements, maintenance, and repairs will be made as soon as feasible, with precautionary measures taken promptly to avoid or halt the entrance of pollutants into the drainage system.

All areas exposed to precipitation at Sims Metal Management are visually inspected for evidence of pollutants entering, or the potential for pollutants to enter, the drainage system. Measures to reduce pollutant loadings are evaluated to determine whether they are adequate and properly implemented or whether additional control measures are needed. Structural storm water management measures required under this section are observed to ensure that they are operating correctly. Visual inspections will also be performed to determine equipment needed to implement the plan, such as spill response equipment.

5.2 Visual Outfall Examination

One of the quarterly facility inspections must include visual outfall examinations during a storm event in order to observe storm water discharges for obvious industrial storm water pollution such as color, lack of clarity, floating solids, settled solids, suspended solids, foam, odor and oil sheens. As part of the inspection, storm water should be collected in a clean, clear jar and examined in a well-lit area. Should any of the objectionable characteristics described above must be observed, an investigation of the potential pollution sources of pollution upstream from the sample location must be conducted and corrective action must be implemented. A visual examination form is included in the quarterly facility inspection form in Appendix C.

5.3 Non-Storm-Water Discharge Assessments and Certification

The Non-Storm-Water Discharge Assessment and Certification Form in Appendix C must be completed if any are non-storm-water discharges are found; otherwise, the original SWPPP Non-Storm-Water Certification on page ii will be in force.

5.4 Storm Water Monitoring

ARR00, SWPPP, Sampling Associated with Monitoring Requirements, Part 3.7.1, *Similar Outfalls*. When a storm water outfall may be similar to another outfall at the facility, i.e., similar effluents based on a consideration of industrial activity, significant materials and management practices, and activities within the area drained by the outfall, the permittee may sample only the discharge point with the highest concentration of pollutants. The SWPPP must include documentation on how these determinations were made and the description of each point of discharge; include the relative quantity (volume) of discharge and pollutants likely to be found. The documentation should include the following information:

a. Location of each of the similar outfalls;
b. Description of the general industrial activities conducted in the drainage area of each outfall;
c. Description of the control measures implemented in the drainage area of each outfall;
d. Description of the exposed materials located in the drainage area of each outfall that are likely to be significant contributors of pollutants to storm water discharges;
e. Why the outfalls are expected to discharge similar effluents.

ARR00 requires that Sims Metal Management monitor storm water discharge from representative Outfall #1 twice per calendar year. One sample must be taken in each of the following time frames: January-June and July-December. The industry monitoring requirements for scrap recycling facilities include the parameters listed in Table 5-1. As seen in Table 2-1, DB #2 has future growth for scrap metal which is similar land use to DB #1. Therefore, Outfall #2 will not require monitoring.

Table 5-1
TMSP Analytical Monitoring Requirements

Pollutants of Concern	Parameter Benchmark Value (mg/L)
Total Aluminum	0.75
Total Copper	0.0756
Total Iron	1.0
Total Lead	0.519
Total Zinc	0.684

Note:
mg/L = milligrams per Liter

A minimum of one grab sample must be taken from Outfall #1 within the first 30 minutes of a discharge resulting from a measurable storm event. If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, the sample must be collected as soon as practicable after the first 30 minutes and documentation must be kept with the SWPPP explaining why it was not possible to take samples within the first 30 minutes.

Table 5-1 shows the ARR000000 parameter benchmark values achieved by industries in this sector for the parameters listed. The benchmark concentrations are not effluent limitations. Therefore, a benchmark exceedance is not a permit violation. If, for any reason, Sims Metal Management's annual monitoring results exceed the parameter benchmark values, Sims Metal Management must investigate the cause and/or source of the elevated pollutant levels, review the SWPPP, and determine and document a corrective action plan to address the benchmark exceedance. The facility shall commence with the above process within 30 calendar days of the exceedance.

The Corrective Action Plan must contain the following: the results of the review; the corrective actions the permittee will take to address the benchmark excursion, including whether a SWPPP modification is necessary; and an implementation schedule including alternative methods for implementing existing site controls or methods for implementing additional effective site controls, if the site controls have not already been implemented.

The permittee must document the date that corrective actions are initiated and are completed or expected to be completed. This documentation must be included in an annual report and a copy retained onsite with the SWPPP. Once the corrective action plan has been determined, either:

a. Implement corrective action plan and make necessary modification, and then continue to perform monitoring until 4 additional monitoring periods for which the results do not exceed the benchmark has been completed, or

b. If the facility is still exceeding parameter benchmark values after six (6) monitoring periods, the facility may request in writing to monitor annually in lieu of bi-annual monitoring. This may only be requested for after the permittee has made a determination that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice to meet the technology-based effluent limits or are necessary to meet the water-quality-based effluent limitations. The permittee must document the rationale/justification for concluding that no further pollutant reductions are achievable. This justification must be submitted along with the written request. Facilities will be notified of the

Department's decision by letter. Until such time as the letter is received, the facility must continue to sample. If annual monitoring is granted, the approval letter and justification must be retained with the SWPPP on-site.

The determination as to which facilities will be required to perform toxicity testing will be made on a case-by-case basis based on available information and monitoring date. Sims Metal Management will be provided written notice by the Department if toxicity testing is required.

5.5 Annual Comprehensive Site Inspection and SWPPP Evaluation

EPA MSGP 2008 4.3.1 Scope of the Compliance Evaluation. Your comprehensive site inspections must cover all areas of the facility affected by the requirements in this permit, including the areas identified in the SWPPP as potential pollutant sources (see Part 5.1.3) where industrial materials or activities are exposed to storm water, any areas where control measures are used to comply with the effluent limits in Part 2, and areas where spills and leaks have occurred in the past 3 years. The inspections must also include a review of monitoring data collected in accordance with Part 6.2. Inspectors must consider the results of the past year's visual and analytical monitoring when planning and conducting inspections. Inspectors must examine the following: Industrial materials, residue, or trash that may have or could come into contact with storm water;
Leaks or spills from industrial equipment, drums, tanks, and other containers; Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site; Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas; and Control measures needing replacement, maintenance, or repair. Storm water control measures required by this permit must be observed to ensure that they are functioning correctly. If discharge locations are inaccessible, nearby downstream locations must be inspected. Your annual comprehensive site inspection may also be used as one of the routine inspections, as long as all components of both types of inspections are included.

The annual comprehensive site inspection is conducted to achieve a "big picture" look at the facility's permit compliance. The annual site comprehensive compliance evaluation will be conducted by reviewing all forms for the year: the quarterly facility inspections, quarterly oil storage container inspections, spill reports, non-storm-water evaluation reports, etc. The results of this evaluation will be used to update the SWPPP, if necessary.

This audit will also evaluate all current practices for reducing pollutants in storm water to determine whether these practices are effective, or if further controls are necessary. Structural control measures such as berms and piping will also be inspected and all necessary repairs or problems with these systems will be documented. Inspection areas shall include, at minimum, all storm water outfalls; exterior equipment; spill prevention and containment equipment; and all loading/unloading, storage, parking, and waste management areas.

Inspections must evaluate all areas contributing to storm water discharges associated with industrial activity to determine whether the SWPPP adequately minimizes pollutant loadings.

Inspections will also ensure that the SWPPP is properly implemented in accordance with the terms of ARR00 or if additional control measures are needed.

The evaluation must be reported on copies of the ADEQ Industrial Storm Water General permit (AR000000) Annual Report Form, included in Appendix C. The form must be submitted annually to the ADEQ, postmarked no later than the January 31. If the results of this evaluation cause the SWPPP to be updated, the form must be accompanied by the required SWPPP amendments. Reports shall be submitted to ADEQ at the following address:

Arkansas Department of Environmental Quality
Water Division, General Permits Section
5301 Northshore Dr.
North Little Rock, Arkansas 72118
Water.Permit.Application@adeq.state.ar.us

The signed report shall be retained as part of the SWPPP in Appendix G.

5.6 Record Keeping and Updating Requirements

The operator shall retain records of all storm water pollution prevention plans, all inspection reports required by this permit, and records of all data used to complete the Notice of Intent to be covered by this permit for a period of at least three years from the date the Notice of Termination letter is signed by the Department. This period may be extended by request of the Director at any time.

Sims Metal Management must give ADEQ at least a 10-day advance notice, if possible, before implementing any planned noncompliance with permit requirements. The ADEQ must be orally notified within 24 hours of any unanticipated noncompliance, and a written notice of noncompliance shall be provided within 5 working days of the time Sims Metal Management's knowledge of the circumstances. The written report shall describe the cause, exact dates and times, and steps taken or planned to reduce, eliminate, or prevent reoccurrence of the noncompliance.

Based upon the results of annual SWPPP evaluation, the description of potential pollutant sources and BMPs identified in the SWPPP should be revised and provide for implementing any changes in a timely manner. Sims Metal Management must amend the SWPPP whenever there is a change in design, construction, operation, or maintenance that may increase the discharge of pollutants to state waters or the SWPPP proves to be ineffective in controlling storm water pollutants. The SWPPP shall be submitted to the ADEQ along with the annual report and SWPPP evaluation form.

6.0 EMPLOYEE TRAINING

EPA MSGP 2008 2.1.2.9: *Employee Training.* You must train all employees who work in areas where industrial materials or activities are exposed to storm water, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team. Training must cover both the specific control measures used to achieve the effluent limits in this Part, and monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit. EPA recommends training be conducted at least annually (or more often if employee turnover is high).

A personnel training program is essential to effectively implementing the SWPPP. Personnel at all levels of responsibility will be trained in the components and goals of the NPDES program and the SWPPP. Training will address each component of the SWPPP; including how and why tasks are to be implemented. An example training presentation for Sims Metal Management facilities is included in Appendix F.

At a minimum, the following will be part of the training program:

1. Storm water control training appropriate to personnel job function shall be provided for truck drivers, scale operators, supervisors, buyers, and other operating personnel. A training and educational program for employees and suppliers shall be developed for implementing appropriate activities identified in the SWPPP.

2. Personnel will be trained to **identify and manage potential spills** that can occur from equipment and containers of petroleum products (i.e., gas, diesel fuel, oil, lubricating grease, hydraulic fluids, etc.). Employees must report incidents of leaking fluids to management.

3. All employees will be trained in **inspection and good housekeeping practices,** which include the following:

    - Proper scrap inspection, handling, and storage procedures

    - Regular vacuuming and/or sweeping

    - Cleaning up spilled materials

    - Identifying where brooms, vacuums, sorbents, foams, neutralizing agents, and other good housekeeping and spill response equipment are located

- Instruction on securing drums and containers

- Frequently checking for leaks and spills of various materials

4. All personnel will be trained to **recognize toxic and hazardous substances** at the facility. Personnel training will include the following:

   - Proper materials organization and storage

   - Appropriate identification of toxic and hazardous substances stored, handled, and produced onsite

   - Proper inspection and acceptance of inbound recyclable materials

Personnel refresher training will be held annually. New personnel will receive training within 30 days of assignment. All personnel training will be documented on the Training Sign-In Sheet found in and maintained as part of this SWPPP. The SWPP Team Leader will coordinate training for all SWPP Team members in the elements of the SWPPP. The SWPP Team members will coordinate training on the proper implementation of BMPs for all personnel within their jurisdiction. Training records will be kept in Appendix G.

7.0 SPILL PREVENTION AND RESPONSE

EPA MSGP 2008 2.1.2.4: *Spill Prevention and Response Procedures.* You must minimize the potential for leaks, spills and other releases that may be exposed to storm water and develop plans for effective response to such spills if or when they occur. At a minimum, you must implement: Procedures for plainly labeling containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides," etc.), that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur; Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling; Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of your storm water pollution prevention team (see Part 5.1.1); and Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available.

The tables in Appendix B detail the spill prevention and response for each container at Sims Metal Management. For completeness, the following basic spill response steps are included here.

In the event of a spill or release of oil, hazardous material, waste and/or other potential pollutant that could affect storm water quality, the following procedures shall be used:

- The person discovering the spill or leak shall immediately notify the Plant Manager and/or Plant Foreman via two-way radio or in person.

- If an oil, chemical, or hazardous waste spill occurs at any time other than the day shift, site personnel shall contact the General Manager.

The General Manager, with the assistance of environmental personnel, shall immediately assess the nature, amount, and areal extent of the release; and shall identify the source. The General Manager shall coordinate the mobilization of the necessary personnel and resources for the spill or leak cleanup. An area of isolation shall be established around the release to prevent personnel exposure. Only personnel involved in the emergency operations shall be allowed within the designated and marked area. Further actions will include:

- Ensuring that all required steps have been taken to clean up the spill event

- Reporting the spill to the appropriate regulatory agencies

- Reviewing and revising the measures and controls to prevent the recurrence of such an event

Leaks and spills should be contained and cleaned up as soon as possible. If malfunctioning equipment is responsible for the spill or leak, repairs should also be conducted as soon as possible. Cleanup procedures include using dry absorbent materials or other cleanup methods. Spill kits are maintained at appropriate locations at the facility. Used absorbent material will be disposed of properly.

8.0 MANAGEMENT OF RUNOFF

EPA MSGP 2008 2.1.2.6: ***Management of Runoff.*** You must divert, infiltrate, reuse, contain, or otherwise reduce storm water runoff, to minimize pollutants in your discharges. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to consult with EPA's internet-based resources relating to runoff management, including the sector-specific *Industrial Storm Water Fact Sheet Series*, (www.epa.gov/npdes/stormwater/msgp).

EPA MSGP 2008 2.1.2.3: ***Maintenance.*** You must regularly inspect, test, maintain, and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in storm water discharged to receiving waters. You must maintain all control measures that are used to achieve the effluent limits required by this permit in effective operating condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel appropriately trained). If you find that your control measures need to be replaced or repaired, you must make the necessary repairs or modifications as expeditiously as practicable.

The Sims Metal Management BMP Manual is in Appendix E. These BMPs may be used to troubleshoot new BMPs needed at the facility.

All BMPs that are in place will be maintained to ensure that they function as designed. BMPs should be designed to minimize pollution.

The term "minimize" means reduce and/or eliminate to the extent achievable using control measures (including BMPs) that are technologically available and economically practicable and achievable in light of best industry practice. Sims Metal Management should consider the following when selecting and designing control measures:

- Preventing storm water from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from storm water.

- Using control measures in combination is more effective than using control measures in isolation for minimizing pollutants in your storm water discharge.

- Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures.

- Minimizing impervious areas at your facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches) can reduce runoff and improve groundwater recharge and stream base flows in local streams, although care must be taken to avoid groundwater contamination.

- Attenuating flow using open vegetated swales and natural depressions can reduce in-stream impacts of erosive flows.

- Conserving and/or restoring of riparian buffers will help protect streams from storm water runoff and improve water quality.

- Using treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

8.1 Sediment and Erosion Control

EPA MSGP 2008 2.1.2.5: *Sediment and Erosion Control.* You must stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions you must take to meet this limit, you must place flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion and/or settle out pollutants. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to consult with EPA's internet-based resources relating to BMPs for erosion and sedimentation.

Site soils are discussed in detail in Section 2.3.1. Sims Metal Management must provide appropriate source control, stabilization measures, nonstructural and structural controls, or an equivalent for erosion and sediment control. Sims Metal Management should consider, either individually or in combination, the following erosion and sediment control measures (specific recommendations are included in the Facility Potential Pollutant Sources Inventory in Appendix B).

- Filtering or diversion practices, such as filter fabric fence, sediment filter boom, earthen or gravel berms, curbing, or other equivalent measure.

- Catch basin filters, filter fabric fence, or equivalent measure, placed in or around inlets or catch basins that receive runoff from scrap and waste storage areas, and processing equipment.

- Sediment traps, vegetative buffer strips, or equivalent, to remove sediment before discharge through an inlet or catch basin.

- Detention or retention basin or other equivalent structural control.

Use the BMP Manual in Appendix E as a resource when determining new BMPs to be used at the facility.

Any unstable areas on the site should be stabilized using erosion prevention techniques, such as seed and mulch. In addition, sediment control devices, such as silt fence and sediment ponds, should be used to prevent sediment from discharging to the nearby Bayou Two Prairie.

9.0 PERMIT AND SWPPP ADMINISTRATION

9.1 SWPPP Availability

EPA MSGP 2008 5.3: *SWPPP Availability.* You must retain a copy of the current SWPPP required by this permit at the facility, and it must be immediately available to EPA; a State, Tribal, or local agency approving storm water management plans; the operator of an MS4 receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) at the time of an onsite inspection or upon request. EPA may provide access to portions of your SWPPP to a member of the public upon request. Confidential Business Information (CBI) may be withheld from the public, but may not be withheld from those staff cleared for CBI review within EPA, USFWS, or NMFS.
EPA encourages you to post your SWPPP online and provide the website address on your NOI.

The SWPPP is available for review at the facility and is available digitally at the corporate office of Sims Metal Management.

ARR00 is included in Appendix D.

9.2 Required SWPPP Modifications

EPA MSGP 2008 5.2: *Required SWPPP Modifications.* You must modify your SWPPP whenever necessary to address any of the triggering conditions for corrective action in Part 3.1 and to ensure that they do not reoccur, or to reflect changes implemented when a review following the triggering conditions in Part 3.2 indicates that changes to your control measures are necessary to meet the effluent limits in this permit. Changes to your SWPPP document must be made in accordance with the corrective action deadlines in Parts 3.3 and 3.4, and must be signed and dated in accordance with Appendix B, Subsection 11. Part 3.2 most generally states that the SWPPP must be modified when construction or a change in design, operation, or maintenance at your facility significantly changes the nature of pollutants discharged in storm water from your facility, or significantly increases the quantity of pollutants discharged.

Sims Metal Management will update the SWPPP when there is a change at the facility that has a significant effect on the discharge or potential of pollutants from the facility.

9.3 Signature Requirements

EPA MSGP 2008 5.1.7: *Signature Requirements.* You must sign your SWPPP in accordance with Appendix B, Subsection 11, including the date of the signature.

Certifications and reports must be signed as follows:

For a corporation: by a responsible corporate officer. For purposes of this section, a responsible corporate officer means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (b) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

9.4 Record Keeping

EPA MSGP 2008 7.5: ***Record keeping.*** You must retain copies of your SWPPP (including any modifications made during the term of this permit), additional documentation requirements pursuant to Part 5.4 (including documentation related to corrective actions taken pursuant to Part 3), all reports and certifications required by this permit, monitoring data, and records of all data used to complete the NOI to be covered by this permit, for a period of at least 3 years from the date that your coverage under this permit expires or is terminated.

All records and information from the activities described in this SWPPP, including review documentation, inspection reports, training/briefing records, and monitoring reports, should be kept in Appendix G of this SWPPP and retained by the facility for at least 3 years from the date of sampling, measurement, evaluation, inspection, or reporting.

The SWPPP must be signed and retained for at least 3 years after the last plan modification or amendment and after coverage under this permit is terminated.

Sims Metal Management must give ADEQ at least a 10-day advance notice, if possible, before implementing any planned noncompliance with permit requirements. The ADEQ must be orally notified within 24 hours of any unanticipated noncompliance, and a written notice of noncompliance shall be provided within 5 working days of the time Sims Metal Management's knowledge of the circumstances. The written report shall describe the cause, exact dates and times, and steps taken or planned to reduce, eliminate, or prevent reoccurrence of the noncompliance.

Based upon the results of annual SWPPP evaluation, the description of potential pollutant sources and BMPs identified in the SWPPP should be revised and provide for implementation of any changes in a timely manner. Metal Management must amend the SWPPP whenever there is a change in design, construction, operation, or maintenance that may increase the discharge of pollutants to state waters or the SWPPP proves to be ineffective in controlling storm water pollutants. The SWPPP shall be submitted to ADEQ along with the annual report and SWPPP evaluation form.

SIMS METAL MANAGEMENT

CLEAN WATER ACT COMPLIANCE PLANS

LONOKE YARD
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

STORM WATER POLLUTION PREVENTION PLAN, MAY 2012

Appendix A Facility Diagrams

Appendix B Facility Oil Storage and Potential Pollutant Sources Inventory

Appendix C Example Forms

Appendix D Storm Water Permit

Appendix E Best Management Practices Manual

Appendix F Training Presentations

Appendix G Records

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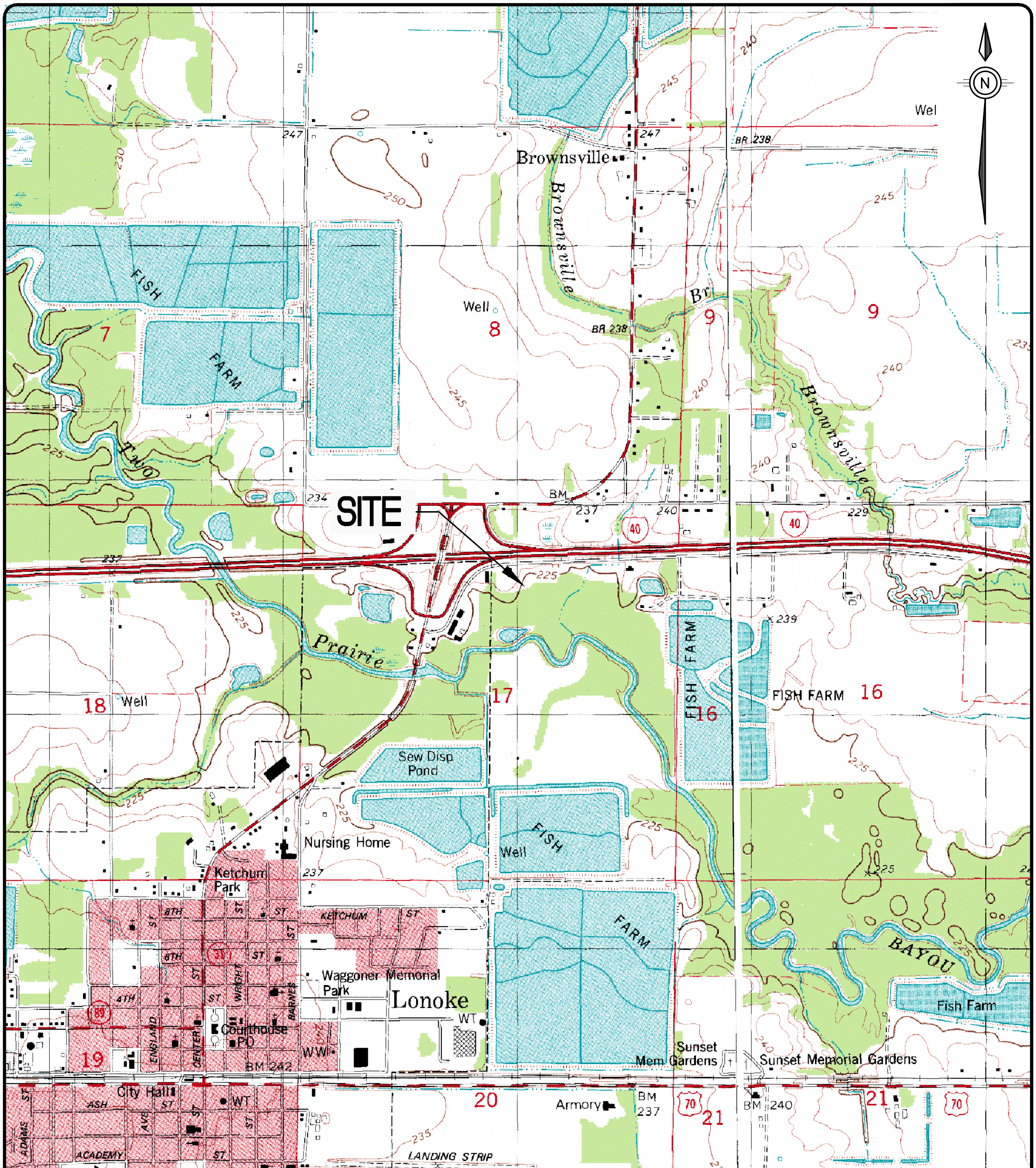

0 2000 4000

SCALE IN FEET

MAP SOURCE:
U.S.G.S. 7.5 MINUTE QUADRANGLE
LONOKE, ARKANSAS 1982
POCKET PRAIRIE, ARKANSAS 1982

FIGURE 1
U.S. GEOLOGICAL SURVEY TOPOGRAPHIC MAP
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

REQUESTED BY: S.TCHANG
DRAWN BY: BRONSON
DWG DATE: 05/09/12
DWG NO: 12024_B001

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AERIAL DATE: FEBRUARY 20, 2012

NOT TO SCALE

FIGURE 2
AERIAL PHOTOGRAPH
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

REQUESTED BY:	S.TCHANG
DRAWN BY:	BRONSON
DWG DATE:	05/09/12
DWG NO:	12024_B002

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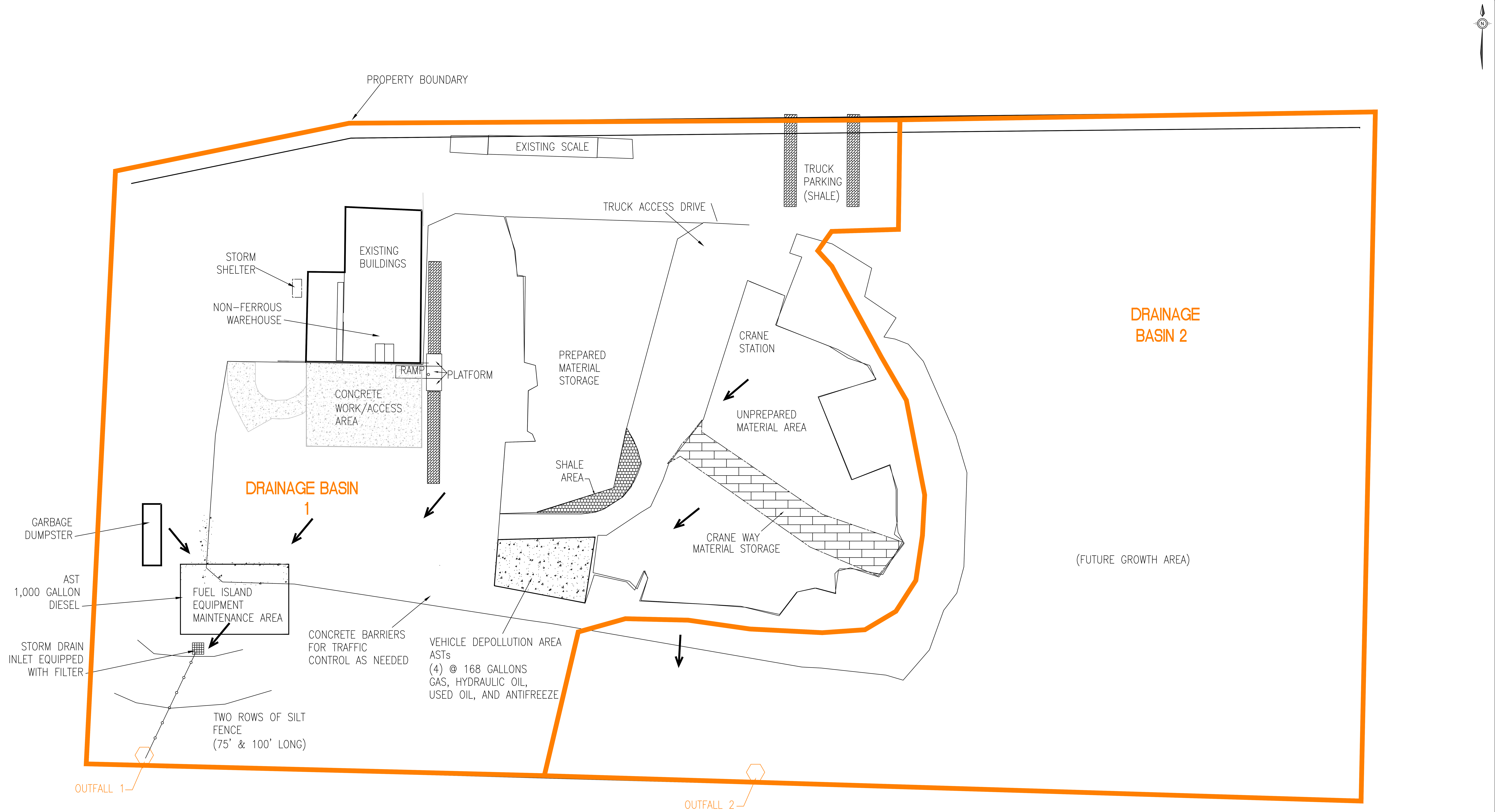

NOT TO SCALE

LEGEND
→ FLOW DIRECTION

SOURCE:
SIMS METAL MANAGEMENT

FIGURE 3
SITE MAP
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

REQUESTED BY: S.TCHANG
DRAWN BY: BRONSON
DWG DATE: 05/11/12
DWG NO: 12024_B003

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SIMS METAL MANAGEMENT

CLEAN WATER ACT COMPLIANCE PLANS

LONOKE YARD
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

STORM WATER POLLUTION PREVENTION PLAN, MAY 2012
Appendix A Facility Diagrams
Appendix B Facility Oil Storage and Potential Pollutant Sources Inventory
Appendix C Example Forms
Appendix D Storm Water Permit
Appendix E Best Management Practices Manual
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Table B-1
Facility Potential Pollution Sources Inventory
Aboveground Storage Tanks

Tank ID / Building Function / Building No.	Product Stored	Container Capacity (gal)	Container / Piping Material	Double-Walled Tank / Pipe	Year Installed	Good Engineering Practices	Type of Failure	Lighting / Fencing	CR / CA / F	Flow Direction and Distance / Receiver / Drainage Basin	Containment or Diversion Structure	Description of Key Best Management Practices / Deficiencies
AST 1	Diesel	1,000	Steel / Rubber hose	Y / N	2012	Clock gauge, pop-up interstitial gauge	Tank Rupture	Y / Y	>1,000 / >1,000 / NA	Southwest / DB 1	Double Walled Tank	Double Walled Tank / None

Notes:
AST = Aboveground Storage Tank
CR/CA/F = Secondary Containment Required (110%) in gallons /Secondary Containment Available in gallons /Freeboard in inches for open-topped dikes
DB = Drainage Basin
NA = Not Applicable
N = No
Y = Yes

Table B-2
Facility Potential Pollution Sources Inventory
Mobile / Portable Tanks

Tank ID / Building Function / Building No.	Product Stored	Container Capacity (gal)	Container / Piping Material	Double-Walled Tank / Pipe	Year Installed	Good Engineering Practices	Type of Failure	Lighting / Fencing	CR / CA / F	Flow Direction and Distance / Receiver / Drainage Basin	Containment or Diversion Structure	Description of Key Best Management Practices / Deficiencies
Vehicle Depolluting Station	Gas, Hydraulic Oil, Used oil, Antifreeze	4 @ 168	Steel / NA	N / N	UK	None	Rupture	Y / Y	>168 / >168 / NA	Southwest / DB 1	Steel Dike	Steel dike / None

Notes:
CR/CA/F = Secondary Containment Required (110%) in gallons /Secondary Containment Available in gallons /Freeboard in inches for open-topped dikes
DB = Drainage Basin
NA = Not Applicable
UK = Unknown
Y = Yes

Table B-3
Facility Potential Pollution Sources Inventory
Non-Storm-Water Discharges

Location / Building No.	Discharge	NPDES Permit Required (Y/N)	Permit No.	Required Analytical Sampling (list analytes)	Permit Exceedances (list analytes exceeding)	Description of Key Best Management Practices	Flow Direction and Distance / Receiver / Drainage Basin	Spill Kit Adequate and Nearby (Y/N)
In confined pervious area without any discharge from facility (create a pooling area)	Equipment wash water / steam cleaning discharges	N	NA	NA	NA	Washing cranes and other heavy equipment is occasionally necessary. Washing of equipment (without any chemicals) is permitted as long as no wash water discharges from the property. ▪ Equipment will be washed or steam cleaned be creating a pooling area around the equipment to retain the discharges. ▪ Any sheen observed will be cleaned using adsorbent materials before percolating into site soils. ▪ NO DISCHARGES FROM SITE ARE PERMITTED.	Pool locally / Into site soils or vacuumed / DB 1	Y

Notes:
DB = Drainage Basin
NA = Not Applicable
N = No
Y = Yes

Table B-4
Facility Potential Pollution Sources Inventory
Miscellaneous Outdoor Storage

Container Type	Location	Product Stored	Container Capacity	Container Material	Secondary Containment	Description of Key Best Management Practices / Deficiencies	Type of Failure	Flow Direction and Distance / Receiver / Drainage Basin	Pollution Risk	Spill Kit (Y/N)
NA	Throughout site	Scrap metal (Steel, tin, aluminum, copper etc.)	NA	NA	NA	All metal is fairly clean prior to arrival at the site. The grounds are cleaned by sweeping and magnets. Visual inspections are routinely conducted. Stained soils are excavated / None	Metal fines or oil on scrap metal entering storm water	Southwest / DB 1	Med	Y
Dumpsters	Throughout site	Scrap metal, garbage	Varies	Steel	None	Items placed inside dumpsters should be clean (no oil residue etc.) if no secondary containment or roof is practical. / Consider adding roof structures for dumpsters where practical. Company policy must be enforced that no liquids may be brought in peddler and bulk lanes. Heavy use dumpsters must be sealed and kept under roof.	Residue, liquids	Southwest / DB 1	Low	Y

Notes:
DB = Drainage Basin
N = No
NA = Not Applicable
Y = Yes

Table B-5 Facility Potential Pollution Sources Inventory Material Handling Activities							
Location / Building No.	**Material Handling Activity**	**Maximum Likely Potential Release Volume (gal) / Product or Potential Pollutant**	**Type of Failure**	**Description of Key Best Management Practices**	**Spill Kit Adequately Stocked and Within Reasonable Distance (Y/N)**	**Flow Direction and Distance / Receiver / Drainage Basin**	**Recommendations**
Tank Fueling Areas	Mobile equipment is fueled onsite	1 gallon / Diesel, Gasoline	Spill during transfer	Regular visual inspections. Block storm drains during loading and unloading activity. Use of drip pans.	Y	Southwest / DB 1	None
New and Used Oil Collection Areas	New and used oil collection	1 gallon / New, used oil	Spill during transfer	Regular visual inspections. Vendor oversight. Maximizing distance of activity from storm drain inlets.	Y	Southwest / DB 1	Use an enclosed oil pump system to evacuate oil from equipment. Excavate contaminated soils.
Ferrous and Non-ferrous Yards	Scrap metal loading and unloading/ Peddler and bulk	1 gallon / Diesel, used oil	Liquids are sometimes released during loading and unloading of accepted scrap items. In addition, metal fines could enter storm water from these areas.	Street sweeping, use of magnets and general housekeeping.	Y	Southwest / DB 1	Enforce no liquids policy and drain items before unloading.
Heavy Cut Areas	Scrap metal cutting	Small amounts / Metal fines	Torch welding equipment is utilized to cut scrap metal into pieces. Metal fines could enter storm water from this area.	Magnet, street sweeping	NA	Southwest / DB 1	Pave work areas and increase street sweeping activities.

Notes:

DB = Drainage Basin
N = No
NA = Not Applicable
Y = Yes

SIMS METAL MANAGEMENT

CLEAN WATER ACT COMPLIANCE PLANS

LONOKE YARD
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

Prepared for:

SIMS METAL MANAGEMENT

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MONTHLY AST ROUTINE IN-SERVICE INSPECTION CHECKLIST

Instructions: Use this form with the *Inspection Checklist Corrective Action Form*. If you check **U** for any item, use the tracking form to note the corrective action recommended, the person responsible for implementing the action, and the date implemented. This form meets the requirements of the monthly and annual inspections under STI SP001-04.

Date:_________________ Inspector:___________________________________

	S	U	NA	CAR	Comments
TANK _____________					
Leaks	☐	☐	☐	☐	____________
Pipe Connections	☐	☐	☐	☐	____________
Distortion	☐	☐	☐	☐	____________
Paint Condition	☐	☐	☐	☐	____________
Pitting and Corrosion	☐	☐	☐	☐	____________
Vapor Vent	☐	☐	☐	☐	____________
Emergency Vent	☐	☐	☐	☐	____________
Liquid-Level Gauge					
SECONDARY CONTAINMENT					
Containment structure present?	☐	☐	☐	☐	____________
Containment structure impermeable?	☐	☐	☐	☐	____________
Containment structure intact/sound?	☐	☐	☐	☐	____________
Debris / fluids absent?	☐	☐	☐	☐	____________
TANK _________________					
Leaks	☐	☐	☐	☐	____________
Pipe Connections	☐	☐	☐	☐	____________
Distortion	☐	☐	☐	☐	____________
Paint Condition	☐	☐	☐	☐	____________
Pitting and Corrosion	☐	☐	☐	☐	____________
Vapor Vent	☐	☐	☐	☐	____________
Emergency Vent	☐	☐	☐	☐	____________
Liquid-Level Gauge					
SECONDARY CONTAINMENT					
Containment structure present?	☐	☐	☐	☐	____________
Containment structure impermeable?	☐	☐	☐	☐	____________
Containment structure intact/sound?	☐	☐	☐	☐	____________
Debris / fluids absent?	☐	☐	☐	☐	____________
SPILL RESPONSE					
Spill response materials nearby?	☐	☐	☐	☐	____________
Spill response materials adequate?	☐	☐	☐	☐	____________
Emergency telephone number posted nearby?	☐	☐	☐	☐	____________

Legend:

AST	—	Aboveground Storage Tank	S	—	Satisfactory
U	—	Unsatisfactory	NA	—	Not applicable
CAR	—	Corrective Action Required			

MONTHLY DRUM STORAGE AREA AND SPILL KIT ROUTINE-IN-SERVICE INSPECTION CHECKLIST

Instructions: Use this form with the *Inspection Checklist Corrective Action Form*. If you check **U** for any item, use the tracking form to note the corrective action recommended, the person responsible for implementing the action, and the date implemented.

Date:________________ Inspector:__________________________________

DRUM / TOTE STORAGE AREA: ___________________________________

	S	U	NA	CAR	Comments
Secure?	☐	☐	☐	☐	________________
Aisle space adequate for drum movement?	☐	☐	☐	☐	________________
Debris / fluids absent?	☐	☐	☐	☐	________________
Area organized / orderly?	☐	☐	☐	☐	________________
Incompatible material segregated?	☐	☐	☐	☐	________________
Drum bung / cover in place?	☐	☐	☐	☐	________________
Drum free of bulges / upright?	☐	☐	☐	☐	________________
Condition sound (no corrosion, pitting, etc.)?	☐	☐	☐	☐	________________
Any signs of leaks?	☐	☐	☐	☐	________________
Drum contents identified on drum label?	☐	☐	☐	☐	________________

SPILL RESPONSE

	S	U	NA	CAR	Comments
Spill response materials nearby?	☐	☐	☐	☐	________________
Spill response materials adequate?	☐	☐	☐	☐	________________
Emergency telephone number posted nearby?	☐	☐	☐	☐	________________

SPILL RESPONSE EQUIPMENT (Absorbent Pads, Drain Covers, Shovels, etc.)

	S	U	NA	CAR	Comments
Spill response materials near each oil area?	☐	☐	☐	☐	________________
Material at each location should include:					
Absorbent Pads	☐	☐	☐	☐	________________
Absorbent Material (granular)	☐	☐	☐	☐	________________
Shovel	☐	☐	☐	☐	________________
Spill response materials adequate?	☐	☐	☐	☐	________________
Emergency telephone number posted nearby?	☐	☐	☐	☐	________________

Legend:

AST	—	Aboveground Storage Tank	S	—	Satisfactory
U	—	Unsatisfactory	NA	—	Not applicable
CAR	—	Corrective Action Required			

LOG FOR DRAINAGE OF DIKE BASINS/SECONDARY CONTAINMENT

Instructions: This log must be completed each time storm water is discharged from secondary containment. The storm water shall not be discharged without treatment if it has a visible sheen. Furthermore, any product in the secondary containment structure must be removed. Notify General Manager or designee immediately if any significant deficiencies are identified.

Industry Standard Consideration: NFPA 30-2000

Frequency: After each significant rain event

Date Of Draining Operation	Time Site Was Drained	Description of Tank/ Vault/ Secondary Containment Site	Name of Individual Inspecting Water Before Draining	Presence Of Sheen (X)		Signature Of Individual Draining Containment Site
				YES	NO	

Notes:

1 — product or sheen
API — American Petroleum Institute
NFPA — National Fire Protection Association

SPILL RESPONSE REPORT FORM				
REPORTER INFORMATION				
Reporter's Name Last First				
Reporter's Phone Number				
Company or Command				
Position				
Materials Released	☐ YES	☐ NO	TYPE:	QTY:
Time Call Received (Use 24 hour time)				
INCIDENT DESCRIPTION				
Source and/or Cause of Incident				
Date				
Time of Incident (Use 24 hour time)				
Incident Address/Location				
Type or Name of Materials Spilled				
Container Type				
Tank Capacity or Container Size (include units)				
Estimate Amount Lost				
Weather Conditions				
Material Released ☐ YES ☐ NO				
	Quantity Released	(include units)		
	Material Released into Water	☐ YES ☐ NO		
	Quantity Released into Water	(include units)		
RESPONSE ACTIONS				
Actions Taken to Control Incident				
Actions Taken to Clean up Incident				
IMPACT				
Number of injuries				
Number of deaths				
Evacuation(s) Required	☐ YES ☐ NO			
Number Evacuated				
Was There Any Damage	☐ YES ☐ NO			
Damage in Dollars (estimated)				
Medium Affected				
Additional Information Any information about the incident not recorded elsewhere in the report				
CALLER NOTIFICATIONS				
USEPA	☐ YES ☐ NO			
US Coast Guard	☐ YES ☐ NO			
AR Emergency Mgmt. Agency	☐ YES ☐ NO			
Fire Dept.	☐ YES ☐ NO			
Other (List)	☐ YES ☐ NO			

QUARTERLY FACILITY-WIDE ENVIRONMENTAL INSPECTION
(Use with AR forms, one must be during rainfall)

Item	Item	Date: N/A	Y	N	Comments/ Resolution of Problems
	Note: For any item answered "N", describe in the right hand column.				
SOLID WASTE STORAGE AREAS					
1	Are stains or loose materials/debris visible around Solid Waste Dumpsters?				
2	Is the Solid Waste within the Dumpsters properly contained (i.e., not overflowing, bin door secured)				
OUTFALL AREAS					
1	Are stored and spilled materials prevented from reaching inlets, pipes, or ditches?				
2	Are controls to minimize materials being carried by runoff to drainage ways (silt fences, screens over inlets and culverts, etc.), in good shape and operating properly?				
3	If outfalls leaving property are flowing during dry weather (check N/A if none are flowing), is flow due to permitted non-storm-water discharge?				
4	Are inlets, pipes, ditches, and ponds (check N/A if none) free of excess sediment, debris, raw materials (for example, asphalt, oils), oil sheen, and other possible contaminants?				
LOADING / UNLOADING AREAS					
1	Is appropriate lighting provided for nighttime operations?				
2	Are standard procedures posted in the loading area?				
3	Are there any chemical sheens or debris visible in storm water in these areas?				
4	Are absorbent materials and other spill response equipment kept nearby?				
VEHICLE PARKING AREAS					
1	Are there any chemical sheens or debris visible in storm water in these areas?				
2	Are spill kits located nearby to prevent spills from contacting storm water?				
BULK STORAGE AREAS					
1	Are there any cracks or breaks in secondary containment around bulk tanks?				
2	Any leaks or spills from the tanks or tank piping?				
SEDIMENT AND EROSION CONTROLS					
1	Is there any sediment or debris visible in storm water areas?				
2	Is there any soil erosion at the facility?				
CHEMICAL TRANSFERS, RAIL LINES, AND ACCESS ROADS					
1	Any spills or releases observed in chemical transfer areas, rail lines, or access roads?				
2	Are there any leaky hoses, hose fittings, or pumps in these areas?				
BEST MANAGEMENT PRACTICES					
1	Are Good Housekeeping measures sufficient?				
2	Are inspections conducted on a regular basis?				
3	Are employees trained on pollution prevention measures?				
4	Are spill cleanup materials readily available in adequate amounts?				
5	Are engineering controls working?				
6	Are Erosion Control measures sufficient?				
7	Are Spill Prevention and Response measures sufficient?				

CERTIFICATION: FACILITY EHS MANAGER SIGNATURE______________________________
DATE____

QUARTERLYFACILITY-WIDE ENVIRONMENTAL INSPECTION (cont'd.)
(Use with AR forms, one must be during rainfall)

Directions: Quarterly facility inspections must include visual outfall examinations in order to observe storm water discharges for obvious industrial storm water pollution such as color, lack of clarity, floating solids, settled solids, suspended solids, foam, odor and oil sheens. If feasible, the inspections should be conducted during or after storm events. As part of the inspection, storm water should be collected in a clean, clear jar and examined in a well-lit area. If any of the objectionable characteristics described above be observed, an investigation of the potential sources of pollution upstream from the sample location must be conducted and corrective action must be implemented. If no rain occurred, check "No Rain" but complete this form after visually inspecting the dry outfalls for signs of potential pollution.

Examination Date:___________________________Time:_______________ Rainfall (in inches):_____

Person conducting examination:____________________________________

Nature of Discharge: ☐ Rainwater runoff ☐ Snow melt ☐ No Rain

Outfall Number		
Visible flow or standing water		
Flow rate or quantity of standing water		
Color		
Odor		
Clear		
Floating objects		
Scum		
Suds		
Oily Sheen		
Sludge		
Staining		

Enter any additional comments on back of page.

QUARTERLY FACILITY-WIDE ENVIRONMENTAL INSPECTION (cont'd)
(Wet or Dry Season)

Inspector ______________________________
Year ______________________________
Date ______________________________

Facility Modifications

a. Have new buildings or yard areas been constructed? ☐ No ☐ Yes
b. Has the storm water drainage system been modified? ☐ No ☐ Yes

A "yes" answer to any of the above questions requires the site map and SWPPP be modified to incorporate the changes.

Check when changes complete	Map	Plan
	☐ ___________ date	☐ ___________ date
	☐ ___________ initials	☐ ___________ initials

Potential Pollutant Sources

Potential pollutants have been verified? ☐ No change ☐ Additions/deletions

Check when changes made to plan ☐ _____________ date ___________ initials

Verification of Pollution Controls

	Effectiveness		
	Excellent	Good	Inadequate
Housekeeping (inspect yard): outside storage areas	☐	☐	☐
Preventive maintenance (inspect records)	☐	☐	☐
Drainage system maintenance (inspect devices and records): catch basins, etc.	☐	☐	☐
Hazardous chemical containment	☐	☐	☐
Debris and sediment control	☐	☐	☐
Solid Waste Storage	☐	☐	☐
Waste chemical storage	☐	☐	☐
Employee training	☐	☐	☐
Other ______________________________	☐	☐	☐

Conditions requiring a response:

Check when forms have been updated and moved to next Appendix ☐ ______ date ______ initials
Check when response complete and attach documentation. ☐ ______ date ______ initials

INSPECTION CHECKLIST CORRECTIVE ACTION FORM

Instructions: **Use this tracking form in conjunction with** *Tank and Drum Inspection Checklists*

Container ID/ Description	Location	Capacity (gallons)	Status S/U	Corrective Action(s) Recommended	Responsible Person/Dept.	Date Implemented

IMPLEMENTATION OF NEW BEST MANAGEMENT PRACTICES

Instructions: Develop a schedule for implementing each newly selected BMP. Briefly describe each BMP, the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.

BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Req'd Action	Person Responsible for Action(s)	Notes

PREVENTATIVE MAINTENANCE INSPECTION LOG FACILITY NAME: ____		
DATE	INSPECTOR	ACTIONS REQUIRED

NON-STORM-WATER DISCHARGE ASSESSMENT AND CERTIFICATION			Completed by:____ Title: ____ Date: ____		
Date of Test or Evaluation	**Outfall Directly Observed During the Test (identify as indicated on the site map)**	**Method Used to Test or Evaluate Discharge**	**Describe Results from Test for the Presence of Non-Storm-Water Discharge**	**Identify Potential Significant Sources**	**Name of Person Who Conducted the Test or Evaluation**

CERTIFICATION

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

A. Name & Official Title (type or print)	B. Area Code and Telephone No.
C. Signature	D. Date Signed

TRAINING SIGN-IN SHEET

My signature below certifies that I have attended the Storm Water Pollution Prevention Plan Training Class. Also, I have read the sections of the plan that apply to my job duties and clearly understand my responsibilities concerning the prevention of potential pollutants entering storm drainage systems and this facility's dedication to the quality of water which exits the facility.

DATE	PERSONNEL NAME	SIGNATURE	JOB TITLE

Arkansas Department of Environmental Quality (ADEQ)
5301 Northshore Drive
North Little Rock, AR 72118-5317

Industrial Stormwater General Permit (ARR000000) Annual Report Form

Permit No. ARR-00 _ _ _ _ _	
Permittee Name:	
Facility Name:	
Facility Physical Address (not mailing address):	
Facility City:	Zip Code:

Facility Contact Name:	Title:
Facility Contact Phone Number	Facility Contact Email:
Reporting Period: January 1st to December 31st _____ (Year)	

This Form may be used to submit your annual report to ADEQ. All facilities must submit a signed annual report each year on or before **January 31st**. DMRs for each monitored outfall must be submitted with the annual report**.** Retain a copy of your submitted report onsite.

1. Benchmarks Exceeded

Did the facility exceed the benchmark for any parameter during the previous calendar year (Jan 1st – Dec 31st)? **Note**: If a parameter was sampled at a discharge point more than once then all the samples needs to be reported and evaluated individually:

Yes ☐ **- Complete Sections 2, 3, 4, 5 and 6.**

No ☐ **- Complete Section 2, 3, 5 and 6.**

Include any additional comments here:

2. Evaluations and Inspections

Facilities are required to complete a minimum of 4 visual site inspections and 1 comprehensive site compliance evaluation per year. Please include the dates of these inspections below. If more than the minimum number of inspections and evaluations were completed, please just include dates for 4 visual site inspections and 1 comprehensive site compliance evaluation.

Visual Site Inspection #1 Date	
Visual Site Inspection #2 Date	
Visual Site Inspection #3 Date	
Visual Site Inspection #4 Date	
Comprehensive Site Compliance Evaluation Date	

3. Storm Water Problems Identified At the Facility

Instructions: Based on the best available information, briefly describe any potential or actual stormwater pollution problem(s) you identified during the previous calendar year (Jan 1st – Dec 31st) comprehensive site evaluation and quarterly visual site inspections. • Sources of available information may also include (but may not be limited to): SWPPP reviews, audits made by consultants or providers of technical assistance, inspection reports or other notification made by federal/state/local authorities, visual observations, and/or your facility's monthly site inspections (self-inspections). • For each problem identified, provide the date you discovered the problem (estimate if necessary). • Do not include problems discovered through stormwater sampling. This information is covered in Section 4. • **If no problems were identified, put N/A for Not Applicable.**
Date Problem Discovered: **Describe the Problem:**
Date Problem Discovered: **Describe the Problem:**
Date Problem Discovered: **Describe the Problem:**
Date Problem Discovered: **Describe the Problem:**

4. Corrective Actions Planned or Taken

Instructions: Complete this section for each pollutant parameter (e.g., turbidity, copper) that exceeded a benchmark during the previous calendar year (Jan – Dec). If the parameter benchmark value is exceeded, the facility must investigate the cause of each parameter exceedance and determine a corrective action plan. To do this, indicate below in which sampling period an exceedance occurred. If more than one sample was taken at a sample location, indicate all sample results that exceeded the benchmark. Note: If the facility exceeded the benchmark for more than one parameter (e.g., turbidity & zinc), make additional copies of Section 4 and complete one for each parameter.
Pollutant Parameter: benchmark was exceeded during the following sampling period (check all that apply): ☐ 1st Sampling period (January-June) ☐ 2nd Sampling Period (July-December)
For the each pollutant parameter exceeding the benchmark_summarize below any corrective actions plan **completed** during the previous calendar year and include the dates you completed the corrective actions.
For the each pollutant parameter exceeding the benchmark summarize any corrective actions plan **initiated** during the previous calendar year, but have **not yet been completed**. Identify the date you expect to complete corrective actions.

5. Are the DMRs included with this report? Yes ☐ No ☐

6. Certification by Permittee

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

______________________	______________________	__________
Printed Name	**Title**	**Date**

Signature*____

*** Federal regulations require this report to be signed by the following person, or a duly authorized representative:**

A. In the case of corporations, by a principal executive officer of at least the level of vice president.
B. In the case of a partnership, by a general partner of a partnership.
C. In the case of sole proprietorship, by the proprietor.
D. In the case of a municipality, state, federal, or other public facility: by either a principal executive officer or ranking elected official.

A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to ADEQ.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

Please return the signed document to the address below. Make sure you retain a copy for your records.

Arkansas Department of Environmental Quality
Water Division, General Permits Section
5301 Northshore Dr.
North Little Rock, AR 72118
Water.Permit.Application@adeq.state.ar.us

SIMS METAL MANAGEMENT

CLEAN WATER ACT COMPLIANCE PLANS

LONOKE YARD
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

STORM WATER POLLUTION PREVENTION PLAN, MAY 2012
Appendix A Facility Diagrams
Appendix B Facility Oil Storage and Potential Pollutant Sources Inventory
Appendix C Example Forms
Appendix D Storm Water Permit
Appendix E Best Management Practices Manual
Appendix F Training Presentations
Appendix G Records

Prepared for:

SIMS METAL MANAGEMENT

Sims Metal Management
304 West Bankhead
New Albany, Mississippi 38652
(662) 538-7100
www.simsmm.com

Prepared by:

ENSAFE

EnSafe Inc.
5724 Summer Trees Drive
Memphis, Tennessee 38134
(901) 372-7962
(901) 588-7962
www.ensafe.com

AUTHORIZATION TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. 1251 et seq.),

Facilities Discharging Stormwater Associated With Industrial Activity

is authorized to discharge to all receiving waters except as stated in Part 1.9 (Limitations on Coverage) in accordance with eligibility requirements, notice of intent (NOI) requirements, Stormwater Pollution Prevention Plan (SWPPP) requirements, effluent limitations, monitoring requirements, and other conditions set forth in this permit.

For facilities that are eligible for coverage under this Stormwater Industrial General Permit (IGP), the Department sends a cover letter (Notice of Coverage (NOC)) with tracking permit number starting with ARR00 and a copy of the permit as necessary to the facility. The cover letter includes the Department's determination that a facility is covered under the IGP and may specify alternate requirements outlined in the permit.

Response to Comments is contained in a separate document.

Issue Date: 06/30/2009

Effective Date: 07/01/2009

Expiration Date: 06/30/2014

Steven L. Drown

Steven L. Drown
Chief, Water Division
Arkansas Department of Environmental Quality

TABLE OF CONTENTS

PART 1
PERMIT REQUIREMENTS

1.1 **Introduction.** This Stormwater Industrial General Permit (IGP) authorizes discharges from facilities composed of stormwater associated with industrial activity as defined in Part 7.27, where those discharges enter Waters of the State or a municipal separate storm sewer system (MS4) leading to Waters of the State, are subject to the conditions set forth in this permit. This permit replaces the permit issued in 2004 with an expiration date of March 31, 2009. The goal of this permit is to minimize the discharge of stormwater pollutants from industrial activity. The Operator shall read and understand the conditions of the permit.

1.2 **Availability of Permit, Forms, and Information.** A copy of this general permit, forms, reference materials, and other information is available on the Stormwater Homepage of the ADEQ web site: http://www.adeq.state.ar.us.

Hard copies may also be obtained by contacting the General Permits Section of the Water Division at (501) 682-0623 or by writing to:

General Permits Section
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118

1.3 **Permit Area**. This permit includes all areas within the State of Arkansas.

1.4 **Eligibility.** To be eligible to discharge under this permit, the permittee must have a stormwater discharge associated with industrial activity from the facility's primary industrial activity, as defined in Part 7.27, provided the primary industrial activity is in the table below or be notified by ADEQ that a facility may obtain coverage under this permit.

1.5 **Categories of Facilities Covered by this Permit**: This permit is available for stormwater discharges from the following sectors of industrial activities, as well as any discharge not covered under the general sectors that has been identified by ADEQ as appropriate for coverage. The sector descriptions are based on Standard Industrial Classification (SIC) Codes and Industrial Activity Codes consistent with the definition of stormwater discharge associated with industrial activity at 40 CFR 122.26(b)(14)(i-ix, xi). The sectors are listed below:

Sectors of Industrial Activity Covered by This Permit		
Sector and Sub-sector	**SIC Code or Activity Code[1]**	**Activity Represented**
SECTOR A: TIMBER PRODUCTS		
A1	2421	General Sawmills and Planing Mills
A2	2491	Wood Preserving
A3	2411	Log Storage and Handling
A4	2426	Hardwood Dimension and Flooring Mills
	2429	Special Product Sawmills, Not Elsewhere Classified
	2431-2439 (except 2434)	Millwork, Veneer, Plywood, and Structural Wood (see Sector W)
	2448	Wood Pallets and Skids
	2449	Wood Containers, Not Elsewhere Classified

Sectors of Industrial Activity Covered by This Permit		
Sector and Sub-sector	**SIC Code or Activity Code[1]**	**Activity Represented**
A4 cont.	2451, 2452	Wood Buildings and Mobile Homes
	2493	Reconstituted Wood Products
	2499	Wood Products, Not Elsewhere Classified
A5	2441	Nailed and Lock Corner Wood Boxes and Shook
SECTOR B: PAPER AND ALLIED PRODUCTS		
B1	2631	Paperboard Mills
B2	2611	Pulp Mills
	2621	Paper Mills
	2652-2657	Paperboard Containers and Boxes
	2671-2679	Converted Paper and Paperboard Products, Except Containers and Boxes
SECTOR C: CHEMICALS AND ALLIED PRODUCTS		
C1	2873-2879	Agricultural Chemicals
C2	2812-2819	Industrial Inorganic Chemicals
C3	2841-2844	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations
C4	2821-2824	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic and Other Manmade Fibers Except Glass
C5	2833-2836	Medicinal Chemicals and Botanical Products; Pharmaceutical Preparations; in vitro and in vivo Diagnostic Substances; and Biological Products, Except Diagnostic Substances
	2851	Paints, Varnishes, Lacquers, Enamels, and Allied Products
	2861-2869	Industrial Organic Chemicals
	2891-2899	Miscellaneous Chemical Products
	3952 (limited to list of inks and paints)	Inks and Paints, Including China Painting Enamels, India Ink, Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints and Artist's Watercolors
	2911	Petroleum Refining
SECTOR D: ASPHALT PAVING AND ROOFING MATERIALS AND LUBRICANTS		
D1	2951, 2952	Asphalt Paving and Roofing Materials
D2	2992, 2999	Miscellaneous Products of Petroleum and Coal
SECTOR E: GLASS, CLAY, CEMENT, CONCRETE, AND GYPSUM PRODUCTS		
E1	3251-3259	Structural Clay Products
	3261-3269	Pottery and Related Products
E2	3271-3275	Concrete, Gypsum, and Plaster Products
E3	3211	Flat Glass
	3221, 3229	Glass and Glassware, Pressed or Blown
	3231	Glass Products Made of Purchased Glass
	3241	Hydraulic Cement

Sectors of Industrial Activity Covered by This Permit		
Sector and Sub-sector	**SIC Code or Activity Code[1]**	**Activity Represented**
E3 cont.	3281	Cut Stone and Stone Products
	3291-3299	Abrasive, Asbestos, and Miscellaneous Nonmetallic Mineral Products
SECTOR F: PRIMARY METALS		
F1	3312-3317	Steel Works, Blast Furnaces, and Rolling and Finishing Mills
F2	3321-3325	Iron and Steel Foundries
F3	3351-3357	Rolling, Drawing, and Extruding of Nonferrous Metals
F4	3363-3369	Nonferrous Foundries (Castings)
F5	3331-3339	Primary Smelting and Refining of Nonferrous Metals
	3341	Secondary Smelting and Refining of Nonferrous Metals
	3398, 3399	Miscellaneous Primary Metal Products
SECTOR G: METAL MINING (ORE MINING AND DRESSING)		
G1	1021	Copper Ore and Mining Dressing Facilities
G2	1011	Iron Ores
	1021	Copper Ores
	1031	Lead and Zinc Ores
	1041, 1044	Gold and Silver Ores
	1061	Ferroalloy Ores, Except Vanadium
	1081	Metal Mining Services
	1094, 1099	Miscellaneous Metal Ores
SECTOR H: COAL MINES AND COAL MINING-RELATED FACILITIES		
H1	1221-1241	Coal Mines and Coal Mining-Related Facilities
SECTOR I: OIL AND GAS EXTRACTION AND REFINING		
I1	1311	Crude Petroleum and Natural Gas
	1321	Natural Gas Liquids
	1381-1389	Oil and Gas Field Services
SECTOR J: MINERAL MINING AND DRESSING		
J1	1442	Construction Sand and Gravel
	1446	Industrial Sand
J2	1411	Dimension Stone
	1422-1429	Crushed and Broken Stone, Including Rip Rap
	1481	Nonmetallic Minerals Services, Except Fuels
	1499	Miscellaneous Nonmetallic Minerals, Except Fuels
J3	1455, 1459	Clay, Ceramic, and Refractory Materials
	1474-1479	Chemical and Fertilizer Mineral Mining
SECTOR K: HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES		
K1	HZ	Hazardous Waste Treatment, Storage, or Disposal Facilities,

Sectors of Industrial Activity Covered by This Permit		
Sector and Sub-sector	**SIC Code or Activity Code[1]**	**Activity Represented**
		including those that are operating under interim status or a permit under subtitle C of RCRA
SECTOR L: LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS		
L1	LF	All Landfill, Land Application Sites and Open Dumps
L2	LF	All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60
SECTOR M: AUTOMOBILE SALVAGE YARDS		
M1	5015	Automobile Salvage Yards
SECTOR N: SCRAP RECYCLING FACILITIES		
N1	5093	Scrap Recycling and Waste Recycling Facilities except Source-Separated Recycling
N2	5093	Source-separated Recycling Facility
SECTOR O: STEAM ELECTRIC GENERATING FACILITIES		
O1	SE	Steam Electric Generating Facilities, including coal handling sites
SECTOR P: LAND TRANSPORTATION AND WAREHOUSING		
P1	4011, 4013	Railroad Transportation
	4111-4173	Local and Highway Passenger Transportation
	4212-4231	Motor Freight Transportation and Warehousing
	4311	United States Postal Service
	5171	Petroleum Bulk Stations and Terminals
SECTOR Q: WATER TRANSPORTATION		
Q1	4412-4499	Water Transportation Facilities
SECTOR R: SHIP AND BOAT BUILDING AND REPAIRING YARDS		
R1	3731, 3732	Ship and Boat Building or Repairing Yards
SECTOR S: AIR TRANSPORTATION FACILITIES		
S1	4512-4581	Air Transportation Facilities
SECTOR T: TREATMENT WORKS		
T1	TW	Treatment Works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA

Sectors of Industrial Activity Covered by This Permit		
Sector and Sub-sector	**SIC Code or Activity Code[1]**	**Activity Represented**
SECTOR U: FOOD AND KINDRED PRODUCTS		
U1	2041-2048	Grain Mill Products
U2	2074-2079	Fats and Oils Products
U3	2011-2015	Meat Products
	2021-2026	Dairy Products
	2032-2038	Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties
	2051-2053	Bakery Products
	2061-2068	Sugar and Confectionery Products
	2082-2087	Beverages
	2091-2099	Miscellaneous Food Preparations and Kindred Products
	2111-2141	Tobacco Products
SECTOR V: TEXTILE MILLS, APPAREL, AND OTHER FABRIC PRODUCT MANUFACTURING; LEATHER AND LEATHER PRODUCTS		
V1	2211-2299	Textile Mill Products
	2311-2399	Apparel and Other Finished Products Made from Fabrics and Similar Materials
	3131-3199	Leather and Leather Products (note: see Sector Z1 for Leather Tanning and Finishing)
SECTOR W: FURNITURE AND FIXTURES		
W1	2434	Wood Kitchen Cabinets
	2511-2599	Furniture and Fixtures
SECTOR X: PRINTING AND PUBLISHING		
X1	2711-2796	Printing, Publishing, and Allied Industries
SECTOR Y: RUBBER, MISCELLANEOUS PLASTIC PRODUCTS, AND MISCELLANEOUS MANUFACTURING INDUSTRIES		
Y1	3011	Tires and Inner Tubes
	3021	Rubber and Plastics Footwear
	3052, 3053	Gaskets, Packing and Sealing Devices, and Rubber and Plastic Hoses and Belting
	3061, 3069	Fabricated Rubber Products, Not Elsewhere Classified
Y2	3081-3089	Miscellaneous Plastics Products
	3931	Musical Instruments
	3942-3949	Dolls, Toys, Games, and Sporting and Athletic Goods
	3951-3955 (except 3952 – see Sector C)	Pens, Pencils, and Other Artists' Materials
	3961, 3965	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal
	3991-3999	Miscellaneous Manufacturing Industries

Sectors of Industrial Activity Covered by This Permit		
Sector and Sub-sector	**SIC Code or Activity Code[1]**	**Activity Represented**
SECTOR Z: LEATHER TANNING AND FINISHING		
Z1	3111	Leather Tanning and Finishing
SECTOR AA: FABRICATED METAL PRODUCTS		
AA1	3411-3499 (except 3479)	Fabricated Metal Products, Except Machinery and Transportation Equipment, and Coating, Engraving, and Allied Services.
	3911-3915	Jewelry, Silverware, and Plated Ware
AA2	3479	Fabricated Metal Coating and Engraving
SECTOR AB: TRANSPORTATION EQUIPMENT, INDUSTRIAL OR COMMERCIAL MACHINERY		
AB1	3511-3599 (except 3571-3579)	Industrial and Commercial Machinery, Except Computer and Office Equipment (see Sector AC)
	3711-3799 (except 3731, 3732)	Transportation Equipment Except Ship and Boat Building and Repairing (see Sector R)
SECTOR AC: ELECTRONIC, ELECTRICAL, PHOTOGRAPHIC, AND OPTICAL GOODS		
AC1	3571-3579	Computer and Office Equipment
	3812-3873	Measuring, Analyzing, and Controlling Instruments; Photographic and Optical Goods, Watches, and Clocks
	3612-3699	Electronic and Electrical Equipment and Components, Except Computer Equipment
SECTOR AD: NON-CLASSIFIED FACILITIES		
AD1	Other stormwater discharges designated by the Director as needing a permit (see 40 CFR 122.26(a)(9)(i)(C) & (D)) or any facility discharging stormwater associated with industrial activity not described by any of Sectors A-AC. NOTE: Facilities may not elect to be covered under Sector AD. Only the Director may assign a facility to Sector AD.	

1.6 **Allowable Stormwater Discharges.** Unless otherwise made ineligible under Part 1.9, the following stormwater discharges are eligible for coverage under this permit:

1.6.1 All new and existing discharges composed entirely of stormwater associated with industrial activity as defined in Part 7.27.

1.6.2 Discharges designated by ADEQ as needing stormwater permit as provided in Sector G. The Department may notify a facility that a stormwater permit is needed. Any such notice will briefly state the reason for such a decision.

1.6.3 Discharges subject to any of the national stormwater-specific effluent limitations guidelines listed below.

Regulated Discharge	40 CFR Section
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, byproducts or waste products (SIC 2874)	Part 418, Subpart A
Runoff from coal storage piles at steam electric generating facilities	Part 423
Runoff from asphalt emulsion facilities	Part 443, Subpart A

1.7 **Allowable Non-stormwater Discharges.** The following non-stormwater discharges may be authorized by this permit, provided the non-stormwater component of the discharge meets all requirements of this permit:

a. discharges from emergency fire fighting activities;
b. fire hydrant flushings;
c. potable water sources including waterline flushings;
d. runoff from irrigation using non-process water;
e. landscape watering provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling;
f. routine external building washdown which does not use detergents;
g. pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
h. air compressor condensate;
i. steam condensate;
j. uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids (such as the discharge of thawed condensate from the surface of liquid nitrogen tanks stored outdoors);
k. incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., “piped” cooling tower blowdown or drains);
l. uncontaminated ground water or spring water (See Note Below);
m. foundation or footing drains where flows are not contaminated with process materials such as solvents (See Note Below);
n. excavation dewatering (See Note Below); and
o. non-process water used for dust suppression on roads.

Note:

There shall be no turbid discharges to surface waters of the state resulting from dewatering activities. If trench or ground waters contain sediment, it must pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag, or comparable practice. Ground water dewatering which does not contain sediment or other pollutants is not required to be treated prior to discharge. However, care must be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.

1.8 **Conditional "No Exposure" Certification.** In accordance with 40 CFR 122.26(g), a No Exposure Exclusion is a conditional exclusion applicable to all categories of industrial activity (except construction activity) with no exposure of industrial materials and activities to stormwater. All facilities with point source discharges composed entirely of stormwater associated with industrial activity that satisfy criteria of no exposure and complete the No Exposure Certification section of the Notice of Intent (NOI) will be able to obtain exclusion from this general permit. The Exclusion is available on a facility-wide basis only, not for individual outfalls. If any industrial activities or materials are or will be exposed to precipitation, the facility is not eligible for the No Exposure Exclusion. To apply for a No Exposure Exclusion, a complete and accurate Notice of Intent (NOI) and an initial permit fee as required under the provisions of APCEC Regulation No. 9 should be submitted in accordance with Part 2.4. Subsequent annual fees will be billed by the Department. No Exposure Certification renewals must be submitted under Part 2.2 assuming the facility still qualifies for the exemption.

1.9 **Limitations on Coverage (Exclusion).** The following stormwater discharges associated with industrial activity are not covered by this permit:

1.9.1 **Discharges Mixed with Non-Stormwater**. Stormwater discharges associated with industrial activity that are mixed with sources of non-stormwater, except for non-stormwater discharges that are identified by and in compliance with Part 1.7 of the permit.

1.9.2 **Stormwater Discharges Associated with Construction Activity.** Stormwater discharges associated with construction activity disturbing one acre or more are not eligible for coverage under this permit even if a permittee currently has coverage under this permit.

1.9.3 **Discharges Currently Covered by Another Permit.** A facility is not eligible for coverage under this permit unless stormwater requirements from the individual permit can be transferred to this general permit. In order to avoid conflict with the "anti-backsliding" provisions of the Clean Water Act (CWA), a permit transfer will only be allowed where the outfall in the individual permit did not contain numeric water quality-based limitations with an exception of pH. A simple pH range limit would not necessarily have to be considered a water-quality based limit unless developed to address known discharge problems at a particular facility. Compliance with the numeric limitations under the individual permit could also be criteria for eligibility to transfer from an individual permit to the general permit.

1.9.4 **Discharges Subject to Effluent Guidelines.** Stormwater discharges associated with industrial activity from facilities which are subject to existing effluent guideline limitations addressing stormwater with the exception of those listed in Part 1.6.3.

1.9.5 **Discharges into Impaired Receiving Waters (303(d) List).** "Discharges from a facility into a receiving waters listed as impaired under Section 303(d) of the Clean Water Act , unless the permittee:

a. documents that the pollutant(s) for which the waterbody is impaired is not present at the facility, and retain documentation of the finding with the SWPPP; or

b. incorporate into the SWPPP any additional BMPs needed prevent to the maximum extent possible exposure to stormwater of the pollutants for which the waterbody is impaired and to sufficiently protect water quality. Please note that the Department will be reviewing this information. If it is determined that the facility will discharge to an impaired water body, then the Department may require additional requirements."

1.9.6 **Discharges into Receiving Waters with an Approved TMDL.** Discharges from a facility into receiving waters for which there is an established Total Maximum Daily Load (TMDL) allocation are not eligible for coverage under this permit unless:

a. the permittee develops and certifies a stormwater pollution prevention plan (SWPPP) that is consistent with the assumptions and requirements in the approved TMDL; and

b. If a specific numeric wasteload allocation has been established that would apply to the facility's discharges, the operator must incorporate that allocation into its SWPPP and implement necessary steps to meet that allocation and implement necessary steps to meet that allocation. Please note that the Department will be reviewing this information. If it is determined that the project will discharge to a receiving water with an approved TMDL, then the Department may require additional BMPs.

1.9.7 **Endangered and Threatened Species and Critical Habitat Protection.** Stormwater discharges from facilities that are likely to adversely affect a listed endangered or threatened species or its critical habitat must contact the U.S. Fish and Wildlife Service (USFWS) at (501) 513-4470 or www.fws.gov/arkansas-es. Discharges which are not in compliance with the Endangered Species Act (ESA) can not be covered under this permit.

1.10 **Permit Compliance.** Any noncompliance with any of the requirements of this permit constitutes a violation of the Clean Water Act as well as the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

PART 2
AUTHORIZATION UNDER THIS PERMIT

2.1 How to Obtain Authorization. To obtain authorization under this permit, one must:

a. Meet the Part 1.4 eligibility requirements.

b. Develop a SWPPP according to the requirements in Part 4 of the permit and select, design, install, and implement control measures to meet effluent limitations, water quality standards, and parameter benchmark values.

c. Submit a complete and accurate Notice of Intent (NOI) Package in accordance with Part 2.2, and an initial permit fee as required under the provisions of APCEC Regulation No. 9. Subsequent annual fees will be billed by the Department.

Timeframes for discharge authorization are contained in the table below. Unless notified by the Director to the contrary, Operators who submit such notifications are authorized to discharge stormwater associated with industrial activity under the terms and conditions of this permit after receipt of the Stormwater Industrial General Permit Notice of Coverage (NOC) and a copy of this permit.

2.2 Notice of Intent (NOI) Deadlines. Facilities that intend to obtain coverage for stormwater discharges from industrial activity under this general permit or have received authorization to discharge under a previously issued industrial general permit must submit a NOI and perform additional actions in accordance with the following:

Category[1]	**Deadline for Submittal**	**Package Submittal**	**Other Required Actions**
New Discharges	Minimum thirty (30) days prior to commencement of stormwater discharge from the facility.	1. Completed NOI 2. Stormwater Pollution Prevention Plan (SWPPP)[2] 3. Permit Fee	NONE
Existing Dischargers in operation & authorized coverage under the 2004 IGP.	One Hundred and Eighty (180) days following the effective date of this permit.	1. Completed NOI 2. Detailed Site Map (Part 4.6.4)	Update SWPPP, as necessary, to comply with the requirements of Part 4 within 180 days of the effective date of this permit (Submittal of updated SWPPP is not required.)

Notes:

1. No Exposure Exclusions: A SWPPP or site map is not required for a new application or renewal of a No Exposure Exclusion.
2. The Department understands that the SWPPP is a living document and the version submitted with an initial NOI may have portions that are not finalized.

2.3 Contents of the Notice of Intent. The Notice of Intent includes, at a minimum, the following:

a. Permittee Name (Legal Applicant), Permittee, Address, Type, and Telephone Number
b. Invoice Contact Person, Mailing Information, and Telephone Number
c. Facility Name, Mailing Address, Location, Latitude, Longitude, SIC Codes, Description of Business/Process
d. Facility Contact Person and Phone Number
e. Outfall information specific to each and every outfall, including outfall name and/or number as indicated on site map(s) in the SWPPP, latitude, longitude, and receiving waterbody information.

f. Other information (i.e. Consulting Name, Address, and Telephone Number)
g. No Exposure Exclusion Requirements and Certification
h. Certification and Signature of Permittee
i. Cognizant Official
j. Permit Requirement Verification

2.4 **<u>Where to Submit.</u>** A complete package should be submitted to the Department at the following address:

General Permits Section
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118

or by electronic mail (Complete documents (NOI and/or SWPPP) must be submitted in Adobe Acrobat format (.pdf) to: Water-permit-application@adeq.state.ar.us.

NOTE: Notice of Coverage (NOC) will not be issued until payment has been received by ADEQ.

2.5 **<u>Additional Notification</u>.** Facilities which discharge stormwater associated with industrial activity to a small, medium, or large municipal separate storm sewer system (MS4), as defined in Parts 7.15 and 7.22 of this permit, must, in addition to filing a copy of the Notice of Intent, notify the Operator of the municipal separate storm sewer system (MS4) to which they discharge in accordance with the deadlines in Part 2.2 of this permit.

2.6 **<u>Change of Facility Name, Ownership, and/or Authorization.</u>**

Facilities that are authorized under this permit, which undergo a change in ownership, facility name, or signatory authorization (i.e., a new cognizant official, responsible person, etc.), must submit a Permit Transfer form to the Director. A Permit Transfer form can be obtained from the General Permits Section of the Water Division of the ADEQ website at: http://www.adeq.state.ar.us/.. For an ownership change, the permit transfer form must be submitted a minimum of 30 days prior to the date the transfer to the new operator will take place. The new owner must comply with the existing permit for the facility during the interim period. A Disclosure Form may be required on a case-by-case basis.

2.7 **<u>Terminating Coverage.</u>**

2.7.1 **<u>Submitting a Notice of Termination.</u>** To terminate permit coverage, the permittee must submit a complete and accurate Notice of Termination (NOT). A Notice of Termination form may be obtained from the Stormwater Homepage of the ADEQ website at: www.adeq.state.ar.us. The permittee is responsible for meeting the terms of this permit until authorization is terminated.

2.7.2 **<u>When to Submit a Notice of Termination.</u>**

The permittee must submit a Notice of Termination after:

a. The facility has ceased operations and there are not or no longer will be discharges of stormwater associated with industrial activity from the facility; or

b. The facility has obtained coverage under an individual or alternative general permit for all discharges required to be covered by an NPDES permit.

PART 3
NUMERIC LIMITATIONS, MONITORING, AND REPORTING REQUIREMENTS

3.1 Numeric Effluent Limitations based on Effluent Limitations Guidelines.

3.1.1 If the facility is in an industrial category subject to one of the Effluent Limitations Guidelines (ELG) identified in Part 1.6.3, the effluent limits referenced in the table below must be met:

CFR Industry		Parameter	Limitation	Monitoring Requirements	
Category	**Subcategory**			**Frequency**	**Sample Type**
Cement Manufacturing (40 CFR 411)	Material Storage Piles Runoff.	pH	6.0-9.0 s.u.	once/year	grab
		Total Suspended Solids (TSS)	50 mg/l (Daily Maximum)	once/year	grab
Fertilizer Manufacturing (40 CFR 418)	Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, byproducts or waste products	pH	6.0-9.0 s.u.	once/year	grab
		Total Phosphorus (As P)	105.0 mg/l (Daily Maximum)	once/year	grab
			35 mg/l (30-day Average)	once/year	grab
		Fluoride	75.0 mg/l (Daily Maximum)	once/year	grab
			25.0 mg/l (30-day Average)	once/year	grab
Steam powered electric power generating (40 CFR 423)	Coal Pile Runoff	pH	6.0-9.0 s.u.	once/year	grab
		Total Suspended Solids* (TSS)	50 mg/l (Daily Maximum)	once/year	grab
Paving and roofing materials (tars and asphalt) (40 CFR 443)	Runoff from manufacturing of asphalt paving or roofing emulsion.	Total Suspended Solids (TSS)	23.0 mg/l (Daily Maximum)	once/year	grab
			15.0 mg/l (30-day Average)	once/year	grab
		pH	6.0-9.0 s.u.	once/year	grab
		Oil and Grease	15.0 mg/l (Daily Maximum)	once/year	grab
			10.0 mg/l (30-day Average)	once/year	grab

* Coal pile runoff shall not be diluted with other stormwater or other flows in order to meet the TSS limitations. Any untreated overflow from facilities designed, constructed and operated to treat the volume of coal pile runoff which is associated with a 10-year, 24-hour rainfall event shall not be subject to the 50 mg/l Total Suspended Solids limitations.

3.1.2 Sampling for the above effluent guideline limitations can not be waived as described in Part 3.8.2.

3.1.3 The facility must monitor each outfall discharging stormwater from any of the regulated activities described in the above table. The similar outfall monitoring provision as described in Part 3.7.1 is not available for numeric effluent limits monitoring.

3.2 __Water Quality Standards.__ Any discharge of stormwater associated with industrial activity must be controlled as necessary to meet applicable water quality standards. New discharges or increased loadings from existing discharges must be consistent with the Arkansas Anti-Degradation Policy in APCEC Regulation No. 2. ADEQ expects that compliance with the other conditions in this permit will control discharges as necessary to meet applicable water quality standards. If at any time the facility becomes aware, or ADEQ determines, that the facility's discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective action as required, document the corrective actions as required, and report the corrective actions to ADEQ.

3.3 __Parameter Benchmark Monitoring.__ All facilities covered under this general permit are authorized to discharge from all permitted stormwater outfalls. __All facilities__ are required to conduct monitoring and sampling of stormwater at each outfall as specified below. The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. Benchmark monitoring data are primarily used to determine the overall effectiveness of BMPs and control measures in controlling the discharge of pollutants to the environment and to assist the facility in knowing when additional corrective action(s) may be necessary.

Effluent Characteristics	**Parameter Benchmark Value**	
	Concentration (mg/l, unless otherwise specified)	
	Maximum	
pH	Minimum 6.0 s.u.	Maximum 9.0 s.u.
Chemical Oxygen Demand (COD)	120	
Total Suspended Solids (TSS)	100	
Oil & Grease	15	

In addition to the above effluent characteristics, the following Effluent Characteristics, which are based on Industrial Sectors as defined in Part 1.5, must also be monitored. (Please note that not all sectors listed in Part 1.5 have additional characteristics.)

Sector	**Sector Description**	**Effluent Characteristics**	**Parameter Benchmark Value**
A1	General Sawmills and Planing Mills (SIC 2421)	Total Zinc	0.684 mg/L
A2	Wood Preserving (SIC 2491)	Total Arsenic	0.169 mg/L
		Total Copper	0.0756 mg/L
C1	Agricultural Chemicals (SIC 2873-2879)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
		Total Lead	0.519 mg/L
		Total Iron	1.0 mg/L
		Total Zinc	0.684 mg/L
		Phosphorus	2.0 mg/L
C2	Industrial Inorganic Chemicals (SIC 2812-2819)	Total Aluminum	0.75 mg/ L
		Total Iron	1.0 mg/L
		Nitrate plus Nitrite Nitrogen	0.68 mg/L

Sector	**Sector Description**	**Effluent Characteristics**	**Parameter Benchmark Value**
C3	Soaps, Detergents, Cosmetics, and Perfumes (SIC 2841-2844)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
		Total Zinc	0.684 mg/L
C4	Plastics, Synthetics, and Resins (SIC 2821-2824)	Total Zinc	0.684 mg/L
E1	Clay Product Manufacturers (SIC 3251-3259, 3261-3269)	Total Aluminum	0.75 mg/L
E2	Concrete and Gypsum Product Manufacturers (SIC 3271-3275)	Total Iron	1.0 mg/L
F1	Steel Works, Blast Furnaces, and Rolling and Finishing Mills (SIC 3312-3317)	Total Aluminum	0.75 mg/L
		Total Zinc	0.684 mg/L
F2	Iron and Steel Foundries (SIC 3321-3325)	Total Aluminum	0.75 mg/L
		Total Copper	0.0756 mg/L
		Total Iron	1.0 mg/L
		Total Zinc	0.684 mg/L
F3	Rolling, Drawing, and Extruding of Nonferrous Metals (SIC 3351-3357)	Total Copper	0.0756 mg/L
		Total Zinc	0.684 mg/L
F4	Nonferrous Foundries (SIC 3363-3369)	Total Copper	0.0756 mg/L
		Total Zinc	0.684 mg/L
G1	Active Copper Ore Mining and Dressing Facilities (SIC 1021)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
G2	Iron Ores; Copper Ores; Lead and Zinc Ores; Gold and Silver Ores; Ferroalloy Ores, Except Vanadium; and Miscellaneous Metal Ores (SIC Codes 1011, 1021, 1031, 1041, 1044, 1061, 1081, 1094, 1099) (Note: when analyzing hardness for a suite of metals, it is more cost effective to add analysis of calcium and magnesium, and have hardness calculated than to require hardness analysis separately)	Total Antimony	0.636 mg/L
		Total Arsenic	0.169 mg/ L
		Total Beryllium	0.13 mg/L
		Total Cadmium	0.0118 mg/L
		Total Copper	0.0756 mg/L
		Total Iron	1.0 mg/L
		Total Lead	0.519 mg/L
		Total Mercury	0.0024 mg/L
		Total Nickel	6.43 mg/L
		Total Selenium	0.239mg/L
		Total Silver	0.0107 mg/L
		Total Zinc	0.684 mg/L

Sector	Sector Description	Effluent Characteristics	Parameter Benchmark Value
H1	Coal Mines and Related Areas (SIC 1221-1241)	Total Aluminum	0.75 mg/L
		Total Iron	1.0 mg/L
J1	Sand and Gravel Mining (SIC 1442, 1446)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
K1	ALL - Industrial Activity Code "HZ" (Note: permit coverage limited in some States). Benchmarks only applicable to discharges not subject to effluent limitations in 40 CFR Part 445 Subpart A (see below).	Ammonia	19 mg/L
		Total Magnesium	0.0636 mg/L
		Total Arsenic	0.169 mg/L
		Total Cadmium	0.0118 mg/L
		Total Cyanide	0.0636 mg/ L
		Total Lead	0.519 mg/L
		Total Mercury	0.0024 mg/ L
		Total Selenium	0.239 mg/L
		Total Silver	0.0107 mg/L
L2	All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60 (Industrial Activity Code "LF") [1]Benchmark monitoring required only for discharges not subject to effluent limitations in 40 CFR Part 445 Subpart B (see Table L-2 above).	Total Iron	1.0 mg/L
M1	Automobile Salvage Yards (SIC 5015)	Total Aluminum	0.75 mg/L
		Total Iron	1.0 mg/L
		Total Lead	0.519 mg/L
N1	Scrap Recycling and Waste Recycling Facilities except Source-Separated Recycling (SIC 5093)	Total Aluminum	0.75 mg/L
		Total Copper	0.0756 mg/L
		Total Iron	1.0 mg/L
		Total Lead	0.519 mg/L
		Total Zinc	0.684 mg/L
O1	Steam Electric Generating Facilities (Industrial Activity Code "SE")	Total Iron	1.0 mg/L
Q1	Water Transportation Facilities (SIC 4412-4499)	Total Aluminum	0.75 mg/L
		Total Iron	1.0 mg/L
		Total Lead	0.519 mg/L
		Total Zinc	0.684 mg/L

Sector	Sector Description	Effluent Characteristics	Parameter Benchmark Value
S1	For airports where a single permittee, or a combination of permitted facilities use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, monitor the first four parameters in ONLY those outfalls that collect runoff from areas where deicing activities occur (SIC 4512-4581).	Ammonia	19 mg/L
U2	Fats and Oils Products (SIC 2074-2079)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
Y1	Rubber Products Manufacturing (SIC 3011, 3021, 3052, 3053, 3061, 3069)	Total Zinc	0.684 mg/L
AA1	Fabricated Metal Products, except Coating (SIC 3411-3499; 3911-3915)	Total Aluminum	0.75 mg/L
		Total Iron	1.0 mg/L
		Total Zinc	0.684 mg/L
		Nitrate plus Nitrite Nitrogen	0.68 mg/L
AA2	Fabricated Metal Coating and Engraving (SIC 3479)	Total Zinc	0.684 mg/L
		Nitrate plus Nitrite Nitrogen	0.68 mg/L

3.4 **Additional Monitoring Required by ADEQ.** ADEQ may notify the facility of additional discharge monitoring requirements. Any such notice will briefly state the reasons for the monitoring, locations, and parameters to be monitored, frequency and period of monitoring, sample types, and reporting requirements. If a facility discharges to an impaired water with an ADEQ approved or established TMDL, ADEQ will inform the facility if any additional monitoring requirements or controls are necessary for the discharge to be consistent with the assumptions of any available wasteload allocation in the TMDL.

3.5 **Monitoring Periods.** A monitoring period is from January 1st to December 31st of a calendar year. The facility must monitor at least twice with in a calendar year. One sample must be taken in each of the following time frames:

- January-June.
- July-December.

Monitoring requirements in this permit begin as follows:

Category of Discharger	
For New Dischargers:	Monitor under the terms and conditions of this general permit starting 180 days from the effective date of the permit but not before January 1, 2010.
For Existing Dischargers: originally authorized by the 2004 issued IGP	Continue to monitor and submit the required Discharge Monitoring Reports (Categories 1-12) as directed in the previous permit issued in 2004 for the 2008-2009 reporting year. The facilities will then monitor under the terms and conditions of this general permit starting 180 days from the effective date of the general permit but not before January 1, 2010.

3.6 **Monitoring Location**. All samples must be taken at monitoring points specified in the NOI and SWPPP before the stormwater joins or is diluted by any other waste stream, unless otherwise approved in writing by the Department.

3.7 **Sampling Associated with Monitoring Requirements.** Sampling conducted to capture stormwater with the greatest exposure to significant sources of pollution. Each stormwater outfall must be sampled and analyzed separately unless an outfall has been determined to be similar in accordance with Part 3.7.1 below.

3.7.1 **Similar Outfalls.** When a stormwater outfall may be similar to another outfall at the facility, i.e., similar effluents based on a consideration of industrial activity, significant materials and management practices, and activities within the area drained by the outfall, the permittee may sample only the discharge point with the highest concentration of pollutants. The SWPPP must include documentation on how these determinations were made and the description of each point of discharge; include the relative quantity (volume) of discharge and pollutants likely to be found. The documentation should include the following information:

a. Location of each of the similar outfalls;
b. Description of the general industrial activities conducted in the drainage area of each outfall;
c. Description of the control measures implemented in the drainage area of each outfall;
d. Description of the exposed materials located in the drainage area of each outfall that are likely to be significant contributors of pollutants to stormwater discharges;
e. Why the outfalls are expected to discharge similar effluents.

3.7.2 **Sampling Procedures.** Samples and measurements taken as required shall be representative of the volume and nature of the monitored discharge. Stormwater must be sampled according to requirements below (a.-d.) unless the Permittee submits an alternative plan as a modification of coverage and it is approved by ADEQ. Any approved alternative plan should be included in the SWPPP. If a Permittee is unable to sample during a monitoring period, they must submit a justification with the Discharge Monitoring Report for that period.

Sampling requirements and instructions are as follows:

a. Grab Sample. A minimum of one grab sample must be taken from each outfall within the first 30 minutes of a discharge resulting from a measurable storm event as described in Part 3.7.2.b. If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, the sample must be collected as soon as practicable after the first 30 minutes and documentation must be kept with the SWPPP explaining why it was not possible to take samples within the first 30 minutes.

b. Measurable Storm Events. All required monitoring must be performed on a storm event that results in an actual discharge from the site ("measurable storm event") that follows the preceding measurable storm event by at least 72 hours (3 days). The 72-hour (3-day) storm interval does not apply if the facility is able to document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period. For each monitoring event, the date and duration (in hours) of the rainfall event, rainfall total (in inches) for that rainfall event, and time (in days) since the previous measurable storm event must be identified.

c. Adverse Weather Conditions. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make sampling impractical, such as drought or extended frozen conditions. When adverse weather conditions prevent the collection of samples according to the relevant monitoring schedule, a substitute sample must be taken during the subsequent qualifying storm event. Adverse weather does not exempt the facility from having to file a discharge monitoring report in accordance with the sampling schedule. The facility must report any failure to monitor as indicating the basis for not sampling during the usual reporting period.

d. Sampling Method. Analytical methods used to meet the monitoring requirements specified in this permit shall conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136 or to the latest revision of *Standard Methods for the Examination of Water and Wastewater* (APHA), unless otherwise specified in this permit or approved in writing by the Department provided that such otherwise approved analytical method is the equivalent of that found in the guidance cited in this section or will result in more accurate analytical results or will have a lower detection limit.

e. Records and Reporting. For each monitoring event, the permittee shall record and report the date and duration (in hours) of the storm event(s) sampled; rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff; the duration between the storm event sampled and the end of the previous measurable storm event; and an estimate of the total volume (in gallons) of the discharge sampled shall be provided.

3.8 Exceptions to Monitoring Requirements.

3.8.1 Inactive and Un-staffed Facilities. Facilities that are inactive and unstaffed during an entire monitoring period must notify ADEQ at the beginning of the inactive period. Monitoring will not be required during the inactive and unstaffed period. To be eligible for a monitoring waiver at inactive and unstaffed sites, the permittee must certify the site is unstaffed and inactive and the pollutant generating activities are not occurring at the site. The certification must be signed in accordance with signatory requirements of Part 6.9. The signed certification must be sent to ADEQ with the notice. A copy of the certification must also be kept with the Stormwater Pollution Prevention Plan. Unstaffed is defined as no staff assigned to the industrial or pollutant generating activities. A site may be "unstaffed" even when security personnel are present, provided that pollutant generating activities are not included in their duties.

3.8.2 Sampling Waiver. Sampling may be suspended for one or more parameters based on one of the following. However, a facility that conducts a significant process change must continue monitoring and may not use previous monitoring to demonstrate consistent attainment.

3.8.2.1 Consistent attainment of benchmark values as described in Part 3.11.

3.8.2.2 A facility that conducted monitoring under the previous 2004 permit may request in writing to have monitoring requirements waived for any of the effluent characteristics that the facility is required to test under Section 3.3. The permittee must submit sufficient data with the request indicating that the facility has not exceeded parameter benchmark values. The data must also be certified to be representative of the stormwater discharge from the site. The Department will provide a decision via correspondence.

3.8.2.3 If a parameter is assigned to the facility per Part 3.3, the permittee may request in writing for sampling for that parameter to be waived. Adequate justification and/or data must be provided to the Department indicating as to why the assigned characteristic is not present at levels that would adversely affect the environment. The Department will review the request and all available information and provide a decision via correspondence.

3.9 Parameter Benchmark Values. The section contains the parameter benchmark values that should be met in stormwater discharges as applicable. The benchmark concentrations are not effluent limitations. Therefore, a benchmark exceedance is not a permit violation.

PARAMETER BENCHMARK VALUES +

Parameter name	Benchmark level	Source
Biochemical Oxygen Demand (5)	30 mg/L	4
Chemical Oxygen Demand	120 mg/L	5
Total Suspended Solids	100 mg/L	7
Oil and Grease	15 mg/L	8
Nitrate + Nitrite Nitrogen	0.68 mg/L	7
Total Phosphorus	2.0 mg/L	6
pH	6.0-9.0 s.u.	4
Acrylonitrile (c)	7.55 mg/L	2
Aluminum, Total (pH 6.5-9)	0.75 mg/L	1
Ammonia	19 mg/L	1
Antimony, Total	0.636 mg/L	9
Arsenic, Total (c)	0.169 mg/L	9
Benzene	0.01 mg/L	10
Beryllium, Total (c)	0.13 mg/L	2
Butylbenzyl Phthalate	3 mg/L	3
Cadmium, Total (H)	0.0118 mg/L	14
Chloride	860 mg/L	1
Copper, Total (H)	0.0756 mg/L	14
Cyanide, Total	0.0636 mg/L	9
Dimethyl Phthalate	1.0 mg/L	11
Ethylbenzene	3.1 mg/L	3
Fluoranthene	0.042 mg/L	3
Fluoride	1.8 mg/L	6
Iron, Total	1.0 mg/L	12
Lead, Total (H)	0.519 mg/L	14
Magnesium, Total	0.0636 mg/L	9
Manganese	1.0 mg/L	13
Mercury, Total	0.0024 mg/L	1
Nickel, Total (H)	6.43 mg/L	14
PCB-1016 (c)	0.000127 mg/L	9
PCB-1221 (c)	0.10 mg/L	10
PCB-1232 (c)	0.000318 mg/L	9
PCB-1242 (c)	0.00020 mg/L	10
PCB-1248 (c)	0.00255 mg/L	9
PCB-1254 (c)	0.10 mg/L	10
PCB-1260 (c)	0.000477 mg/L	9
Phenols, Total	1.0 mg/L	11
Pyrene (PAH) (PAH,c)	0.01 mg/L	10
Selenium, Total (*)	0.239 mg/L	9
Silver, Total (H)	0.0107 mg/l	14
Toluene	10.0 mg/L	3
Trichloroethylene (c)	0.0027 mg/L	3
Zinc, Total (H)	0.684 mg/L	14

Sources:

1 .**"EPA Recommended Ambient Water Quality Criteria." Acute Aquatic Life Freshwater.**
2. **"EPA Recommended Ambient Water Quality Criteria." Lowest Observed Effect Levels (LOEL) Acute Freshwater.**
3. **"EPA Recommended Ambient Water Quality Criteria." Human Health Criteria for Consumption of Water and Organisms.**
4. **Secondary Treatment Regulations (40 CFR 133).**
5. **Factor of 4 times BOD5 concentration - North Carolina benchmark.**
6. **North Carolina stormwater benchmark derived from NC Water Quality Standards.**
7. **National Urban Runoff Program (NURP) median concentration.**
8. **Median concentration of Stormwater Effluent Limitation Guideline (40 CFR Part 419)**
9. **Minimum Level (ML) based upon highest Method Detection Level (MDL) times a factor of 3.18.**
10. **Laboratory derived Minimum Level (ML).**
11. **Discharge limitations and compliance data.**
12. **"EPA Recommended Ambient Water Quality Criteria." Chronic Aquatic Life Freshwater.**
13. **Colorado - Chronic Aquatic Life Freshwater - Water Quality Criteria.**
14. **2009 ADEQ CPP and APCEC Regulation No. 2**

Notes:
(*) Limit established for oil and gas exploration and production facilities only.
(c) carcinogen.
(H) hardness dependent.
(PAH) Polynuclear Aromatic Hydrocarbon.
Assumptions:
Receiving water temperature - 20 °C.
Receiving water pH - 7.8.
Receiving water hardness ($CaCO_3$) - 100 mg/L.
Receiving water salinity - 20 g/kg.
Acute to Chronic Ratio (ACR) - 10.

Footnotes:
+ **Federal Register; Monday, October 30, 2000; Volume 65, No. 210; page 64767.**

3.10 **Alternatives to Parameter Benchmark Values**. The permittee may develop alternatives to the parameter benchmark values, as follows.

3.10.1 The SWPPP must contain a full and complete description of the alternative(s) to the established parameter benchmark values listed in this permit, along with the justification for the selected alternative(s), why the alternative(s) is considered equivalent to the listed parameter benchmark value in protecting water quality (if the permittee is establishing a different value than the established parameter benchmark value), how the alternative(s) will be evaluated to determine equivalency with the established parameter benchmark value, and documenting on an annual basis the permittee's ability to successfully achieve the alternative(s) to the established parameter benchmark values.

3.10.2 The permittee shall submit the section of the SWPPP with the alternative(s) and the rationale to the Department for review. The Department shall review the alternatives and notify the facility of such a decision in writing. The Department shall have 60 days to review the alternatives. If, after 60 days, the Department has not notified the Operator of its review findings, the permittee may begin to use the alternative(s) to the established parameter benchmark values. If the Department does not approve the alternatives(s), the permittee shall use the parameter benchmark values provided in Part 3.9.

3.11 **Response to Monitoring Results Above/Below Parameter Benchmark Values.** This permit stipulates parameter benchmark value concentrations that may be applicable to a facility's discharge. The benchmark concentrations are not effluent limitations. Therefore, a benchmark exceedance is not a permit violation. Benchmark monitoring data are primarily for the facility to use for determining the overall effectiveness of control measures and to assist in knowing when additional corrective action(s) may be necessary to comply with permit requirements.

3.11.1 **Data not exceeding benchmarks*:*** When a facility can effectively demonstrate that the results from four (4) consecutive monitoring periods for any parameter that complies with the Parameter Benchmark Value specified in Part 3.9, the facility may request in writing to forego sampling requirements during the remainder of the permit term. The certification must be signed in accordance with signatory requirements of Part 6.9 and Part 6.10 and must include a projected start and end dates and all lab results. The request and signed certification must be sent to ADEQ with DMRs. A copy of the certification must also be kept with the Stormwater Pollution Prevention Plan. The Department may request additional information before a decision is made. Facilities will be notified by letter of the Department's decision. Until such time that a letter is received the Department, the facility must continue to sample in accordance with Part 3.3.

3.11.2 **Data exceeding benchmarks:** If a sampling result for any parameter exceeds the parameter benchmark value, the facility shall investigate the cause and/or source of the elevated pollutant levels, review the SWPPP, and determine and document a corrective action plan to address the benchmark exceedance. The facility shall commence with the above process within 30 calendar days of the exceedance.

The Corrective Action Plan must contain the following: the results of the review; the corrective actions the permittee will take to address the benchmark excursion, including whether a SWPPP modification is necessary; and an implementation schedule including alternative methods for implementing existing site controls or methods for implementing additional effective site controls, if the site controls have not already been implemented.

The permittee must document the date that corrective actions are initiated and are completed or expected to be completed. This documentation must be included in an annual report and a copy retained onsite with the SWPPP. Once the corrective action plan has been determined, either

a. Implement corrective action plan and make necessary modification, and then continue to perform monitoring until 4 additional monitoring periods for which the results do not exceed the benchmark has been completed.

Or

b. If the facility is still exceeding parameter benchmark values after six (6) monitoring periods, the facility may request in writing to monitor annually in lieu of bi-annual monitoring. This may only be requested for after the permittee has made a determination that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice to meet the technology-based effluent limits or are necessary to meet the water-quality-based effluent limitations. The permittee must document the rationale/justification for concluding that no further pollutant reductions are achievable. This justification must be submitted along with the written request. Facilities will be notified of the Department's decision by letter. Until such time as the letter is received, the facility must continue to sample in accordance with Part 3.3. If annual monitoring is granted, the approval letter and justification must be retained with the SWPPP on-site.

3.11.3 Natural background pollutant level: If the permittee determines that the exceedances of the benchmark values is attributable solely to the presence of that pollutant in the natural background, the permittee is not required to perform corrective actions or additional benchmark monitoring. Provided that the following are met:

a. The concentration of the benchmark monitoring results is less than or equal to the concentration of that pollutant in the natural background (data from previous monitoring may be used);

b. The permittee documents and maintains with the SWPPP the supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. This must include in the supporting rationale any data previously collected by the facility or others (including literature studies) that describe the levels of natural background pollutants in the stormwater discharge; and

c. The Department must be notified on the annual report that the benchmark exceedances are attributable solely to natural background pollutant levels. Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on-site, or pollutants in run-on from neighboring sources which are not naturally occurring.

Compliance with the requirements of the above conditions does not relieve the permittee of the duty to comply with any other applicable conditions of this permit.

3.12 Record and Reporting Requirements.

3.12.1 Records. The Permittee shall retain records of all monitoring information, inspection reports, SWPPP, NOI, and any other documentation of compliance with permit requirements for a period of at least 3 years from the date that coverage under this permit expires or is terminated. Such information shall include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by ADEQ. The falsification of information submitted to the Department shall constitute a violation of the terms and conditions of this permit.

3.12.2 Records Contents. For each measurement or sample taken, the Permittee shall record the following information: (1) the date, exact place, method, and time of sampling or measurement; (2) the individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) the individual who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

3.12.3 Reporting.

a. Discharge Monitoring Reports: Permittees must record the monitoring results obtained from monitoring during the previous twelve (12) months on Discharge Monitoring Report (DMR) Forms dated no later than the 31st day of the month following the completed period. Reports are due by the 31st day of January each year for the previous January – December reporting period (i.e. January 31, 2010 for Year 2009). The first report may include less than the 12 months of information. Signed copies of Discharge Monitoring Reports required above, and all other reports required herein, shall be submitted to the Department in accordance with Part 6.9.

b. Annual Report. The permittee must submit an annual report to the Department, even if monitoring requirements has been waved, that includes the findings from the comprehensive site evaluation and site inspections (including visual monitoring of outfalls) and any corrective action plans written under Part 3.11.2. The permittee must include the status of any corrective actions not yet completed at the time of submission of this annual report.

The annual report should also include the following: Facility name, General permit tracking number, Facility physical address, and Contact person name, title, and phone number.

Reports are due by the 31st day of January each year for the previous January – December reporting period. All annual reports must be signed in accordance with the provisions of 40 CFR 122.22, as adopted by reference in APCEC Regulation No. 6, and Part 6.9 of this permit. Facilities should submit their annual report with any Discharge Monitoring Reports (if applicable).

3.12.4 Additional Monitoring by the Permittee. If the Permittee monitors any pollutant at any outfall more frequently than required by this permit using test procedures specified in this permit, then the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Permittee's DMR.

PART 4
STORMWATER POLLUTION PREVENTION PLANS (SWPPP)

A stormwater pollution prevention plan (SWPPP) shall be developed, implemented and complied with for each facility covered by this permit. SWPPPs shall be prepared in accordance with commonly accepted engineering practices. Required elements of the SWPPP, implemented in the form of Best Management Practices (BMPs) in lieu of numerical limitations, are considered to be technology-based non-numeric limits based on 40 CFR 122.44(K)(3). The SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with industrial activity from the facility. In addition, the plan shall describe and ensure the implementation of practices which are to be used to reduce pollutants in stormwater discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit, fully implemented as directed by permit conditions, and updated as necessary to maintain compliance with permit conditions. It must also include any additional Best Management Practices (BMPs) as necessary to comply with state water quality standards and parameter benchmark values. New facilities must have a SWPPP developed and implemented before beginning operation. However, some components of a SWPPP are added over time (e.g. results of dry and wet weather inspections) and cannot be included in the first SWPPP. The Permittee must update the SWPPP as required by permit conditions. Facilities must implement the provisions of the SWPPP required under conditions of this permit.

4.1 **Illicit Discharges.** The SWPPP shall include measures to identify and eliminate the discharge of process wastewater, domestic wastewater, non-contact cooling water, and other illicit discharges to stormwater drainage systems or to Waters of the State.

4.2 **SWPPP Availability.** The permittee must retain a copy of the current SWPPP required by this permit at the facility, and it must be immediately available to ADEQ, the operator of an MS4 receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service (USFWS) at the time of an onsite inspection or upon request. ADEQ may provide access to portions of a facility's SWPPP to a member of the public upon request.

If requested, the Permittee must submit their SWPPP to ADEQ within one (1) week of receiving the request if a date or timeframe was not specified in the request.

4.3 **Enhanced/Additional Best Management Practices (BMPs):** The Permittee shall provide a schedule in the SWPPP for implementation of any additional or enhanced BMPs that are necessary because of a notice from ADEQ, facility changes, or self-inspection. Complying with this provision does not limit the potential liability for enforcement action where the Permittee has failed to implement required BMPs or where stormwater discharges violate water quality standards. ADEQ may issue a notice to the Permittee when the SWPPP does not meet one or more of the minimum requirements of the permit or when it is not adequate to assure compliance with standards. The Permittee shall modify the SWPPP and the BMPs to correct the deficiencies identified in the notice. ADEQ may require additional BMPs where the Permittee exceeds benchmark values for required sampling. The Permittee shall modify the SWPPP whenever there is a change in design, construction, operation or maintenance of any BMP which cause(s) the SWPPP to be less effective in controlling the pollutants.

4.4 **Other Pollution Control Plans**: The Permittee may incorporate by reference applicable portions of plans prepared for other purposes at their facility. Plans or portions of plans incorporated into a SWPPP become enforceable requirements of this permit if the other plans are not regulated through other programs and must meet the availability requirements of the SWPPP.

4.5 Deadlines for SWPPP Preparation and Compliance. Deadlines for SWPPP preparation and compliance for stormwater discharge associated with industrial activity are as follows. Upon a showing of good cause, the Director may establish a later date in writing for preparing and coming into compliance with a SWPPP for a stormwater discharge associated with industrial activity that submits an NOI in accordance with requirements of this permit.

Category	Completion or Updating of SWPPP
New Dischargers	Shall be developed and then submitted to the Department along with the Notice of Intent.
Existing Dischargers in operation & authorized coverage under the 2004 IGP.	Shall be updated within 180 days of the effective date of this permit. Submittal is not required.

4.6 Contents of SWPPP. The SWPPP shall include, at a minimum, the following elements:

4.6.1 Facility Information. Each SWPPP shall include the facility name, general permit tracking number, facility physical address, and the facility's SIC and NAICS codes.

4.6.2 Stormwater Pollution Prevention Team. Each SWPPP shall identify a specific individual or position within the facility organization as members of a Stormwater Pollution Prevention Team that are responsible for developing the SWPPP and assisting the facility or plant manager in its implementation, maintenance, and revision. The SWPPP shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's SWPPP.

Please note that common positions (i.e. secretary, operator, etc) may not be used. A specific position or individuals name must be listed.

4.6.3 Facility Description: The facility description will describe the industrial activities conducted at the site (detailed process description), the general layout of the facility including buildings and storage of raw materials, and the flow of goods and materials through the facility. It should include seasonal variations including peaks in production and any changes in work based on season or weather (e.g. moving work outdoors on dry days).

4.6.4 Site map. Provide a map showing the following as necessary:

a. the size of the property in acres;
b. the location and extent of significant structures and impervious surfaces;
c. directions of stormwater flow (use arrows);
d. locations of all existing structural control measures;
e. locations of all receiving waters in the immediate vicinity of the facility,
f. locations of all stormwater conveyances including ditches, pipes, and swales;
g. locations of potential pollutant sources;
h. locations of all stormwater monitoring points;
i. locations of stormwater inlets and outfalls, with a unique identification code for each outfall, indicating if one or more outfalls is being treated as "substantially identical" , and an approximate outline of the areas draining to each outfall;
j. municipal separate storm sewer systems (MS4), where the stormwater discharges to them (if

applicable);

k. locations and descriptions of all non-stormwater discharges identified;
l. locations of the following activities where such activities are exposed to precipitation: fueling stations; vehicle and equipment maintenance and/or cleaning areas; loading/unloading areas; locations used for the treatment, storage, or disposal of wastes; liquid storage tanks; processing and storage areas; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; transfer areas for substances in bulk; and machinery; and
m. locations and sources of run-on to the site from adjacent property that contains significant quantities of pollutants.

4.6.5 **Description of potential pollutant sources.** Each SWPPP shall provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to stormwater discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each SWPPP shall identify all activities and significant materials which may potentially be significant pollutant sources. Each SWPPP shall include, at a minimum;

4.6.5.1 Industrial Activities. The inventory of industrial activities will identify all areas associated with industrial activities which have been or may potentially be sources of significant amounts of pollutants, including the following: i) Loading and unloading of dry bulk materials or liquids. ii) Outdoor storage of materials or products. iii) Outdoor manufacturing and processing. iv) Dust or particulate generating processes. v) Roofs or other surfaces exposed to air emissions from a manufacturing building or a process area. vi) On-site waste treatment, storage or disposal. vii) Vehicle and equipment fueling, maintenance and/or cleaning (includes washing). viii) Roofs or other surfaces composed of materials that may be mobilized by stormwater (e.g. galvanized or copper roofs).

4.6.5.2 Inventory of Exposed Materials. An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored, or disposed in a manner to allow exposure to stormwater between the time three years prior to the effective date of this permit and the present; method and location of on-site storage and disposal; materials management practices employed to minimize contact of these materials with stormwater runoff between the time of three years prior to the effective date of this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in stormwater runoff; and a description of any treatment the stormwater receives.

4.6.5.3 Spills and Leaks. A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas exposed to precipitation or that otherwise drain to a stormwater conveyance at the facility after the date of three years prior to the effective date of this permit. This list shall be updated as appropriate during the term of the permit.

4.6.5.4 Sampling Data. A summary of existing discharge sampling data describing pollutants in stormwater discharges from the facility, including a summary of sampling data collected during the term of this permit.

4.6.5.5 Risk Identification and Summary of Potential Pollutant Sources. A narrative description of the potential pollutant sources at the following areas: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; significant dust or particulate generating processes; and on-site waste disposal practices. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter (e.g. biochemical oxygen demand, etc.) of concern shall be identified.

4.6.6 Measures and Controls. Each facility covered by this permit shall develop a description of stormwater management controls appropriate for the facility and implement such controls. The appropriateness and priorities of controls in the SWPPP shall reflect identified potential sources of pollutants at the facility. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and manufacturer's specifications. Note that a permittee may deviate from such manufacturer's specifications where justification is provided for such deviation and include documentation of the rationale in the part of the SWPPP that describes the control measures. If control measures are found not to be achieving their intended effect of minimizing pollutant discharges, the control measures must be modified as expeditiously as practicable.

The following should be considered when selecting and designing control measures:

a. preventing stormwater from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from stormwater;
b. using control measures in combination is more effective than using control measures in isolation for minimizing pollutants in stormwater discharges;
c. assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit;
d. minimizing impervious areas at the facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches) can reduce runoff and improve groundwater recharge and stream base flows in local streams, although care must be taken to avoid ground water contamination;
e. attenuating flow using open vegetated swales and natural depressions can reduce in-stream impacts of erosive flows;
f. conserving and/or restoring of riparian buffers will help protect streams from stormwater runoff and improve water quality; and
g. using treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

For Guidance on potential pollutant sources and controls that should be considered in development of the SWPPP for a specific type of industry, refer to EPA's Multi-Sector General Permit (available online via link at (http://www.epa.gov/region6/6wq/npdes/sw/industry/index.htm). The description of stormwater management controls shall address the following minimum components, including a schedule for implementation.

4.6.6.1 Best Management Practices (BMPs). The SWPPP must include a description of the best management practices (BMPs) that are used by the facility to eliminate or reduce the potential to contaminate stormwater. BMPs must also be considered to regulate peak flow and volume of stormwater discharge.

4.6.6.2 **Minimize Exposure**. Exposure of potential pollutant sources in manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff should be minimized by either locating these industrial materials and activities inside or protecting them with storm resistant coverings (although significant enlargement of impervious surface area is not recommended). In minimizing exposure, one should pay particular attention to the following:

a. use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas;
b. locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas);
c. clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
d. use drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible;
e. use spill/overflow protection equipment;
f. drain fluids from equipment and vehicles prior to on-site storage or disposal;
g. perform all cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also that capture any overspray; and
h. ensure that all washwater drains to a proper collection system (i.e., not the stormwater drainage system).

4.6.6.3 **Good Housekeeping**. Good housekeeping requires exposed areas that are potential sources of pollutants in stormwater discharges in a clean, orderly manner.

4.6.6.4 **Preventive Maintenance.** A preventive maintenance program shall involve inspection and maintenance of stormwater management devices (cleaning oil/water separators, catch basins, etc.) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to waters, and ensuring appropriate maintenance of such equipment and systems.

4.6.6.5 **Spill Prevention and Response Procedures**. The facility must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. Areas where potential spills can occur that can contribute pollutants to stormwater discharges and their accompanying drainage points shall be identified clearly in the SWPPP. At a minimum, the following should be implemented:

a. Procedures for plainly labeling containers (e.g., “Used Oil,” “Spent Solvents,” “Fertilizers and Pesticides,” etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;

b. Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;

c. Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of the stormwater pollution prevention team; and

d. Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, one must notify the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as their is knowledge of the discharge. Contact information must be in locations that are readily accessible and available.

4.6.6.6 **Employee Training**. Employee training programs shall inform personnel responsible for implementing activities identified in the stormwater pollution prevention plan or otherwise responsible for stormwater management at all levels of responsibility of the components and goals of the SWPPP. Training should address topics such as spill response, good housekeeping, and material management practices. The SWPPP shall identify periodic dates for such training and records of training must be maintained with the SWPPP. Training records that are maintained electronically (i.e. database, etc) do not need to be maintained with the SWPPP, but must be accessible upon request.

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

4.6.6.8 **Management of Run-on and Runoff**. The SWPPP shall contain a narrative consideration of the appropriateness of traditional stormwater management practices (practices other than those which control the source of pollutants) used to divert, infiltrate, reuse, or otherwise manage stormwater runoff in a manner that reduces pollutants in stormwater discharges from the site. The SWPPP shall provide that measures determined to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to stormwater discharges associated with industrial activity shall be considered when determining reasonable and appropriate measures. Appropriate measures may include but are not limited to: vegetative swales and practices reuse of collected stormwater (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices.

4.6.6.9 **Additional requirements for salt storage.** Storage piles of salt used for deicing or other commercial or industrial purposes and which generate a stormwater discharge associated with industrial activity which is discharged to Waters of the State shall be enclosed or covered to prevent exposure to precipitation, except for exposure resulting from adding or removing materials from the pile. Dischargers shall demonstrate compliance with this provision as expeditiously as practicable, but in no event later than three years after the effective date of this permit. Piles do not need to be enclosed or covered where storm water from the pile is not discharged to Waters of the State.

4.6.7 **Authorized Non-Stormwater Discharges.** Except for flows from sources of non-stormwater listed in this permit that are combined with stormwater discharges associated with industrial activity must be identified in the SWPPP. The SWPPP shall identify and ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge.

The SWPPP shall also include a certification that the discharge has been tested or evaluated for the presence of non-stormwater discharges. The certification shall include the identification of potential significant sources of non-stormwater at the site, a description of the results of any test and/or evaluation for the presence of non-stormwater discharges, the evaluation criteria and testing method used, the date of any testing and/or evaluation, and the on-site drainage points that were directly observed during a test. Certifications shall be signed in accordance with Part 6.9. of this permit. Such certification may not be feasible if the facility operating the stormwater discharge associated with industrial activity does not have access to an outfall, manhole or other point of access to the ultimate conduit which receives the discharge. In such cases, the source identification section of the SWPPP shall indicate why the certification required by this part was not feasible, along with the identification of potential significant sources of non-stormwater at the site.

4.6.8 **Documentation of Permit Eligibility Related to the 303 (d) list (Impaired Water Bodies) and Total Maximum Daily Loads (TMDL).** The SWPPP should include information on whether or not the stormwater discharges from the facility enters a water body that is on the most recent 303 (d) list or with an approved TMDL. If the stormwater discharge does enter a water body that is on the most recent 303(d) list or with an approved TMDL, then the SWPPP should address the following items below.

a. document that the pollutant(s) for which the waterbody is impaired is not present at the facility, and retain documentation of the finding with the SWPPP; or

b. incorporate into the SWPPP any additional BMPs needed to prevent to the maximum extent possible exposure to stormwater of the pollutants for which the waterbody is impaired and to sufficiently protect water quality. Please note that the Department will be reviewing this information. If it is determined that the facility will discharge to an impaired water body, then the Department may require additional requirements." Or

c. identification of measures taken by the facility to ensure that its discharge of pollutants from the site is consistent with the assumptions and allocations of the TMDL; and

d. If a specific numeric wasteload allocation has been established that would apply to the facility's discharges, the operator must incorporate that allocation into its SWPPP and implement necessary steps to meet that allocation and implement necessary steps to meet that allocation. Please note that the Department will be reviewing this information. If it is determined that the facility will discharge to a TMDL, then the Department may require additional BMPs.

If the Department determines during the review process that the facility will be discharging to a receiving water that is on the most recent 303 (d) list or with an approved TMDL, then the Department will notify the applicant to include additional Best Management Practices in the SWPPP.

4.6.9 **Attainment of Water Quality Standards After Authorization.** The permittee must select, install, implement and maintain BMPs that will minimize or eliminate pollutants in the discharge as necessary to meet applicable water quality standards. At any time after authorization, the Department may determine that the stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, the Department will require the permittee to:

a. Develop a supplemental BMP action plan describing SWPPP modifications to address adequately the identified water quality concerns;

b. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

c. Cease discharges of pollutants from the facility and submit an individual permit application according to Part 6.22.

d. All written responses required under this part must include a signed certification consistent with Part 6.10.

4.6.10 <u>Evaluations and Inspections.</u>

4.6.10.1 <u>Visual Site Inspections.</u> Qualified facility personnel shall be identified to conduct routine facility inspections of all areas of the facility where industrial materials or activities are exposed to stormwater, all stormwater control measures used to comply with this permit, and stormwater outfalls (if accessible) for the presence of floating materials, visible sheen, discoloration, turbidity, odor, etc. Inspections should be performed not less than four (4) times a year.

At least one of the four required inspections must be conducted during a period when a stormwater discharge is occurring.

One inspection shall check for the presence of non-stormwater discharges, such as domestic wastewater, non-contact cooling water, or process wastewater (including leachate), to the stormwater drainage system that are not authorized under this general permit**.** This shall be done preferably during dry weather, when it is easier to find non-stormwater discharges. If a non-stormwater discharge is discovered, the Permittee shall notify ADEQ and eliminate the illicit discharge within 30 days.

The permittee must document the findings of each visual inspection performed and maintain this documentation onsite with the SWPPP. At a minimum, documentation of each site inspection must include: date of inspection, personnel making the inspection, major observations, and a summary of actions that need to be taken as a result of the inspection.

<u>Inactive and Un-staffed Sites</u>: The requirement to conduct visual site inspections on a quarterly basis does not apply at a facility that is inactive and unstaffed in accordance with Part 3.8.1, as long as there are no industrial materials or activities exposed to stormwater. Such a facility is only required to conduct an annual comprehensive site inspection in accordance with the requirements of Part 4.6.10.2.

4.6.10.2 <u>Comprehensive Site Compliance Evaluation</u>. Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the SWPPP, in no case less than once per year.

a. Areas contributing to a stormwater discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit and SWPPP, or whether additional control measures are needed. Structural stormwater management measures, sediment and control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are properly maintained and operated correctly. A visual inspection of equipment needed to implement the spill response shall be conducted.

b. Based on the results of the inspection, the description of potential pollutant sources identified in the SWPPP in accordance with Description of Potential Pollutant Sources of this permit and pollution prevention measures identified in the SWPPP in accordance with Measures and Controls of this permit shall be revised as appropriate within 30 days of such inspection. Implementation of any changes to the SWPPP made shall be performed in a timely manner, but in no case more than 90 days from the inspection.

c. A report summarizing the scope of the inspection, personnel making the inspection, date(s) of the inspection, major observations relating to the implementation of the SWPPP, and actions taken shall be made and retained as part of the SWPPP in accordance with Part 3.12.1. The report shall be signed in accordance with Part 6.9 of this permit.

d. The annual comprehensive site compliance evaluation may also be used as one of the routine inspections, as long as all requirements of both types of inspections are have been fulfilled.

4.6.11 **Recordkeeping and Internal Reporting Procedures**. A description of incidents such as spills or other discharges, along with other information describing the quality and quantity of stormwater discharges shall be included in the SWPPP required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the SWPPP.

4.6.12 **Certification.** All SWPPP must contain a certification per Part 6.10 of this permit and must be signed in accordance with the provisions of 40 CFR 122.22, as adopted by reference in APCEC Regulation No. 6, and Part 6.9 of this permit.

PART 5
ADDITIONAL CONDITIONS

5.1 **Water Quality Standards.** The discharge of stormwater associated with industrial activity must be controlled as necessary to meet applicable water quality standards. The Department expects that compliance with the other conditions in this permit will control discharges as necessary to meet applicable water quality standards. If at any time the facility becomes aware or the Department determines that a stormwater discharge causes or contributes to an exceedance of applicable water quality standards, corrective action will be required.

5.2 **Toxicity Testing Requirements.** The determination as to which facilities will be required to perform toxicity testing will be made on a case-by-case basis based on available information and monitoring data. The permittee will be provided written notice by the Department if toxicity testing is required.

5.3 **Toxicity Testing Procedure**. Permittees that are required to conduct Whole Effluent Toxicity testing must continue to monitor for acute Whole Effluent Toxicity unless testing is no longer required per the provisions of Part 5.3.3.

5.3.1 The permittee shall conduct acute Whole Effluent Toxicity tests on appropriate test organisms in accordance with the provisions in this section. The following tests shall be used:

- Acute 24-hour static toxicity test using *Daphnia pulex*.
- Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*).
- All test organisms, procedures and quality assurance criteria used shall be in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA600/4-90/027F (August 1993) or the latest update thereof. Tests shall be conducted annually under this general permit. The first test shall be initiated in accordance with the schedule described above. Such tests shall be conducted on a grab sample of the discharge at 100% strength (no dilution). Synthetic (reconstituted) water should be used as control water in all cases, and should be similar to receiving water. (As a general rule, ADEQ advocates using moderately hard water as this approximates most of the water in the State). If 10% or more mortality occurs in the control, the test shall be repeated until the control mortality does not exceed 10%. Results of all tests conducted with any species shall be compiled according to EPA600/4-90/027F, Section 12, Report Preparation, and be retained on-site. Only sections 12.4 (Test Conditions), 12.6 (Quality Assurance) and 12.7 (Results) of the full report shall be submitted to ADEQ with the appropriate Discharge Monitoring Report. The permittee shall also complete and submit the ADEQ Toxicity Summary Report Forms included with the DMR forms and instructions for each monitoring category. A “passing” test is a test in which there is no statistically significant difference between the control mortality and the effluent mortality. A “failing” test is a test in which there is a statistically significant difference between the control mortality and the effluent mortality. The permittee's Discharge Monitoring Reports (DMRs) will report "0" if there is no statistical difference between the control mortality and the effluent mortality, and shall report "1" if a statistical difference exists.

5.3.2 If acute Whole Effluent Toxicity (statistically significant difference between the 100% effluent and the control) is detected in stormwater discharges in tests required to be conducted, the permittee shall review the stormwater pollution prevention plan and make appropriate modifications to assist in identifying the source(s) of toxicity and to reduce or eliminate the toxicity of their stormwater discharges. A summary of the review and the resulting modifications shall be documented in the plan.

5.3.3 The facility may request in writing for testing for acute Whole Effluent Toxicity to be deleted as a requirement after passing two (2) consecutive annual testing periods. The Department will provide a decision in writing. If a facility has fails two (2) testing periods (annually), quarterly testing for Acute Whole Effluent Toxicity will be required until the facility has passed two consecutive quarterly tests. After two consecutive quarterly periods in which tests on both toxicity test species have passed, the facility shall resume annual testing. If, during the first year of quarterly testing a facility fails all four quarterly testing periods for Acute Whole Effluent Toxicity, the facility will be required to increase monitoring or improve BMP's and obtain an Individual permit.

PART 6
STANDARD PERMIT CONDITIONS

6.1 <u>Retention of Records.</u>

The operator shall retain records of all stormwater pollution prevention plans, all inspection reports required by this permit, and records of all data used to complete the Notice of Intent to be covered by this permit for a period of at least three years from the date the Notice of Termination letter is signed by the Department. This period may be extended by request of the Director at any time.

6.2 <u>Duty to Comply</u>. The operator must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for: enforcement action; permit termination, revocation and re-issuance, or modification; or denial of a permit renewal application.

6.3 <u>Penalties for Violations of Permit Conditions</u>. The Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended) provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a criminal penalty of not more than twenty five thousand dollars ($25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars ($10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

6.4 <u>Continuance of the Expired General Permit</u>. An expired general permit including no exposure certification continues in force and effect until a new general permit is issued. If this permit is not re-issued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and remain in force and effect. If permit coverage was granted prior to the expiration date, permit coverage is automatically continued until the earliest of:

a. Reissuance or replacement of this permit, at which time the operator must comply with the conditions of the new permit to maintain authorization to discharge and, the operator is required to notify the Department of his/her intent to be covered under this permit within 180 days after the effective date of the renewal permit ; or

b. Submittal of a Notice of Termination; or

c. Issuance of an individual permit for the facility's discharges; or

d. A formal permit decision by the ADEQ to not re-issue this general permit, at which time the facility must seek coverage under an individual permit or other alternate permits.

6.5 <u>Need to Halt or Reduce Activity Not a Defense</u>. It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6.6 <u>Duty to Mitigate</u>. The operator shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has reasonable likelihood of adversely affecting human health or the environment.

6.7 **<u>Duty to Provide Information</u>.** The operator shall furnish to the Director, an authorized representative of the Director, the EPA, a State or local agency reviewing sediment and erosion plans, grading plans, or stormwater management plans, or in the case of a stormwater discharge associated with industrial activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the municipal operator of the system, within a reasonable time, any information which is requested to determine compliance with this permit.

6.8 **<u>Other Information</u>.** When the operator becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to the Director, he or she shall promptly submit such facts or information.

6.9 **<u>Signatory Requirements</u>.** All Notices of Intent, reports, or information submitted to the Director or the operator of a regulated small, medium, or large municipal separate storm sewer system shall be signed and certified. All Notices of Intent shall be signed as follows:

6.9.1 For a corporation: by a responsible corporate officer. For purposes of this section, a responsible corporate officer means:

a. A president, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

b. The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capitol investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

6.9.2 For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;

6.9.3 For a municipality, State, Federal or other public agency: By either a principal executive or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

a. The chief executive officer of the agency; or

b. A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

6.9.4 All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a <u>duly authorized</u> representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described above and submitted to the Director;

b. The authorization specifies either an individual or a person having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility, or position of equivalent responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

c. Changes to authorization. If an authorization under this Part is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the above requirements must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

6.10 Certification. Any person signing a document under this section shall make the following certification:

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

6.11 Penalties for Falsification of Reports. The Arkansas Water and Air Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained under this permit shall be subject to civil penalties and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

6.12 Penalties for Tampering. The Arkansas Water and Air Pollution Control act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than twenty five thousand dollars ($25,000) or by both such fine and imprisonment.

6.13 Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties to which the operator is or may be subject under Section 311 of the Clean Water Act or Section 106 of CERCLA.

6.14 Property Rights. The issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property, any invasion of personal rights, or any infringement of Federal, State, or local laws or regulations.

6.15 Severability. The provisions of this permit are severable. If any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provisions to other circumstances and the remainder of this permit shall not be affected thereby.

6.16 Transfers. This permit is not transferable to any person except after notice to the Director. A transfer form must be submitted to the ADEQ as required by this permit.

6.17 Proper Operation and Maintenance. The operator shall at all times:

a. Properly operate and maintain all control (and related appurtenances) which are installed or used by the operator to achieve compliance with the conditions of this permit. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by an operator only when the operation is necessary to achieve compliance with the conditions of the permit.

b. Provide an adequate operating staff which is duly qualified to carry out operation, inspection, maintenance, and testing functions required to insure compliance with the conditions of this permit.

6.18 Inspection and Entry. The operator shall allow the Director, the EPA, or an authorized representative, or, in the case of a facility which discharges to a municipal separate storm sewer, an authorized representative of the municipal operator of the separate sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the operator's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
c. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

6.19 Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following;

a. Violation of any terms or conditions of this permit;
b. Obtaining this permit by misrepresentation or failure to fully disclose all relevant facts;
c. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge;
d. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or
e. Failure of the operator to comply with the provisions of ADEQ Regulation No. 9 (Fee Regulation). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR 122.64 and 124.5(d), as adopted by reference in ADEQ Regulation No. 6, and the provisions of ADEQ Regulation No. 8.

6.20 Re-Opener Clause. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with industrial activity covered by this permit, the operator of such discharge may be required to obtain an individual permit or an alternative general permit in accordance with Part 6.22 of this permit, or the permit may be modified to include different limitations and/or requirements. Permit modification or revocation will be conducted in accordance with the provisions of 40 CFR 122.62, 122.63, 122.64 and 124.5, as adopted by reference in ADEQ Regulation No. 6.

6.21 Local Requirements. All dischargers must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding any discharges of stormwater to storm drain systems or other water sources under their jurisdiction, including applicable requirements in municipal stormwater management programs developed to comply with the ADEQ permits. Dischargers must comply with local stormwater management requirements, policies, or guidelines including erosion and sediment control.

6.22 Requiring an Individual NPDES Permit or an Alternative General Permit.

a. At the discretion of the Director, he/she may require any operator covered under this general permit to apply for and obtain an individual NPDES permit for reasons that include but are not limited to the following:

   i. The discharger is a significant contributor of pollution;
   ii. The discharger is not in compliance with the conditions of the general permit;
   iii. Conditions or standards have changed so that the discharger no longer qualifies for a general permit;
   iv. Discharges into 303(d) listed stream segments is prohibited if the impairment was caused by any of the pollutants listed in the permit; and
   v. If the total maximum daily load (TMDL) requirement is more stringent than this permit then permittee shall apply for an individual permit.

b. The operator must be notified in writing that an application for an individual permit is required. When an individual NPDES permit is issued to an owner or operator otherwise covered under this general permit, the applicability of the general permit to that owner or operator automatically terminates upon the effective date of the individual NPDES permit.

c. Any operator covered by this General Permit may request to be excluded from the coverage by applying for an individual NPDES permit.

6.23 Non-compliance Notification.

In the event the Permittee is unable to comply with any of the terms and conditions of this permit that could result in the discharge of pollutants in a significant amount, the Permittee shall:

a. Take immediate action to minimize potential contamination or otherwise stop the noncompliance and correct the problem;
b. Immediately notify ADEQ of the failure to comply; and
c. Submit a detailed written report to ADEQ within thirty [30] days unless ADEQ requests an earlier submission.

The report shall contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

PART 7
DEFINITIONS

7.1 **"ADEQ"** or **"Department"** is referencing the Arkansas Department of Environmental Quality. The Department is the governing authority for the National Pollutant Discharge Elimination System program in the state of Arkansas.

7.2 **"Arkansas Pollution Control and Ecology Commission"** shall be referred to as APCEC throughout this permit.

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

7.4 **"Coal Pile Runoff"** means the rainfall runoff from or through any coal storage area.

7.5 **"Contaminated"** means the presence of or entry into the MS4, Waters of the State, or Waters of the United States of any substance which may be harmful to the public health and/or the quality of the water.

7.6 **"Control Measure"** as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to Waters of the State.

7.7 **"CWA"** means the Clean Water Act or the Federal Water Pollution Control Act.

7.8 **"Director"** means the Director, Arkansas Department of Environmental Quality, or a designated representative.

7.9 **"Discharge"** when used without qualification means the "discharge of a pollutant".

7.10 **"Eligible"** qualified for authorization to discharge stormwater under this general permit.

7.11 **"Impaired Water"** a water body listed in the current, approved Arkansas 303(d) list.

7.12 **"Harmful quantity"** means the amount of any substance that will cause pollution of Waters in the State, Waters of the United States, or that will cause lethal or sub-lethal adverse effects on representative, sensitive aquatic monitoring organisms, upon their exposure to samples of any discharge into Waters in the State, Waters of the United States, or the MS4.

7.13 **"Land Application Unit"** means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

7.14 **"Landfill"** means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

7.15 **"Large and Medium Municipal Separate Storm Sewer System"** means all municipal separate storm sewer systems that are either:

a. Located in an incorporated place with a population of 100,000 or more as determined by the 1990 Decennial Census by the Bureau of the Census (Appendix F of 40 CFR Part 122.26); or

b. Located in the counties listed in Appendix H of 40 CFR 122.26, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or

c. Owned or operated by a municipality other than those described in paragraph (b)(4) (i) or (ii) of 40 CFR 122.26 and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(4)(i) or (ii) of 40 CFR 122.26.

7.16 **"<u>NOI</u>"** means Notice of Intent to be covered by this permit.

7.17 **"<u>NOT</u>"** means Notice of Termination.

7.18 **"<u>Operator</u>"** for the purpose of this permit and in the context of stormwater associated with industrial activity, means any person (an individual, association, partnership, corporation, municipality, state or federal agency) who has the primary management and ultimate decision-making responsibility over the operation of a facility or activity. The operator is responsible for ensuring compliance with all applicable environmental regulations and conditions.

7.19 **"<u>Outfall</u>"** means a point source where stormwater leaves the site.

7.20 **"<u>Physically Interconnected</u>** means that one municipal separate storm sewer system is connected to a second municipal separate storm sewer system in such a way that it allows for direct discharges into the second system.

7.21 **"<u>Point Source</u>"** means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

7.22 **"<u>Small Municipal Separate Storm Sewer System</u>"** means all municipal separate storm sewer systems that are either:

a. Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to Waters of the United States.

b. Not defined as "large" or "medium" municipal separate storm sewer systems pursuant to paragraphs (b)(4) and (b)(7) 40 CFR 122.26, or designated under paragraph (a)(1)(v) of 40 CFR 122.26.

c. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

7.23 **"<u>Runoff Coefficient</u>"** means the fraction of total rainfall that will appear at the conveyance as runoff.

7.24 **"<u>Significant Materials</u>"** includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

7.25 **"<u>Significant Spills</u>"** includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (see 40 CFR 110.10 and 40 CFR 117.21) or Section 102 of CERCLA (see 40 CFR 302.4).

7.26 **"<u>Stormwater</u>"** means stormwater runoff, snow melt runoff, and surface runoff and drainage.

7.27 **"<u>Stormwater Associated with Industrial Activity</u>"** means the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program. For the categories of industries identified in subparagraphs (i) through (xi) of this definition, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at 40 CFR 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. For the purposes of this paragraph, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described, regulated areas. Industrial facilities (including industrial facilities that are Federally, State or municipally owned or operated that meet the description of the facilities listed in paragraphs (i) - (xi)) include those facilities designated under 122.26(a)(1)(v). The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this subsection:

(i) Facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR Subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi) of this paragraph; “Note that the phrase ‘toxic pollutant effluent standards’ refers to standards codified at 40 CFR 129 which applies only to manufacturers of 6 specific pesticide products that are defined as toxic pollutants. The phrase does not apply to facilities subject to effluent limitation guidelines for toxics under 40 CFR Subchapter N.”

(ii) Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373;

(iii) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations meeting the definition of a reclamation area under 40 CFR 434.11(l)) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge stormwater contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, by-products, or waste products located on the site of such operations; inactive mining operations are mining sites that are not being actively mined, but which have an identifiable Operator;

(iv) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;

(v) Landfills, land application sites, and open dumps that have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to Subtitle D of RCRA;

(vi) Facilities involved in the recycling of materials, including junkyards, battery reclaimers, salvage yards, and automobile junkyards, including but not limited to those classified as Standard Industrial Classification 5015 and 5093;

(vii) Steam electric power generating facilities, including coal handling sites;

(viii) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-4225), 43, 44, 45 and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (i) - (vii) or (ix) - (xi) of this subsection are associated with industrial activity;

(ix) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 MGD or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with 40 CFR 405.

(x) Construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than five acres of total land area. Construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more;

(xi) Facilities under Standard Industrial Classifications 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, 4221 -4225.

7.28 **"Stormwater Pollution Prevention Plan (SWPPP or SWP3)"** a plan that includes site map(s), an identification of facility, activities that could cause pollutants in the stormwater, and a description of measures or practices to control these pollutants (BMPs).

7.29 **"Total Maximum Daily Load" or "TMDL"** the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for non-point sources and natural background. If receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any non-point sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

7.30 **"Uncontaminated"** means that the water will not exceed the water quality standards as set forth in APCEC Regulation 2; also not containing a harmful quantity of any substance.

7.31 **"Urbanized Area"** means the areas of urban population density delineated by the Bureau of the Census for statistical purposes and generally consisting of the land area comprising one or more central place(s) and the adjacent densely settled surrounding area that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile as determined by the latest Decennial Census by the Bureau of Census.

7.32 **"Waste Pile"** means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

7.33 "**10-year, 24-hour Precipitation Event**" means the maximum 24-hour precipitation event with a probable reoccurrence interval of once in 10 years. This information is available in "Weather Bureau Technical Paper No. 40", May 1961 and "NOAA Atlas 2", 1973 for the 11 Western States, and may be obtained from the National Climatic Center of the Environmental Data Service, National Oceanic and Atmospheric Administration, U. S. Department of Commerce.

SIMS METAL MANAGEMENT

CLEAN WATER ACT COMPLIANCE PLANS

LONOKE YARD
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

STORM WATER POLLUTION PREVENTION PLAN, MAY 2012
Appendix A Facility Diagrams
Appendix B Facility Oil Storage and Potential Pollutant Sources Inventory
Appendix C Example Forms
Appendix D Storm Water Permit
Appendix E Best Management Practices Manual
Appendix F Training Presentations
Appendix G Records

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SIMS METAL MANAGEMENT
STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES MANUAL

Best Management Practices (BMPs) are measures used to prevent or reduce pollution from any type of activity. BMPs may include processes, procedures, schedules of activities, prohibitions on practices, and other additional management practices to prevent or reduce water pollution. They are anything which may be identified as a method; inexpensive or costly, short of actual treatment, to curb water pollution. BMPs can be almost anything that prevents toxic or hazardous substances from entering the environment.

The purpose of this appendix of the Storm Water Pollution Prevention Plan (SWPPP) is to be a reference when selecting BMPs at the site and to describe some basic BMPs required for inclusion in the SWPPP.

Implementing these or other BMPs should be documented and maintained as part of the overall SWPPP. The effectiveness of the BMPs selected should be evaluated annually or when conditions warrant additional evaluations.

This BMP Manual is comprised of fact sheets that are organized by activity. The following checklists may be used to select BMPs when new projects are planned or when problems are encountered during storm water inspections.

BMP CHECKLIST

ADMINISTRATIVE SOURCE CONTROL BMPs			
☐	ASC-1 GOOD HOUSEKEEPING	☐	ASC-7 RECORD KEEPING
☐	ASC-2 PREVENTATIVE MAINTENANCE	☐	ASC-8 PREVENTATIVE MONITORING PRACTICES
☐	ASC-3 VISUAL INSPECTIONS	☐	ASC-9 SECURITY
☐	ASC-4 SPILL PREVENTION AND RESPONSE	☐	ASC-10 AREA CONTROL PROCEDURES
☐	ASC-5 MANAGEMENT OF RUNOFF	☐	ASC-11 SIGNS AND LABELS
☐	ASC-6 PERSONNEL TRAINING		
VEHICLE AND EQUIPMENT MANAGEMENT BMPs			
☐	VEM-1 FUELING STATIONS	☐	VEM-5 DRIP PANS
☐	VEM-2 VEHICLE AND EQUIPMENT MAINTENANCE	☐	VEM-6 VEHICLE POSITIONING
☐	VEM-3 PAINTING OPERATIONS	☐	VEM-7 LOADING AND UNLOADING BY AIR PRESSURE OR VACUUM
☐	VEM-4 VEHICLE AND EQUIPMENT WASHING	☐	VEM-8 VEHICLE WASHING
MATERIAL AND WASTE MANAGEMENT BMPs			
☐	MWM-1 LOADING AND UNLOADING	☐	MWM-7 COVERING
☐	MWM-2 LIQUID STORAGE IN ABOVEGROUND TANKS	☐	MWM-8 SWEEPING
☐	MWM-3 INDUSTRIAL WASTE MANAGEMENT AREAS AND OUTSIDE MANUFACTURING	☐	MWM-9 SHOVELING
☐	MWM-4 OUTSIDE STORAGE OF RAW MATERIALS, BY-PRODUCTS, OR FINISHED PRODUCTS	☐	MWM-10 SORBENTS
☐	MWM-5 CONTAINMENT DIKING	☐	MWM-11 GELLING AGENTS
☐	MWM-6 CURBING		
STORM WATER ENGINEERING BMPs			
☐	SE-1 STORM WATER CONVEYANCES	☐	SE-7 VACUUM AND PUMP SYSTEMS
☐	SE-2 DIVERSION DIKES	☐	SE-8 PIPE SLOPE DRAINS
☐	SE-3 GRADED AREAS FOR PAVEMENT	☐	SE-9 SUBSURFACE DRAINS
☐	SE-4 COLLECTION BASINS	☐	SE-10 LEVEL SPREADERS
☐	SE-5 SUMPS	☐	SE-11 INFILTRATION TRENCHES
☐	SE-6 EXCAVATION PRACTICES	☐	SE-12 POROUS PAVEMENTS/CONCRETE GRIDS AND MODULAR PAVEMENTS
SEDIMENT AND EROSION CONTROL PRACTICES (PERMENANT)			
☐	SECP-1 SEDIMENT AND EROSION AND PREVENTION PRACTICES	☐	SECP-6 STREAM BANK STABILIZATION
☐	SECP-2 DUST CONTROL (INDUSTRIAL)	☐	SECP-7 MULCHING, MATTING AND NETTING
☐	SECP-3 VEGETATION PRACTICES	☐	SECP-8 PERMANENT SEEDING AND PLANTING
☐	SECP-4 PRESERVATION OF NATURAL VEGETATION	☐	SECP-9 SODDING
☐	SECP-5 BUFFER ZONES	☐	SECP-10 GRASSED SWALES

SEDIMENT AND EROSION CONTROL PRACTICES (TEMPORARY)			
☐	EC-1 DUST CONTROL (LAND DISTURBANCE AND DEMOLITION AREAS)	☐	EC-9 STORM DRAIN INLET PROTECTION
☐	EC-2 TEMPORARY SEEDING	☐	EC-10 SEDIMENT TRAPS
☐	EC-3 CHEMICAL STABILIZATION	☐	EC-11 TEMPORARY SEDIMENT BASINS
☐	EC-4 INTERCEPTOR DIKES AND SWALES	☐	EC-12 OUTLET PROTECTION
☐	EC-5 FILTER FENCES	☐	EC-13 CHECK DAMS
☐	EC-6 STRAW BALE BARRIERS	☐	EC-14 SURFACE ROUGHENING
☐	EC-7 BRUSH BARRIERS	☐	EC-15 GRADIENT TERRACES
☐	EC-8 GRAVEL OR STONE FILTER BERMS	☐	EC-16 VEGETATED FILTER STRIPS

ASC-1 GOOD HOUSEKEEPING

Good housekeeping involves using common sense to identify ways to maintain a clean and orderly facility and keep contaminants out of separate storm sewers. It includes establishing procedures to reduce the possibility of mishandling chemicals or equipment and training employees in good housekeeping techniques.

Good housekeeping requires that areas, which may contribute pollutants to storm water discharges, are maintained in a clean, orderly manner.

Operation and Maintenance

These practices make sure that processes and equipment are working well. Basic operation and maintenance BMPs incorporated in the good housekeeping program are:

- Regular pick up and disposal of loose garbage and waste material on site outside of active fill areas.
- Make sure equipment is working properly (Refer to Maintenance BMPs ASC-2).
- Routinely inspect for leaks or conditions that could lead to discharges of chemicals or contact of storm water with raw materials, intermediate materials, waste materials, or products (Refer to Visual Inspection BMPs ASC-3).
- Ensure that spill cleanup procedures are understood by employees (Refer to Spill Prevention and Response BMPs ASC-4).

Material Storage Practices

Improper storage can result in the release of materials and chemicals that can cause storm water runoff pollution. Proper storage technique BMPs incorporated into the good housekeeping program are:

- Provide adequate space to facilitate material transfer and easy access for inspections.
- Store containers, drums, and bags away from direct traffic routes to prevent accidental spills.

- Stack containers according to manufacturer's instructions to avoid damaging the containers from improper weight distribution.

- Store containers on pallets or similar devices to prevent corrosion of the containers which can result when containers come in contact with moisture on the ground.

- Assign the responsibility of hazardous material inventory to a limited number of people who are trained to handle hazardous materials.

Material Inventory Procedures

Improved material tracking and inventory practices can reduce the waste that results from overstocking and the disposal of outdated materials. Careful tracking of all ordered materials may also result in efficient materials use. Material Inventory Procedures incorporated in the good housekeeping program are listed below:

- Identify all chemical substances present at the facility. Review the site and the purchase orders for the previous year. List all chemical substances used at the facility, and then obtain the Material Safety Data Sheet (MSDS) for each. Keep MSDSs available to all employees.

- Label all containers to show the name and type of substance, stock number, expiration date, health hazards, suggestions for handling, and first-aid information.

- Clearly mark on the inventory hazardous materials that require special handling, storage, use, and disposal considerations.

The emergency control system should determine the amount of hazardous materials stored at a facility. Make sure that storage areas are designed to contain spills.

Employee Participation

Employees should be trained regularly in good housekeeping practices to reduce mishandling of chemicals/equipment.

ASC-2 PREVENTATIVE MAINTENANCE

The preventive maintenance program includes:

- Timely inspection and maintenance of storm water management devices (for example, cleaning catch basins).

- Inspecting and testing facility equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters.

- Proper facility equipment and systems maintenance.

Preventive maintenance involves regularly inspecting and testing facility equipment and operational systems. These inspections should uncover conditions such as cracks or slow leaks which could cause breakdowns or failures that result in discharges of chemicals to storm sewers/surface waters. The program should prevent breakdowns and failures by adjustment, repair or replacement of equipment. The preventive maintenance program includes the following elements:

- Identifying equipment, systems, and facilities and surrounding areas that must be inspected.

- Schedule for periodic inspections or tests of these equipment and systems.

- Appropriate and timely adjustment, repair, or replacement of equipment and systems.

- Maintenance and updating of complete records on inspections, equipment, and systems.

Identification of Equipment to Inspect
The first step is to identify which systems or equipment may malfunction and cause spills, leaks, or other situations that could lead to storm water runoff contamination. Identifying equipment as a BMP will include inspecting the following as a minimum:

- Pipes
- Pumps
- Storage tanks and bins
- Pressure vessels

- Pressure release valves
- Process and material handling equipment
- Storm water management devices (catch basins, or other structural or treatment BMPs).

Schedule Routine Preventive Maintenance Inspections

Schedules will be set for routine inspections once equipment and areas have been identified. Examination for leaks, corrosion, support or foundation failure, or other forms of deterioration or leaks should be included. Look for spots or puddles of chemicals or fluid leaks and document any detection of smoke, fumes, or other signs of leaks. Periodic testing of facility equipment for structural soundness is a key element of preventive maintenance.

Preventive maintenance inspections must be conducted as part of regular visual inspections.

Equipment Repair or Replacement

Promptly repair or replace defective equipment found during inspections and tests.

Records on Preventive Maintenance

- Complete an equipment inspection form monthly.
- Record test results and follow up with corrective action.
- Make sure records are complete and detailed.
- These records will be kept with other visual inspection records as part of this SWPPP.

ASC-3 VISUAL INSPECTIONS

Regular visual inspections are performed to verify that all of the elements of the plan are in place and working properly. The visual inspection program must include the following:

- Identifying qualified facility personnel who will inspect equipment and areas at appropriate intervals in the plan.
- Verifying corrective action.
- Maintaining all inspection/records.

Areas to Inspect

- Areas around all equipment
- Areas where spills and leaks have occurred in the past
- Material storage areas (tank farms, drum storage)
- Outdoor material processing areas
- Material handling areas (loading, unloading, transfer)
- Waste generation, storage, treatment, and disposal areas.

These areas will be inspected and documented monthly.

Implementing a Visual Inspection Plan

If the facility has no established inspection program, then a plan must be developed. Appropriate personnel are responsible for conducting the inspections. It is important to remember that the employees carrying out the visual inspection program should be properly trained, familiar with the storm water pollution prevention program, and knowledgeable about proper record keeping and reporting procedures.

Records of Inspections

Inspection records will note:

- When inspections were done
- Who conducted the inspection
- What areas were inspected
- What problems were found
- Corrective action
- Who has been notified

These records should be kept with the SWPPP. The U.S. Environmental Protection Agency's (USEPA) General Permit requires that records be kept until at least 1 year after coverage under the permit expires.

Visual Inspection Checklist

Note the minimum inspection items below:

- Corroded drums or drums without plugs or covers
- Corroded or damaged tanks, tank supports, and tank drain valves
- Corroded or leaking pipes
- Leaking or improperly closed valves and valve fittings
- Leaking pumps and/or hose connections
- Broken or cracked dikes, walls or other physical barriers designed to prevent storm water from reaching stored materials
- Windblown dry chemicals
- Leaking or corroded components.

ASC-4 SPILL PREVENTION AND RESPONSE

Spills and leaks together are one of the largest industrial sources of storm water pollutants, and are in most cases avoidable. Establishing standard operating procedures such as safety and spill prevention procedures along with proper employee training can reduce accidental releases. Avoiding spills and leaks is preferable to cleaning them up, not only from an environmental standpoint, but because spills increase operating costs and lower productivity.

Identify Potential Spill Areas

As part of this SWPPP, a list or inventory of materials handled, used, and disposed of, and a site map indicating the drainage area of each storm water outfall is included. Refer to drainage map with the locations of areas and activities with high material spill potential to determine where spills will most likely occur. Spill potential also depends upon how materials are handled, the types and volumes of materials handled, and how materials are stored.

Material Handling Procedures and Storage Requirements

By developing various spill scenarios, ideas for eliminating or minimizing the spill or its impact will emerge. These solutions should be prioritized and adopted according to conditions of effectiveness, cost, feasibility, and ease of implementation. A list of some suggested activities that may reduce the potential of spills that will occur/impact storm water quality follows:

- Expand ways to recycle, reclaim, and/or reuse materials to reduce the volume brought into the facility.

- Install leak detection devices, overflow controls, and diversion berms.

- Use effective housekeeping practices.

- Perform regular visual inspections to identify signs of wear on tanks, drums, containers, and berms and to identify messy housekeeping or other clues that could lead to potential spills.

- Perform preventive maintenance on storage tanks, valves, pumps, pipes and other equipment that may be present.

- Use filling procedures for tanks/other equipment that minimize spills.

- Use material transfer procedures that reduce the chance of leaks/spills.

- Substitute less toxic or nontoxic materials for toxic materials.

- Provide appropriate security.

ASC-5 MANAGEMENT OF RUNOFF

Managing runoff is the consideration of appropriate traditional storm water management practices (practices other than those which control the source of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. Procedures determined to be reasonable and appropriate must be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges from industrial activity must be considered when determining reasonable and appropriate measures. Appropriate measures may include:

- Vegetated swales (vegetated depression used to transport, filter, and remove sediment)
- Reusing collected storm water (such as for a process or as an irrigation source)
- Inlet controls (such as oil/water separators)
- Snow management activities
- Infiltration devices
- Wet detention/retention devices

Many BMPs are measures to reduce pollutants at the source before they have an opportunity to contaminate storm water runoff. Traditional storm water management practices can be used to direct storm water away from areas of exposed materials/potential pollutants. Traditional storm water management practices can be used to direct storm water that contains pollutants to natural or other types of treatment locations. For example, using an oil/water separator on storm water that has oil and grease will remove some of the oil and grease before the storm water leaves the site. Permits will generally not require specific storm water management practices since these practices must be selected on a case-by-case basis depending upon the activities at the site.

ASC-6 PERSONNEL TRAINING

Employee training programs must inform personnel at all levels of responsibility of the components and goals of the SWPPP. Training should address each component of the SWPPP, including how and why tasks are to be implemented. Similar BMP topics include:

- Spill prevention and response
- Good housekeeping
- Material management practices

Personnel training is essential for effective implementation of the SWPPP. The purpose of a training program is to teach personnel at all levels of responsibility the components and goals of the SWPPP.

The following sections discuss how to create an effective storm water pollution prevention training program.

Spill Prevention and Response

Spills can occur from equipment and containers containing petroleum products (gas, diesel fuel, oil, lubricating grease, hydraulic fluids). ***Spills from these services must be repaired and cleaned up in accordance with accepted local, state, and federal standards*****.**

Good Housekeeping

All employees must be trained in proper good housekeeping practices. Training must include a thorough discussion with all employees annually. New employees must receive instruction before beginning work. Each employee must be briefed on the items below:

- Require regular vacuuming and/or sweeping of interior spaces; sweeping and/or wetting.

- Promptly cleaning up spilled materials to prevent polluted runoff.

- Identifying places where brooms, vacuums, sorbents, foams, neutralizing agents, and other good housekeeping and spill response equipment are stored.

- Displaying signs reminding employees of the importance and procedures of good housekeeping.

- Discussing updated procedures and report on the progress of practicing good housekeeping at every meeting.

- Providing instruction on securing drums and containers and frequently checking for leaks and spills.

Materials Management Practices

All personnel must be trained to recognize all toxic and hazardous substances at the facility. Personnel must be trained on:

- Proper organization and storage of materials.

- Identification of all toxic and hazardous substances stored, handled, and produced onsite.

All employee training must be documented on the appended form and maintained as a part of this SWPPP.

ASC-7 RECORD KEEPING

Incidents such as spills or other discrepancies with other information describing the quality and quantity of storm water discharges must be included in the records. Inspections and maintenance activities must be documented and recorded in the plan. ***Records must be maintained for 3 years after the permit expires.***

Record Keeping and Reporting Procedures for Spills, Leaks, and Other Discharges

Records must include the following information:

- The date and time of the incident, weather conditions, duration, cause, environmental problems, response procedures, parties notified, recommended revisions of the BMP program, operating procedures/equipment needed to prevent recurrence.

- Formal written reports. ***(Document all reports called in to the National Response Center in the event of a reportable quantity discharge).***

- A list of the procedures for notifying the appropriate personnel and the names and telephone numbers of responsible personnel.

All inspections must be kept on file as directed by the pollution prevention team. The team will be responsible for reviewing the inspection records and when necessary implement correction measures.

Records Retention

Records of spills, leaks, or other discharges, inspections, and maintenance activities must be retained for at least 3 years after coverage expires under the permit.

ASC-8 PREVENTATIVE MONITORING PRACTICES

Preventive monitoring practices include the routinely observing a process or piece of equipment to ensure its safe performance and may also include the chemical analysis of storm water before discharge to the environment. Several types of monitoring systems are described below:

Automatic Monitoring System — In areas where overflows, spills and catastrophic leaks are possible, an automatic monitoring system is recommended. Some federal, state, and local laws require such systems to be present if threats exist to the health and safety of personnel and the environment. For material management areas, monitoring may include liquid level detectors, pressure and temperature gauges, and pressure-relief devices. In material transfer, process, and material handling areas, automatic monitoring systems can include pressure drop shut-off devices, flow meters, thermal probes, valve position indicators, and operation lights. Loading and unloading operations might use these devices for measuring the volume of tanks before loading, for weighing vehicles or containers, and for determining rates of flow during loading and unloading.

Automatic Chemical Monitoring — Measures the quality of plant runoff to determine whether discharge is appropriate or whether diversion to a treatment system is warranted. Such systems might monitor pH, turbidity, or conductivity. These parameters might be monitored in diked areas, sewers, drainage ditches, or holding ponds. Systems can also be designed to signal automatic diversion of contaminated storm water runoff to a holding pond (a valve or a gate could be triggered by a certain pollutant in the storm water runoff).

Manned Operations — In material transfer areas and process areas, personnel can be stationed to watch over the operations so that any spills or mismanagement of materials can be corrected immediately. This is particularly useful at loading and unloading areas where vehicles or equipment must be maneuvered into the proper position to unload.

Nondestructive Testing — Some situations require that a storage tank or a pipeline system be tested without being physically moved or disassembled. The structural integrity of tanks, valves, pipes, joints, welds, or other equipment can be tested using nondestructive methods. Acoustic emission tests use high frequency sound waves to draw a picture of the structure to reveal cracks, malformations, or other structural damage. Another type of testing is hydrostatic pressure testing. During pressure testing, the tank or pipe is subjected to pressures several times the normal pressure. A loss in pressure during the testing may indicate a leak or some other structural damage. Tanks and containers should be pressure tested as required by federal, state or local regulations.

Automated monitoring systems should be placed in an area where personnel can easily observe the measurements. Alarms can be used in conjunction with the measurement display to warn personnel. Manned operations should have communication systems available for getting help in case spills or leaks occur. Especially sensitive or spill prone areas may require backup instrumentation in case the primary instruments malfunction.

Mechanical and electronic equipment should be operated and maintained according to the manufacturer's recommendations. Equipment should be inspected regularly to ensure proper and accurate operation.

The pollution prevention team, in consultation with a certified safety inspector, should evaluate system monitoring requirements to decide which systems are appropriate based upon hazard potential.

Advantages of Preventive Monitoring Practices	**Disadvantages of Preventive Monitoring Practices**
• Pressure and vacuum testing can locate potential leaks or damage to vessels early. The primary benefit of such testing is in ensuring the safety of personnel, but it also has secondary benefits including prevention of storm water contamination. • Automatic system monitors allow for early warnings if a leak, overflow, or catastrophic incident is imminent. • Manning operations, especially during loading and unloading activities, is effective and generally inexpensive. • The primary benefit of nondestructive testing is in ensuring the safety of personnel, but it also has secondary benefits including early detection of the potential for contaminating storm water runoff.	• Plant personnel often do not have the expertise to maintain automatic equipment. • Automatic equipment can fail without warning. • Automated process control and monitoring equipment may be expensive to purchase and operate.

ASC-9 SECURITY

Setting up a security system will prevent an accidental or intentional release of materials to storm water runoff as a result of vandalism, theft, sabotage, or other improper uses of facility property. Security personnel should be trained about the specifics of the SWPPP. Routine patrol, lighting, and access control are discussed below as possible measures to include in the facility's security system and are measures that can be used at any facility.

Security information should be included in the existing training required to instruct personnel about where and how to patrol areas within the facility. Instruction should also include what to look for in problem areas and how to respond to problems. During routine patrol, security personnel can actively search the facility for indications of spills, leaks, or other discharges; respond to any disturbance resulting from intruders or inappropriate facility operations; and generally work as a safeguard to prevent unexpected events.

Sufficient lighting throughout the facility during daytime and night hours make it easier to get to equipment during checks and will make it easy to detect spills and leaks that might otherwise be hidden. Routine patrols are easier with proper lighting.

Controlling site access is an important part of security, activity and traffic control. Signs, fencing, guard houses, and visitor clearance requirements should be considered to control site access.

- Signs are the simplest, most inexpensive method of access control, but they are limited in their actual control since they provide no physical barriers and require that people obey them voluntarily.

- Fencing provides a physical barrier to the facility site and an added means of security.

- Guard houses used with visitor rules make sure that only authorized personnel enter the site.

- Traffic signs are also useful. Restricting vehicles to paved roads and providing direction and warning signs can help prevent accidents. Where restricting vehicles to certain pathways is not possible, it is important to ensure that all above-ground valves and pipelines are well marked.

Advantages of Security	Disadvantages of Security
• Provides a preventive safeguard to operational malfunctions or other facility disturbances (routine patrols) • Allows easier detection of vandals or thieves (lighting) • Prevents spills by providing good visibility (lighting) • Prevents unauthorized access to facility (access control)	• May not be feasible for smaller facilities • May be costly (installation of lighting systems) • May increase energy costs as a result of additional lighting • May not be feasible to have extensive access controls at smaller facilities

ASC-10 AREA CONTROL PROCEDURES

The activities conducted at an industrial site often result in the materials being deposited on clothes or footwear and then being carried throughout the facility site. As a result, these materials may find their way into the storm water runoff.

Area control procedures involves practicing good housekeeping measures such as maintaining indoor or covered material storage and industrial processing areas. If the area is kept clean, the risk of accumulating material on footwear and clothing is reduced. In turn, the chance of leftover pollutants making contact with storm water and polluting surface water is minimized.

Area control measures can be used at any facility where materials may be tracked into areas where they can come in contact with storm water runoff. Areas can include material handling/storage/process areas.

Materials storage areas and industrial processing areas should be checked regularly to ensure that good housekeeping measures are being implemented. Cover-garments, foot mats, and other devices used to collect residual material near the area should be cleaned regularly.

Other effective practices include the following:

- Brushing off clothing before leaving the area
- Stomping feet to remove material before leaving the area
- Using floor mats at area exits
- Using coveralls, smocks, and other over garments in areas where exposure to material is of greatest concern (personnel should remove the over garments before leaving the area)
- Posting signs to remind personnel about these practices.

Advantages of Area Control Procedures	**Disadvantages of Area Control Procedures**
• Are easy to implement • Result in a cleaner facility and improved work environment	• May be seen as tedious by employees and therefore may not be followed

ASC-11 SIGNS AND LABELS

Signs and labels identify problem areas or hazardous materials at a facility. Warning signs, often found at industrial facilities, are a good way to suggest caution in certain areas. Signs and labels can also provide instructions on the use of materials and equipment. Labeling is a good way to organize large amounts of materials, pipes, and equipment.

Labels tell material type and container contents. Accurate labeling can help quickly identify the type of material released so facility personnel can respond correctly.

Two effective labeling methods include color-coding and U.S. Department of Transportation (USDOT) labeling. Color-coding is easily recognized by facility personnel and simply involves painting/coating or applying an adhesive label to the container. Color codes must be consistent throughout the facility to be effective, and signs explaining the color codes should be posted in all areas.

The USDOT requires that labels be prominently displayed on transported hazardous and toxic materials. Labeling required by the USDOT should be expanded to piping and containers, making it easy to recognize materials that are corrosive, radioactive, reactive, flammable, explosive, or poisonous.

Areas where they are particularly useful are material transfer areas, equipment areas, loading and unloading areas, or anywhere information might prevent contaminants from being releases to storm water.

Signs and labels should be visible and easy to read. Useful signs and labels might provide the following information:

- Names of facility and regulatory personnel, including emergency phone numbers, to contact in case of an accidental discharge, spill, or other emergency.
- Proper uses of equipment that could cause release of storm water contaminants.
- Types of chemicals used in high-risk areas.
- The direction of drainage lines/ditches and their destination: color, treatment or discharge.

- Information on a specific material.

- Refer to Occupational Safety and Health Administration (OSHA) standards for sizes and numbers of signs required for hazardous material labeling.

Hazardous chemicals might be labeled as follows:

- Danger
- Combustible
- Warning
- Caution
- Flammable
- Poisonous
- Caustic
- Corrosive
- Volatile
- Explosive

Periodic checks can ensure that signs are still in place and labels are properly attached. Signs and labels should be replaced and repaired as often as necessary.

Advantages of Signs and Labels	**Disadvantages of Signs and Labels**
• Inexpensive and easy to use	• Must be updated and maintained so they are legible

VEM-1 FUELING STATIONS

When storm water mixes with fuel spilled or leaked onto the ground, it becomes polluted with chemicals that are harmful to humans and to fish and wildlife. The following will help identify activities that can contaminate storm water and suggest BMPs to reduce or eliminate storm water contamination from fueling stations. (Refer to the Exposure Minimization BMPs: MWM-5, MWM-6, VEM-5, SE-4, SE-5, MWM-7, VEM-6, and VEM-7).

Fuel station activities that can contaminate storm water include:

- Spills and leaks that happen during fuel or oil delivery.

  Fuel overflows during storage tank filling are a major source of spills. Overflows can be prevented. Watch the transfer constantly to prevent overfilling and spills. Overfill prevention equipment automatically shuts off flow, restricts flow, or sounds an alarm when the tank is almost full. Federal regulations require overfill prevention equipment on all underground storage tanks installed after December 1988. For underground storage tanks installed before December 1988, overfill prevention equipment is required by 1998. Consider installing overflow prevention equipment sooner than the required deadline as part of your pollution prevention plan.

  Spills should be controlled immediately. Small spills can be contained using sorbent material such as oil dry or equivalent, straw, or sawdust. Do not wash petroleum spills into the storm drain or sanitary sewer. (Refer to Containment Diking and Curbing BMP WMW-5).

- Spills caused by "topping off" fuel tanks.

  Gas pumps automatically shut off when the vehicle fuel tank is almost full to prevent spills. Trying to completely fill the tanks or topping off the tank often results in overfilling the tank and spilling fuel. Discourage topping off tanks by training employees and posting signs.

- Allowing rainfall on the fuel area or storm water to run onto the fuel area.

  Fueling areas can be designed to minimize spills, leaks, and incidental losses of fuel, such as vapor loss, from coming into contact with rain water:

- Build a roof over the fuel area.

- Pave the fuel area with concrete instead of asphalt. Asphalt soaks up fuel or can be slowly dissolved by fuel, engine fluids, and other organic liquids and the asphalt itself can become a source of storm water contamination.

- Allowing run-on to the fuel areas.

  Run-on is storm water generated from other areas that flows or "runs on" to your property or site. Run-on flowing across fueling areas can wash contaminants into storm drains. Run-on can be ***minimized*** by:

- Grading, berming, or curbing the area around the fuel site to direct run-on away from the fuel area.

- Locating roof downspouts so storm water is directed away from fueling areas.

- Using valley gutters to route storm water around fueling area.

- Hosing or washing down the fuel area.

  Cleaning the fueling area with running water should be ***avoided*** because the wash water will pick up fuel, oil, and grease and make it storm water. Consider using a damp cloth on the pumps and a damp mop on the pavement rather than a hose. ***Check with the local sewer authority about any treatment required before discharging the mop water or wash water to the sanitary sewer.***

The key to a successful storm water pollution prevention plan is getting employees interested in reducing waste generation.

Discuss pollution prevention with employees. They are most familiar with the operations that generate wastes and may have helpful waste reduction suggestions. Consider setting up an employee reward program to promote pollution prevention.

Wash water and storm water in fueling areas drain directly to the storm sewer without adequate treatment. Some types of oil/water separators installed at these locations can provide treatment to discharges from oil contaminated pavements, but this equipment is only effective when properly maintained.

SUMMARY OF FUELING STATION BMPs

- Consider installing spill and overflow protection.
- Discourage topping off fuel tanks.
- Reduce exposure of the fuel area to storm water.
- Use dry cleanup methods for the fuel area.
- Use proper petroleum spill control.
- Encourage employee participation.

VEM-2 VEHICLE AND EQUIPMENT MAINTENANCE

Many vehicle and equipment maintenance operations use materials or create wastes that are harmful to humans and the environment. Storm water runoff from areas where these activities occur can become polluted by a variety of contaminants such as solvents and degreasing products, waste automotive fluids, oils, greases, acids, and caustic wastes. These and other harmful substances in storm water can enter water bodies through storm drains or through small streams where they can harm fish and wildlife.

The following will help find sources of storm water contamination from vehicle and equipment maintenance operations and to help personnel choose BMPs that can reduce or eliminate these sources.

Activities That Can Contaminate Storm Water

Engine repair and service:

- Parts cleaning
- Shop cleanup
- Spilled fuel, oil, or other materials
- Replacing fluids (oil, oil filters, hydraulic fluids, transmission fluid, and radiator fluids).

Outdoor vehicle and equipment storage and parking:

- Dripping engine and automotive fluids from parked vehicles and equipment.

Disposal of materials or process wastes:

- Greasy rags
- Oil filters
- Air filters
- Batteries
- Spent coolant, degreasers, etc.

Parts Cleaning

Parts are often cleaned using solvents such as trichloroethylene, 1,1,1-trichloroethane, or methylene chloride. Many of these cleaners are harmful and must be disposed of as a hazardous waste. Cleaning without using liquid cleaners whenever possible reduces waste. Scrape parts with a wire brush, or use a bake oven if available. Prevent spills and drips of solvents and cleansers to the shop floor. Perform all liquid cleaning at a centralized station so the solvents and residues stay in one area. If parts are dipped in liquid, remove them slowly to avoid spills. Locate drip pans, drain boards, and drying racks to direct drips back into a sink or fluid holding tank for reuse.

Nontoxic or Less Toxic Cleaners or Solvents

Eliminate or reduce the number or amount of hazardous materials and waste by substituting nonhazardous or less hazardous materials, if possible. For example:

- Use non-caustic (noncorrosive) detergents instead of caustic cleaning agents for parts cleaning (ask suppliers about alternative cleaning agents).

- Use detergent-based or water-based cleaning systems instead of organic solvent degreasers.

- Replace chlorinated organic solvents (1,1,1-trichloroethane, methylene chloride, etc.), with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of but are by no means harmless themselves. Check the list of active ingredients to see whether it contains chlorinated solvents.

- Choose recyclable cleaning agents.

Contact suppliers or trade journals for more product specific waste minimization suggestions.

Work Areas and Spills That Are Washed or Hosed Down with Water

Clean up leaks, drips, and other spills without using large amounts of water. Use rags for small spills, a damp mop for general cleanup, and dry absorbent material for larger spills. Consider the following BMPs:

- Avoid hosing down work areas.

- Collect leaking or dripping fluids in drip pans or containers. If different liquids are kept separate, the fluids are easier to recycle.

- Keep a drip pan under the vehicle while unclipping hoses, unscrewing filters, or removing other parts. Use a drip pan under any vehicle that might leak while it is being worked on to keep splatters or drips off the shop floor.

- Promptly transfer used fluids to the proper waste or recycling drums. Do not leave full drip pans or other open containers lying around.

- Locate waste and recycling drums in properly controlled areas of the yard, preferably areas with a concrete slab and secondary containment.

Spills or Materials that are Washed or Poured down the Drain

Do not pour liquid waste into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections. Used or leftover cleaning solutions, solvents, and automotive fluids and oil are often toxic and should not be put into the sanitary sewer. Be sure to dispose of these materials properly or find opportunities for reuse and recycling. ***If uncertain how to dispose of chemical wastes, contact the state hazardous waste management agency or the Resource Conservation and Recovery Act hotline at (800) 424-9346.*** Post signs at sinks to remind personnel, and paint stencils at outdoor drains to notify personnel and others not to pour liquid waste down drains.

Oil Filters Should be Completely Drained before Recycling or Disposal

Oil filters disposed of in trash cans or Dumpsters can leak oil and subsequently contaminate storm water. Place the oil filter in a funnel over the waste oil recycling or disposal collection tank to drain excess oil before disposal. Oil filters can be crushed and recycled; ask oil suppliers or recyclers about recycling oil filters as an alternative to disposal.

Incoming Vehicles and Equipment Should be Checked for Leaking Oil and Fluids

Park vehicles indoors or under a roof, if possible, so storm water does not contact the area. If vehicles are parked outdoors before repair, watch them closely for leaks.

Put pans under leaks to collect fluids for proper recycling or disposal. Keeping leaks off the ground reduces the potential for storm water contamination and reduces cleanup time and costs. If the vehicle or equipment is to be stored outdoors, oil and other fluids should be drained first.

Designate a special area to drain and replace motor oil, coolant, and other fluids, where there are no connections to the storm drain/sanitary sewer and drips and spills can be easily cleaned up.

Wrecked Vehicles or Damaged Equipment Stored Onsite

Be especially careful with wrecked vehicles, whether kept indoors or out, as well as with vehicles kept onsite for scrap or salvage. Wrecked or damaged vehicles often drip oil and other fluids for several days.

- As the vehicles arrive, place drip pans under them immediately, even if suspected that all fluids have leaked out before the vehicles reach the shop.

- Build a shed or temporary roof over areas where parked vehicles await repairs or salvage, especially if wrecked vehicles are handled. Build a roof over vehicles kept for parts.

- Drain all fluids, including air conditioner coolant, from wrecked vehicles and "parts" vehicles. Drain engines, transmissions, and other used parts.

- ***Store cracked batteries in a non-leaking secondary container*.** Do this with all cracked batteries, event if all the acid has been suspected to have drained out*. **If a battery is dropped, treat it as if it is cracked.*** Put in into the containment area until it is verified that it is not leaking.

Recycle Any or All of the Following:

- Degreasers
- Used oil or oil filters
- Antifreeze
- Cleaning solutions
- Automotive batteries
- Hydraulic fluid

All of these materials can be either recycled onsite or sent offsite for recycling. Some recycling options, ranked by level of effort required, follow:

Least Effort:

- Arrange for collecting and transporting batteries, used oil and other fluids, cleaning solutions, and degreasers to a commercial recycling facility. This requires that wastes are separated and stored until they are picked up by the recycling company.

- "Dirty" solvent can be reused. Presoak dirty parts in used solvent before cleaning the parts in fresh solvent.

Moderate Effort:

- Used oil, antifreeze, and cleaning solutions can be recycled onsite using a filtration system that removes impurities and allows the fluid to be reused. Filtration systems are commercially available.

Most Effort:

- Install an onsite solvent recovery unit. If the facility creates large volumes of used solvents, consider purchasing or leasing an onsite still to recover the solvent for reuse. ***Contact the state hazardous waste management agency for more information about onsite recycling of used solvents.***

Reduce the Number of Different Solvents Used

Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Sometimes, one solvent can perform a job as well as two different solvents.

Separate Wastes

Separating wastes allows for easier recycling and may reduce treatment costs. Keep hazardous and nonhazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents (like 1,1,1-trichloroethane) separate from non-chlorinated solvents (kerosene and mineral spirits). Proper labeling of all wastes and materials will help accomplish this goal (Refer to Signs and Labels BMP ASC-11).

Recycled Products

Many products made of recycled (refined or purified) materials are available. Engine oil, transmission fluid, antifreeze, and hydraulic fluid are available in recycled form. Buying recycled products supports the market for recycled materials.

SUMMARY OF VEHICLE MAINTENANCE AND REPAIR BMPs

- Check for leaking oil and fluids.
- Use nontoxic or low-toxicity materials.
- Drain oil filters before disposal or recycling.
- Do not pour liquid waste down drains.
- Recycle engine fluids and batteries.
- Isolate and label wastes.
- Buy recycled products.

VEM-3 PAINTING OPERATIONS

Many painting operations use materials or create wastes that are harmful to humans and the environment. Storm water runoff from areas where these activities occur can become polluted by a variety of contaminants such as solvents and dusts from sanding and grinding that contain toxic metals like cadmium and mercury. These and other potentially harmful substances in storm water can enter water bodies directly through storm drains where they can harm fish and wildlife.

The following will help identify potential sources of storm water contamination from painting operations on site and BMPs that can reduce or eliminate these sources. Implementing this section can help eliminate, reduce, or recycle pollutants that may otherwise contaminate storm water.

Painting Activities That Can Contaminate Storm Water:

- Painting and paint removal
- Sanding or paint stripping
- Spilled paint or paint thinner

Prevent Paint Wastes from Contaminating Storm Water Runoff

Use tarps and vacuums to collect solid wastes produced by sanding or painting. Tarps, drip pans, or other spill collection devices should be used to collect spills of paints, solvents, or other liquid materials. These wastes should be disposed of properly to keep them from contaminating storm water.

Contain Wastes from Sanding

Prevent paint chips from coming into contact with storm water. Paint chips may contain hazardous metallic pigments or biocides(pesticides). Reduce contamination of storm water with paint dust and chips from sanding by the following practices:

- Avoid sanding in windy weather when possible.

- Enclose outdoor sanding areas with tarps or plastic sheeting. Be sure to provide adequate ventilation and personal safety equipment. After sanding is complete, collect the waste and dispose of it properly.

- Keep workshops clean of debris and grit so that the wind will not carry any waste into areas where it can contaminate storm water.

- Move the activity indoors if it can be performed safely.

Inspect Parts before Painting

Inspect the part or vehicle to be painted to ensure that it is dry, clean, and rust free. Paint sticks to dry, clean surfaces, which in turn means a better, longer-lasting paint job.

Use Painting Equipment That Creates Little Waste

As little as 30 percent of the paint may reach the target from conventional airless spray guns; the rest is lost as overspray. Paint solids from overspray are deposited onto the ground where they can contaminate storm water. Other spray equipment that delivers more paint to the target and less overspray should be used:

- Electrostatic spray equipment
- Air-atomized spray guns
- High-volume/low-pressure spray guns
- Gravity-feed guns

Train Personnel to Use Spray Equipment Correctly

Operator training can reduce overspray and minimize the amount of paint solids that can contaminate storm water. Correct spraying techniques also reduce the amount of paint needed per job. If possible, avoid spraying on windy days. When spraying outdoors, use a drop cloth or ground cloth to collect and dispose of overspray.

Recycled Paint, Paint Thinner, and/or Solvents

These materials can either be recycled onsite or sent offsite for recycling. Some recycling options ranked by the level of effort required are listed below.

Least Effort:

- Dirty solvent can be reused for cleaning dirty spray equipment and parts before equipment is cleaned in fresh solvent.

- Give small amounts of leftover paint to the customer for touchup.

Moderate Effort:

- Arrange for collection and transportation of paints, paint thinner, or spent solvents to a commercial recycling facility.

Most Effort:

- Install an onsite solvent recovery unit. If the facility creates large volumes of used solvents, paint, or paint thinner, consider buying or leasing an onsite still to recover used solvent for reuse. Contact the state hazardous waste management agency for more information about onsite recycling of used solvents.

Separate Wastes

Separating wastes makes recycling easier and may reduce treatment costs. Keep hazardous and nonhazardous wastes separate, and keep chlorinated solvents (like 1,1,1-trichloroethane) separate from non-chlorinated solvents (like petroleum distillate and mineral spirits). Check the MSDS for ingredients, or talk with waste haulers or recycling companies to learn which waste types can be stored together and which should be separated.

Reduce the Number of Solvents Used

Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Sometimes, one solvent can do a job as well as two different solvents.

Use Recycled Products

Many products made of recycled (refined or purified) materials are available. Buying recycled paints, paint thinner, or solvent products helps build the market for recycled materials.

SUMMARY OF PAINTING OPERATION BMP

- Inspect parts before painting.
- Contain sanding wastes.
- Prevent paint waste from contacting storm water.
- Use proper procedures interim storage of waste paint, solvents, etc.
- Evaluate efficiency of equipment.
- Recycle paint, paint thinner, and solvents.
- Segregate wastes.
- Buy recycled products.

VEM-4 VEHICLE AND EQUIPMENT WASHING

Washing vehicles and equipment outdoors or in areas where wash water flows onto the ground can pollute storm water. Wash water can contain high concentrations of oil and grease, phosphates, and high suspended solid loads (these and other potentially harmful substances can pollute storm water when deposited onto the ground where they can be picked up by rainfall runoff). Vehicle wash water is considered to be a process wastewater and needs to be covered by a National Pollutant Discharge Elimination System (NPDES) permit.

The following will help find storm water contamination sources from vehicle and equipment washing and to select BMPs to reduce those sources. This section can help eliminate, reduce, or recycle pollutants that otherwise may contaminate storm water. (Refer to Vehicle Washing BMP VEM-8).

Vehicle and Equipment Washing Activities That Can Contaminate Storm Water:

- Outside equipment or vehicle cleaning (washing or steam cleaning)
- Wash water discharged directly to the ground or storm water drain

Consider Using Phosphate-Free Biodegradable Detergents

Phosphates, which are plant nutrients, can cause excessive growth of nuisance plants in water when they enter lakes or streams in wash water. Contact suppliers about phosphate-free biodegradable detergents that are available on the market.

Vehicles, Equipment, or Parts That Are Washed over the Open Ground

Used wash water contains high concentrations of solvents, oil and grease, detergents, and metals. Try not to wash parts or equipment outside. Washing over impervious surfaces like concrete, blacktop, or hardpacked dirt allows wash water to enter storm drains directly or deposits contaminants onto the ground, where they are washed into storm drains when it rains. Washing over pervious ground such as sand soils potentially can pollute groundwater. Therefore, small parts and equipment washing should be done over a parts washing container where the wash water can be collected and recycled or disposed of properly.

If washing large equipment or vehicles takes place, and it is necessary to wash outside; designate a specific area for washing. This area should be bermed to collect the wastewater and graded to direct the wash water to a treatment facility. Consider filtering and recycling vehicle wash water. If recycling is not practical, the wastewater can be discharged to the sanitary sewer.

SUMMARY OF VEHICLE AND EQUIPMENT WASHING BMPs

- Consider using phosphate-free detergents.
- Use designated cleaning areas.
- Consider recycling wash water.

Personnel Involvement is the Key

Getting personnel interested in reducing waste is the key to a successful SWPPP. Discuss pollution prevention with personnel. They are most familiar with the operations that generate wastes and may have helpful waste reduction suggestions. Consider setting up a personnel award program to promote pollution prevention.

VEM-5 DRIP PANS

Drip pans are small depressions or pans used to contain very small volumes of leaks, drips, and spills that occur at a facility. Drip pans can be depressions in concrete, asphalt, or other impenetrable materials or they can be made of metals, plastic, or any material that does not react with the dripped chemicals. Drip pans can be temporary or permanent.

Drip pans are used to catch drips from motors, valves, pipes, etc., so that the materials or chemicals can be cleaned up easily or recycled before they can contaminate storm water. Although leaks and drips should be repaired and eliminated as part of a preventive maintenance program, drip pans can provide a temporary solution where repair or replacement must be delayed. In addition, drip pans can be an added safeguard when they are positioned beneath areas where leaks and drips may occur.

Drip pans can be used at any industry where valves and piping are present and the potential for small volume leakage and dripping exists. When using drip pans, consider the location of the drip pan, weather conditions, the type of material used for the drip pan, and how it will be cleaned.

The location of the drip pan is important because they must be inspected and cleaned frequently. Drip pans must be easy to reach and remove. In addition, take special care to avoid placing drip pans in precarious positions such as next to walkways, on uneven pavement/ground, or on pipelines. Drip pans in these locations are easily overturned and may present a safety hazard, as well as an environmental hazard.

Weather conditions are also important factors. Heavy winds and rainfall move or damage drip pans because of their small size and their light weight (if not built-in). To prevent this, secure the pans by installing or anchoring them. Drip pans may be placed on platforms or behind wind blocks or tied down.

Employees must pay attention to the pans and empty them when they are nearly full for drip pans to be effective. Because of their small holding capacities, drip pans will easily overflow if not emptied. Also, recycling efforts can be affected if storm water accumulates in drip pans and dilutes the spilled material. It is important to have clearly specified and easily followed practices of reuse/recycle and/or disposal, especially the disposal of hazardous materials. Many facilities dump the drip pan contents into a nearby larger volume storage container and periodically recycle the contents of the storage container.

Frequent inspection of the drip pans is necessary due to the possibility of leaks in the pan itself or in piping or valves that may occur randomly or irregular slow drips that may increase in volume. Conduct inspections ***before*** forecasted rainfall events to remove accumulated materials and ***immediately*** after storm events to empty storm water accumulations.

Advantages of Drip Pans	**Disadvantages of Drip Pans**
• Inexpensive	• Contain small volumes only
• Easily installed and simple to operate	• Must be inspected and cleaned frequently
• Allow for reuse/recycling of collected material	• Must be secured during poor weather conditions
• Empty or discarded containers may be reused as drip pans	• Contents may be disposed of improperly unless facility personnel are trained in proper disposal methods

VEM-6 VEHICLE POSITIONING

Vehicle positioning is the practice of locating trucks or rail cars while transferring materials to prevent spills of materials onto the ground surface, which may then contaminate storm water runoff. Vehicle positioning is a simple and effective method of material spill prevention and yet it is commonly overlooked.

Vehicle positioning can be used at all types of industrial facilities. This practice is appropriate for any area where materials are transferred from or to vehicles, such as loading and unloading areas, storage areas, and material transfer areas. Use vehicle positioning in conjunction with other practices such as covering, sumps, drip pans, or loading and unloading by air pressure or vacuum where chemical spills are of concern.

The purpose of vehicle positioning is to locate vehicles in a stable and appropriate position to prevent problems, such as spills resulting from broken material storage containers, spills caused by vehicle movement during materials transfer activities, and spills caused by improperly located vehicles. Vehicles should also be positioned near containment or flow diversion systems to collect unexpected spills from leaks in transfer or connections. The following activities are included in this practice:

- Constructing walls that help in positioning the vehicles
- Positioning vehicle either over a drain or on a sloped surface that drains to a containment structure
- Outlining required vehicle positions on the pavement
- Using wheel guards or wheel blocks
- Posting signs requiring emergency brake usage
- Requiring vehicles to shut off engines during materials transfer activities

Advantages of Vehicle Positioning	Disadvantages of Vehicle Positioning
• Inexpensive • Easy and effective	• May require redesign of loading and unloading areas

VEM-7 LOADING AND UNLOADING BY AIR PRESSURE OR VACUUM

Air pressure and vacuum systems are commonly used for transporting and loading and unloading materials. These systems are simple to use and effective in transferring dry chemicals or solids from one area to another, but are less effective as the particles of material become denser.

In an air pressure system, a safety relief valve and a dust collector are used to separate the dry materials from the air and then release the air accumulated during transfer operations. In a vacuum system, a dust collection device and an air lock, such as a rotary gate or trap door feeder, are typically used.

Using mechanical equipment that involves enclosed lines, such as those provided by air pressure (also referred to as pneumatic) and vacuum loading systems are effective methods for minimizing releases of pollutants into the environment. Because of the enclosed nature of the system, pollutants are not exposed to wind or precipitation and therefore have less potential to contaminate storm water discharges.

Air pressure and vacuum systems can be used at all types of industrial facilities. This equipment is in material handling areas to use for storing, loading and unloading, transporting, or conveying materials.

Unlike many of the other BMPs discussed in this manual, air pressure and vacuum systems may be expensive because of the costs of purchasing the system and retrofitting the system to existing materials handling procedures. In many cases, these systems can be shipped to a facility and be installed onsite without contractor help. Manufacturer's recommendations should be followed closely to ensure proper installation. In other cases, systems may have to be designed specifically for a site. Proper design and installation are very important for air pressure and vacuum systems to be as effective as possible. The equipment may be weatherproof or, if not, consider enclosing or covering the equipment.

Conduct routine inspections of air pressure and vacuum systems. Regular maintenance is required of these systems, especially the dust collectors. Conduct maintenance activities based upon manufacturer’s recommendations. ***Inspect air pressure systems more frequently due to the greater potential for leaks to the environment.***

Advantages of Loading and Unloading by Air Pressure or Vacuum	**Disadvantages of Loading and Unloading by Air Pressure or Vacuum**
• Quick and simple • May be economical if materials can be recovered • Minimizes exposure of pollutants to storm water	• May be costly to install and maintain • May not be appropriate for some denser materials • May require site-specific design • Dust collectors may need an installation permit under the Clean Air Act

VEM-8 VEHICLE WASHING

Materials that accumulate on vehicles and then scatter across industrial sites represent an important source of storm water contamination. Vehicle washing removes materials such as site-specific dust and spilled materials that have accumulated on the vehicle. If not removed, residual material will be spread by gravity, wind, snow, or rainfall as the vehicles move across the facility site and off the site.

This practice is appropriate for any facility where vehicles come into contact with raw materials onsite. If possible, vehicle washing areas should be located where the most vehicle activity occurs. Wastewater from vehicle washing should be directed away from process materials to prevent contact. Those areas include material transfer areas, loading and unloading areas, or areas located just before the site exit.

When considering the method of vehicle washing, consideration should be given to using a high-pressure water spray with no detergent additives. In general, water will adequately remove contaminants from the vehicle. If detergents are used, they may cause other environmental impacts. Phosphate or organic-containing compounds should be avoided.

All wash water should be directed into a sanitary sewer system when available. If the wash water is directed into the storm sewer system it will result in a non-storm-water discharge, thus requiring an application for an NPDES permit to cover the discharge.

Blowers or vacuums should be considered where the materials are dry and easily removed by air.

Advantages of Vehicle Washing	Disadvantages of Vehicle Washing
• Prevents dispersion of materials across the facility site • Is necessary only where methods for transferring contained materials and minimizing exposure have not been successfully adopted and implemented	• May be costly to construct a truck washing facility • May require an NPDES permit

MWM-1 LOADING AND UNLOADING MATERIALS

Loading/unloading operations usually take place outside on docks or terminals. Materials spilled, leaked, or lost during loading/unloading may collect in the soil or on other surfaces and be carried away by rainfall runoff or when the area is cleaned. Rainfall may wash off pollutants from machinery used to unload or load materials. The following will help find sources of storm water contamination from loading and unloading materials and choose BMPs to reduce or eliminate those sources. (Refer to Loading and Unloading by Air Pressure or Vacuum BMP VEM-7).

Loading and Unloading Activities That Can Contaminate Storm Water

- Pumping liquids or gases from barge, truck, or rail car to a storage facility or vice versa.
- Pneumatic transfer of dry chemicals to or from the loading and unloading vehicles.
- Transfer by mechanical conveyor systems.
- Transfer of bags, boxes, drums, or other containers by forklift, trucks, or other material handling equipment.

Tank Trucks and Material Delivery Vehicles Should Be Located Where Spills or Leaks Can Be Contained

Loading and unloading equipment and vehicles should be located so that leaks can be contained in existing containment and flow diversion systems.

Loading/Unloading Equipment Should Be Checked Regularly for Leaks

Check vehicles and equipment regularly for leaks, and fix any leaks promptly. Common areas for leaks are valves, pumps, flanges, and connections. Look for dust or fumes. These are signs that material is being lost during unloading/loading operations.

Loading/Unloading Docks or Areas Should Be Covered to Prevent Exposure to Rainfall

Covering loading and unloading areas, such as building overhangs at loading docks, can reduce exposure of materials, vehicles, and equipment to rain.

Loading/Unloading Areas Should Be Designed to Prevent Storm Water Run-On
Run-on is storm water created from other areas that flows or "runs on" to the property or site. Run-on flowing across loading/unloading areas can wash contaminants into storm drains. Run-on can be **minimized** by:

- Grading, berming, or curbing the area around the loading area to direct run-on away from the area.

- Placing roof downspouts so storm water is directed from loading sites and equipment and preferably to a grassy or vegetated area where the storm water can soak into the ground.

SUMMARY OF LOADING/UNLOADING OPERATION BMPs

- Contain leaks during transfer.
- Check equipment regularly for leaks.
- Limit exposure of material to rainfall.
- Prevent exposure of material to rainfall.
- Prevent storm water run-on.

MWM-2 LIQUID STORAGE IN ABOVEGROUND TANKS

Accidental releases of chemicals from aboveground liquid storage tanks can contaminate storm water with many different pollutants. Materials spilled, leaks, or lost from storage tanks may accumulate in soils or on other surfaces and be carried away by rainfall runoff. The following can help find sources of storm water contamination from aboveground storage tanks and select BMPs to reduce or eliminate those sources. (Refer to the Exposure Minimization and Exposure Mitigation BMPs: MWM-8, MWM-9, SE-6, SE-7, MWM-10, and MWM-11)

The most common causes of unintentional releases from tanks:

- External corrosion and structural failure
- Installation problems
- Spills and overfills due to operator error
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- Leaks or spills while pumping liquids or gases from barges, trucks, or rail cars to a storage facility.

Storage Tanks That Contain Liquid Hazardous Materials, Hazardous Wastes, or Oil

Oil and hazardous materials storage must meet specific standards set by federal and state laws. These standards include Spill Prevention, Control, and Countermeasure plans, secondary containment, installation, integrity and leak detection monitoring, and emergency preparedness plans. Federal regulations set specific standards for preventing run-on and collecting runoff from hazardous waste storage, disposal, or treatment areas. These standards apply to container storage areas and other areas used to store, treat, or dispose of hazardous waste. If the collected storm water is a hazardous waste, it must be managed as a hazardous waste in accordance with all applicable state and Federal environmental regulations. ***To find out more about storage requirements, call the toll-free U.S. Environmental Protection Agency's (USEPA) Resource Conservation and Recovery Act hotline at (800) 424-9346 or contact the state hazardous waste management agency.***

Operators Should be Trained in Correct Operating Procedures and Safety Activities
Well-trained personnel can reduce human errors that lead to accidental releases or spills.

Safeguards Should be Implemented Against Accidental Releases
Engineered safeguards can help prevent operator errors that may cause the accidental release of pollutants. Safeguards include:

- Overflow protection devices on tank systems to warn the operator or to automatically shut down transfer pumps when the tank reaches capacity.

- Protective guards around tanks and piping to prevent vehicle or forklift damage.

- Clearly tagging or labeling of valves to reduce human error.

Tank Systems Should be Inspected and Tank Integrity Tested Regularly
Visually inspect the tank system to identify problem areas before they lead to a release. Correct any problems or potential problems as soon as possible. An audit of a newly installed tank system by a registered and specially trained professional engineer can identify and correct potential problems such as loose fittings, poor welding, and improper or poorly fitted gaskets. Operators should routinely visually inspect the tank system after installation. Areas to inspect include tank foundations, connections, coatings, tank walls, and the piping system. Look for corrosion, leaks, straining of tank support structures from leaks, cracks, scratches in protective coatings, or other physical damage that may weaken the tank system. ***Integrity testing should be done periodically by a qualified professional.***

Tanks Should be Bermed or Surrounded by a Secondary Containment System
A secondary containment system around both permanent and temporary tanks allows leaks to be more easily detected and contains spills or leaks. Methods include berms, dikes, liners, vaults, and double-walled tanks.

SUMMARY OF BMPS FOR LIQUID STORAGE IN ABOVEGROUND TANKS

- Comply with applicable state and federal laws.
- Properly train personnel.
- Install safeguards against accidental releases.
- Routinely inspect tanks and equipment.
- Consider installing secondary containment.

MWM-3 INDUSTRIAL WASTE MANAGEMENT AREAS AND OUTSIDE MANUFACTURING

Storm water runoff from areas where industrial waste is stored, treated, or disposed of can be polluted. Outside manufacturing activities can also contaminate storm water runoff. Activities such as rock grinding or crushing, painting or coating, grinding or sanding, degreasing or parts cleaning, or operations that use hazardous materials are particularly dangerous. Wastes spilled, leaked, or lost from waste management areas or outside manufacturing activities may build up in soils or on other surfaces and be carried away by rainfall runoff. There is also a potential for liquid wastes from lagoons or surface impoundments to overflow to surface waters or soak the soil where they can be picked up by storm water runoff. Possible storm water contaminants include toxic compounds, oil and grease, paints or solvents, heavy metals, and high levels of suspended solids.

The best way to reduce the potential for storm water contamination from both waste management areas and outside manufacturing activities is to reduce the amount of waste that is created and, as a result, the amount that must be stored or treated. The following will help determine BMPs that can eliminate or reduce the amount of toxicity of industrial wastes as well as minimize contamination of storm water from existing waste management areas. Waste reduction BMPs are appropriate for a wide range of industries and are designed to provide ideas on ways to reduce wastes.

Industrial waste management activities or areas that can contaminate storm water:

- Landfills
- Waste piles

- Wastewater and solid waste treatment and disposal:

  - Waste Pumping
  - Additions of treatment chemicals
  - Mixing
  - Aeration
  - Clarification
  - Solids dewatering

- Land application

Look for Ways to Reduce Waste at the Facility

The first step to reducing wastes is to assess activities at the facility. The assessment is designed to find situations at the facility where you can eliminate or reduce waste generation, emissions, and environmental damage. Starting a waste reduction program has many potential benefits. Some of these benefits are direct (cost savings from reduced raw material use), while others are indirect (avoided waste disposal fees).

Outside manufacturing activities or situations that can contaminate storm water:

- Processes or equipment that generate dusts, vapors, or emissions
- Outside storage of hazardous materials or raw materials
- Dripping or leaking fluids from equipment or processes
- Liquid wastes discharged directly onto the ground or into the storm sewer

Consider Waste Reduction BMPs

There are many different types of BMPs that can help eliminate or reduce the amount of industrial waste generated the facility. Some of these BMPs are listed below:

- Production planning and sequencing
- Process or equipment modification
- Raw material substitution or elimination
- Loss prevention and housekeeping
- Waste segregation and separation
- Closed-loop recycling
- Training and supervision
- Reuse and recycling

Industrial Waste Management and Outside Manufacturing Areas Should be Checked Often for Spills and Leaks

By checking waste management areas for leaking containers or spills, you can prevent wastes from contaminating storm water. Look for containers that are rusty, corroded, or damaged. Transfer wastes from these damaged containers into safe containers. Close the lids on Dumpsters to prevent rain from washing wastes out of holes or cracks into the bottom of the Dumpster. In outside areas, look for leaking equipment (valves, lines, seals, or pumps) and fix leaks promptly. Inspect rooftop and other outdoor equipment (HVAC devices, air pollution control devices, transformers, piping) for leaks or dust concentrations.

Industrial Waste Management Areas or Manufacturing Activities Should be Covered, Enclosed or Bermed

The best way to **avoid** contaminating storm water from existing waste management and manufacturing areas is to prevent storm water run-on or rain from entering or contracting these areas. This can be done by:

- Preventing direct contact with rain
- Moving the activity indoors after ensuring that all safety concerns such as fire hazard and ventilation are addressed
- Covering the area with a permanent roof
- Covering waste piles with a temporary covering material such as a reinforced tarpaulin, polyethylene, polyurethane, polypropylene, or Hypalon
- Minimizing storm water run-on by enclosing the area or building a berm around the area

Vehicles Used to Transport Wastes to the Land Disposal or Treatment Site Should be Equipped with Anti-Spill Equipment

Equipment transport vehicles equipped with spill prevention equipment can prevent spills of wastes during transport. Examples include:

- Vehicles equipped with baffles for liquid wastes
- Trucks with sealed gates and spill guards for solid wastes
- Trucks with tarps

Use Loading Systems That Minimize Spills and Fugitive Losses Such as Dust or Mists

Wastes lost during loading or unloading can contaminate storm water. Vacuum transfer systems minimize waste loss.

Sediments or Wastes Should be Prevented from Being Tracked Offsite

Waste and sediment tracked offsite can end up on the streets where they are picked up by storm water runoff. Avoid this by using vehicles with specially designed tires, washing vehicles in a designated area before they leave the site, and controlling the wash water by providing a drainage system.

Minimized Storm Water Runoff from Land Disposal Sites

Take precautions to minimize the runoff of polluted storm water from land application sites. Some precautions are detailed as follows:

- Choose the land application site carefully. Characteristics that help prevent runoff include: slopes under six percent, permeable soils, a low water table, locations away from wetlands or marshes, and closed drainage systems.

- Avoid applying waste to the site when raining when the ground is frozen or saturated with water. Grow grasses on areas dedicated to land disposal to stabilize the soils and reduce the volume of surface water runoff from the site.

- Maintain adequate barriers between the land application site and receiving waters.

- Erosion control techniques including mulching and matting, filter fences, straw bales, diversion terracing, or sediment basins.

- Perform routine maintenance to make sure that erosion control or site stabilization measures are working.

SUMMARY OF INDUSTRIAL WASTE MANAGEMENT AND OUTSIDE MANUFACTURING BMPS

- Conduct a waste reduction assessment.
- Institute industrial waste source reduction and recycling BMPs.
- Prevent runoff and run-on from contacting the waste management area.
- Minimize runoff from land application sites.

MWM-4 OUTSIDE STORAGE OF RAW MATERIALS, BYPRODUCTS, OR FINISHED PRODUCTS

Raw materials, byproducts, finished products, containers, and material storage areas exposed to rain/runoff can pollute storm water. Storm water can become contaminated by a wide range of contaminants (metals, oil, and greases) when solid materials wash off or dissolve into water, or by spills or leaks. Potential sources of storm water contamination and select BMPs that can reduce or eliminate those sources are listed below.

Materials Should be Protected from Rainfall, Run-On and Runoff

The best way to avoid contaminating storm water from outside material storage areas is to prevent rain or storm water run-on from coming in contact with the material(s). This can be done by:

- Storing the material indoors
- Covering the area with a roof
- Covering the material with a temporary covering made of polyethylene, polyurethane, polypropylene, or Hypalon
- Minimizing storm water run-on by enclosing the area or building a berm around the area

These materials should not be stored outside or in areas where they can contaminate storm water:

- Fuels
- Raw materials
- Byproducts
- Intermediates
- Final products
- Process residuals

SUMMARY OF BMPs FOR OUTSIDE STORAGE OF RAW MATERIALS, BYPRODUCTS, OR FINISHED PRODUCTS

- Cover or enclose materials.

MWM-5 CONTAINMENT DIKING

Containment dikes are temporary or permanent earthen or concrete berms or retaining walls that are designed to hold spills. Diking, one of the most common types of containment, is an effective method of pollution prevention for aboveground liquid storage tanks and rail car or tank truck loading and unloading areas. Diking can provide one of the best protective measures against the contamination of storm water because it surrounds the area of concern and holds the spill, keeping spill materials separated from the storm water outside the diked area.

Diking can be used at any industrial facility but is most commonly used for controlling large spills or releases from liquid storage areas and liquid transfer areas.

Containment dikes should be large enough to hold an amount equal to the largest single storage tank at the particular facility plus the volume of rainfall. For rail car and tank truck loading and unloading operations, the diked area should be capable of holding an amount equal to any single tank truck compartment. Materials used to construct the dike should be strong enough to safely hold spilled materials. The materials used usually depend upon what is available onsite and the substance to be contained, and may consist of earth (soil or clay), concrete, synthetic materials (liners), metal or other impervious materials. In general, strong acids and bases may react with metal containers, concrete, and some plastics, so where spills may consist of these substances, other alternatives should be considered. Some of the more reactive organic chemicals may also need to be contained with special liners. If there are any questions about storing chemicals in certain dikes because of their construction materials, refer to the MSDSs.

Containment dikes may need to be designed with impervious materials to prevent leaking or contamination of storm water, surface, and groundwater supplies.

Similarly, uncontrolled overflows from dikes areas containing spilled materials or contaminated storm water should be prevented to protect nearby surface waters or groundwater. Therefore, dikes should have either pumping systems (Refer to Sumps BMP SE-5) or vacuum trucks available to remove the spilled materials. When evaluating the performance of the containment system, you should pay special attention to the overflow system, since it is often the source of uncontrolled leaks. If overflow systems do not exist, accumulated storm water should be released periodically. Contaminated storm water should be treated prior to release. Mechanical parts, such as pumps or even manual systems (slide gates, stopcock valves), may require regular cleaning and maintenance.

When considering containment diking as a BMP, consult local authorities about any regulations governing construction of such structures to comply with local and state requirements. Facilities located in a flood plain should contact their local flood control authority to ensure that construction of the dikes is permitted.

***Containment dike inspections should be conducted during or after significant storms or spills to check for washouts or overflows*.** In addition, regularly checking containment dikes (testing to ensure that dikes are capable of holding spills) is recommended. Soil dikes may need to be inspected more frequently.

Changes in vegetation, inability of the structure to retain storm water dike erosion, or soggy areas indicate problems with the dike's structure. Damaged areas should be patched and stabilized immediately, where necessary. Earthen dikes may require special maintenance of vegetation, such as mowing and irrigation.

Advantages of Containment Diking	**Disadvantages of Containment Diking**
• Contains spills, leaks, and other releases and prevent them from flowing into runoff conveyances, nearby streams, or underground water supplies. • Permits materials collected in dikes to be recycled. • Is a common industry practice for storage tanks and already required for certain chemicals	• May be too expensive for some smaller facilities • Requires maintenance • Could collect contaminated storm water, possibly resulting in infiltration of storm water to groundwater

MWM-6 CURBING

Like containment diking, curbing is a barrier that surrounds an area of concern. Curbing functions in a similar way to prevent spills and leaks from being releases to the environment by routing runoff to treatment or control areas. The terms curbing and diking are sometimes used interchangeably.

Because curbing is usually small scale, it cannot contain large spills the same way as diking; however, curbing is common at many facilities in small areas where handling and transferring liquid materials occur.

Curbing can be used at all industrial facilities. It is particularly useful in areas where liquid materials are transferred and as a storm water runoff control.

Common materials for curbing include earth, concrete, synthetic materials, metal, or other impenetrable materials. Asphalt is also a common material used in curbing.

For maximum efficiency of curbing, spilled materials should be removed immediately, to allow space for future spills. Curbs should have pumping systems, rather than drainage systems, for collecting spilled materials. Manual or mechanical methods, such as those provided by sump systems can be used to remove the material (Refer to Sumps BMP SE-5). Curbing systems should be maintained through curb repair (patching and replacement).

When using curbing for runoff control, facilities should protect the berm by limiting traffic and installing reinforced berms in areas of concern.

Material spills that are stored within a curbed area can be tracked outside of that area when personnel and equipment leave the area. This tracking can be minimized by grading within the curbing to direct the spilled materials to a downslope of the curbing. This will keep the materials away from personnel and equipment that pass through the area. It will allow the materials to accumulate in one area making cleanup much easier.

Inspections should also be conducted before forecasted rainfall events and immediately after storm events. If spilled or leaked materials are observed, cleanup should start immediately. This will prevent overflows/contamination of storm water runoff. In addition, promptly cleaning up materials will prevent rainwater dilution, which can adversely affect recycling opportunities.

Inspecting curbed areas should be conducted regularly, to clear clogging debris. Because curbing is sized to contain small spill volumes, maintenance should also be conducted frequently to prevent overflow of any spilled materials.

Advantages of Curbing	**Disadvantages of Curbing**
• Excellent method to control run-on • Inexpensive • Easily installed • Materials spilled within curbed areas can be recycled • Exists as a common industry practice	• Not effective for holding large spills • May require more maintenance than diking

MWM-7 COVERING

Covering is the partial or total physical enclosure of materials, equipment, process operations, or activities. Covering certain areas or activities prevents storm water from coming into contact with potential pollutants and reduces material loss from wind blowing. Tarpaulins, plastic sheeting, roofs, buildings, and other enclosures are examples of covering that are effective in preventing storm water contamination. Covering can be temporary or permanent.

Covering is appropriate for outdoor material storage piles (stockpiles of dry materials, gravel, sand, compost, sawdust, wood chips, deicing salt, and building materials) and areas where liquids and solids in containers are stored or transferred. Although it may be too expensive to cover or enclose all industrial activities, cover high-risk areas (identified during the storm water pollutant source identification). For example, cover chemical preparation areas, vehicle maintenance areas, areas where chemically treated products are stored, and areas where salts are stored.

If covering or enclosing the entire activity is not possible, the high-risk part of the activity can often be separated from other processes and covered. Another option that reduces the cost of building a complete enclosure is to build a roof over the activity. A roof may also eliminate the need for ventilation and lighting systems.

Evaluate the strength and longevity of the covering, as well as its compatibility with the material or activity being enclosed. When designing an enclosure, consider access to materials, their handling, and transfer. Materials that pose environmental and safety dangers because they are radioactive, biological, flammable, explosive, or reactive require special ventilation and temperature considerations.

Covering alone may not protect exposed materials from storm water contact. Place the material on an elevated, impermeable surface or build curbing around the outside of the materials to prevent problems from run-on of uncontaminated storm water from adjacent areas.

Frequently inspect covering, such as tarpaulins, for rips, holes, and general wear. Anchor the covering with stakes, tie-down ropes, large rocks, tires, or other easily available heavy objects.

Practicing proper materials management within an enclosure or underneath a covered area is essential. For example, floor drainage within an enclosure should be properly designed and connected to the wastewater sewer where appropriate and allowed.

If connecting to an offsite wastewater sewer is considered, the local Publicly Owned Treatment Works should be consulted to find out if there are any pretreatment requirements or restrictions that must be followed.

Advantages of Covering	Disadvantages of Covering
• Simple and effective • Usually inexpensive	• Requires frequent inspection • May pose health or safety problems if enclosure is built over certain activities

MWM-8 SWEEPING

Sweeping with brooms, squeegees, or other mechanical devices is used to remove small quantities of dry chemicals and dry solids from areas that are exposed to rain or storm water runoff. These areas may include dust or contaminant covered bags, drums containing remaining materials on their lids, areas containing enclosed or covered materials, and spills of dry chemicals/solids. Cleaning by sweeping with brooms is a low-cost practice that can be performed by all employees and require no special equipment or training.

Sweeping can be used at many material handling areas and process areas. Timing is an important consideration for all mitigative practices. To be effective as a storm water control, cleanup must take place before rainfall or contact with storm water runoff or before an outside area is hosed down.

Do not limit cleanup activities to those outside activities that are exposed to rainfall. In many cases, tracking of materials to the outside from areas that are enclosed or covered (on shoes) may also occur.

Store brooms appropriately and do not expose them to precipitation. In addition, rules of compatibility also apply. Do not use the same broom to clean up two chemicals that are incompatible. Determine the compatibility between the brooms themselves and the chemical of concern before using this practice. If necessary, consult appropriate MSDS information.

Advantages of Sweeping	**Disadvantages of Sweeping**
• Inexpensive • Requires no special training • Provides recycling opportunities	• Labor-intensive practice • Limited to small releases of dry materials

MWM-9 SHOVELING

Shoveling is another manual cleanup method that is simple and low cost. Generally, shoveling can be used to remove larger quantities of dry chemicals and dry solids, as well as to remove wetter solids and sludges. Shoveling is also useful in removing accumulated materials from sites not accessible by mechanical cleanup methods.

Shoveling provides an added advantage over sweeping because cleanup methods are not limited to dry materials. In many cases, accumulated solids and sludges that are in ditches, sumps, or other facility locations can be effectively and quickly removed by shoveling.

Shovels can also be used to clean up contaminated frozen precipitation. Timing is an important consideration in any pollution reduction practice. Materials that could contaminate storm water runoff should be removed before any storm event.

Clean and store shovels properly. Plan for the transport and disposal or reuse of the shoveled materials.

Advantages of Shoveling	**Disadvantages of Shoveling**
• Inexpensive • Provides recycling opportunities • Can remediate larger releases and is effective for dry and wet materials	• Labor-intensive • Not an appropriate practice for large spills

MWM-10 SORBENTS

Sorbents are materials that are capable of cleaning up spills through the chemical processes of adsorption and absorption. Sorbents adsorb (an attraction to the outer surface of a material) or absorb (taken in by the material like a sponge) only when they come in contact with the sorbent materials. The sorbents must be mixed with a spill or the liquid must be passed through the sorbent. Often the particles are held together in structures called booms, pads, or socks. Sorbents include, but are not limited to, the following:

- Common Materials (clays, sawdust, straw, and fly ash) — Generally come in small particles that can be thrown onto a spill that is on a surface. The materials absorb the spill by taking up the liquid.

- Polymers (polyurethane and polyolefin) — Come in the form of spheres, beads, or foam tablets. These materials absorb a chemical spill by taking up the liquid into their open-pore structure.

- Activated Carbon — Comes in a powdered or granular form and can be mixed with liquids to remove pollutants. This sorbent works by adsorbing the organic to its surface and can be recycled and then reused by a process called regeneration.

- "Universal Sorbent Material" — Is a silicate glass foam consisting of rounded particles that can absorb the material.

Sorbents are useful BMPs for facilities with liquid materials onsite. Timing is important for these practices to be effective as a storm water BMP. Cleanup must take place before a rainfall. Sorbents are often used in conjunction with curbing or other similar features to clean up small spills within a contained area.

"Universal sorbent materials" are suitable for using on many compounds including acids, alkalis, alcohols, aldehydes, arsenate, ketones, petroleum products, and chlorinated solvents.

Activated carbon is useful for adsorbing many organic compounds. Organics that are diluted in water can be passed through a column that is filled with the activated carbon material to remove the organics, or the activated carbon can be mixed in the water and can then be filtered out.

Polyurethane is good with chemical liquids such as benzene, chlorinated solvents, epichlorohydrin, and phenol. Polyolefin is used to remove organic solvents, such as phenol and various chlorinated solvents. The beads and spheres are usually mixed into a spill by use of a blower and then area skimmed from the top surface by use of an oil broom.

More common materials such as clay, sawdust, straw, and fly ash can be used for a liquid spill on a surface that is relatively impenetrable, and are usually spread over the spill area with shovels.

Booms, pads, and socks are also useful in areas where there are small liquid spills or drips or where small amounts of solids may mix with small amounts of storm water runoff. They can function both to absorb the pollutants from the storm water and restrict the movement of a spill. Socks are often used together with curbing to clean up small spills.

Because sorbents work by a chemical or physical reaction, some sorbents are better than others for certain types of spills. Therefore, the use of sorbents requires that personnel know the properties of the spilled material(s) to know which sorbent is appropriate. To be effective, sorbents must adsorb the material spilled but must ***NOT*** react with the spilled material to form hazardous or toxic substances. Always follow the manufacturer's recommendations.

For sorbents to be effective, they must be applied immediately in the release area. The use of sorbent material is generally very simple: the sorbent is added to the area of release, mixed well, and allowed to adsorb or absorb. Many sorbents are not reusable once they have been used. Proper disposal is required.

Advantages of Sorbents	**Disadvantages of Sorbents**
• Work in water environments (booms and socks) • Offer recycling opportunities (some types of sorbents)	• Require a knowledge of the chemical makeup of a spill (to choose the best sorbent) • Offer no recycling opportunities (some types of sorbents) • May be expensive practice for large spills • May create disposal problems and increase disposal costs by creating a solid waste and potentially a hazardous waste.

MWM-11 GELLING AGENTS

Gelling agents are materials that interact with liquids either physically or chemically (thickening or polymerization). Some of the typical gelling agents are polyetlectrolytes, polyacrylamide, butyistyrene copolymers, polyacryionitrile, polyethylene oxide, and a gelling agent referred to as the universal gelling agent which is a combination of these synthetics.

Gelling interacts with a material by concentrating and congealing it to become semisolid. The semisolid gel later forms a solid material, which can then be cleaned up by manual or mechanical methods. The BMP of using a gelling agent is one of the few ways to effectively control a liquid spill before it reaches a receiving water or infiltrates into the soil and then groundwater.

Gelling agents are useful for facilities with significant amounts of liquid materials stored onsite. ***Gels cannot be used to clean up spills on surface water unless authorized by the U.S. Coast Guard or USEPA Regional Response Team.***

Gels can be used to stop the liquid's flow on land, prevent it from seeping into the soil, and reduce the surface spreading of a spill. Because of these properties, gels can reduce the need for extensive cleanup methods and reduce the possibility of storm water contamination from an uncontrolled industrial spill. As with sorbents, using gels simply involves the addition of the gel to the area of the spill, mixing well, and allowing the mass to congeal. To use gels correctly, however, personnel need to know the properties of the spilled materials so that they can choose the correct gel.

Timing is particularly important for using gelling agents. Gelling agents must be applied immediately after the spill to prevent the movement of materials. Use gelling agents results in a large bulk of congealed mass that usually cannot be separated. As a result, this mass will need to be cleaned up by manual or mechanical methods and disposed of properly.

Advantages of Gelling Agents	Disadvantages of Gelling Agents
• Stop the movement of spilled or released liquid materials • Require no permanent structure	• May require knowledge of the spilled materials to select correct gelling agents • Usually offer no recycling opportunities • May be difficult to clean up • May create disposal problems/increase disposal costs by creating a solid waste and potentially a hazardous waste

SE-1 STORM WATER CONVEYANCES
(Channels/Gutters/Drains/Sewers)

Storm water conveyances such as channels, gutters, drains, and sewers, collect storm water runoff and direct its flow. Storm water conveyances can be used for two different purposes; to keep uncontaminated storm water from coming in contact with areas of an industrial site where it may become contaminated with pollutants, and to direct the contaminated runoff to a treatment facility.

Storm water conveyances can be constructed or lined with many different materials, including: concrete, clay tiles, asphalt, plastics, metals, riprap, compacted soils, and vegetation. The type of material used depends upon the function of the conveyance, which can be temporary or permanent.

Storm water conveyances usually work well at most industrial sites. Storm water can be directed away from industrial areas by collecting it in channels or drains before it reaches these areas. Additionally, conveyances can be used to collect storm water downhill from industrial areas and keep it separate from runoff that has not been in contact with those areas. When potentially contaminated storm water is collected in a conveyance like this, it can be directed to a treatment facility on the site if necessary. (If a pollutant is spilled, is should ***NOT*** be allowed to enter a storm water conveyance or drain system).

Conveyance systems are most easily installed during facility construction. Using existing grades will decrease costs. Grades should be positive to allow for the continued movement of the runoff through the conveyance system; however, grades should not create an increase in velocity that increases erosion.

Storm water conveyances should be inspected for debris removal within 24 hours of rainfall. During periods of prolonged rainfall, inspect the conveyances daily, since heavy storms may clog or damage them. Repair damages to these structures as soon as possible.

Advantages of Storm Water Conveyances (Channels/Gutters/Drains/Sewers)	**Disadvantages of Storm Water Conveyances (Channels/Gutters/Drains/Sewers)**
• Direct storm water flows around industrial areas • Prevent temporary flooding of industrial site • Require low maintenance • Provide erosion resistant conveyance of storm water runoff • Provide long-term control of storm water flows	• Once flows are concentrated in storm water conveyances, they must be routed through stabilized structures all the way to their discharge to the receiving water or treatment plant to minimize erosion • May increase flow rates • May be impractical if there are space limitations • May not be economical, especially for small facilities or after a site has already been constructed

SE-2 DIVERSION DIKES

Diversion dikes or berms are structures used to block runoff from passing beyond a certain point. Temporary dikes are usually made with compacted soil and permanent dikes are constructed out of concrete, asphalt or similar materials.

Diversion dikes are used to prevent the flow of storm water runoff onto industrial areas. Limiting the volume of flow across industrial areas reduces the volume of storm water that may carry pollutants from the area, requiring treatment for pollutant removal. This BMP is suitable for industrial sites where significant volumes of storm water runoff tend to flow onto active industrial areas. Typically, dikes are built on slopes just uphill from an industrial area together with some sort of a conveyance such as a swale. The storm water conveyance is necessary to direct the water away from the dike so that the water will not pool and seep through the dike.

In planning for installing dikes, consider the slope of the drainage area, the height of the dike, the size of rainfall event it will need to divert, and the type of conveyance that will be used with the dikes. Steeper slopes result in higher volumes of runoff and higher velocities; therefore, the dike must be constructed to handle this situation. Remember that dikes are limited in their ability to manage large volumes of runoff.

Ideally, dikes are installed before industrial activity begins. However, dikes can be easily constructed at any time. Temporary dikes (usually made of soil) generally only last for 18 months or less, but they can be made into permanent structures by stabilizing them with vegetation. Vegetation is crucial for preventing the erosion of the dike.

Dikes should be inspected regularly for damage. This is especially important after storm events since a heavy rain may wash away parts of a temporary dike. Any necessary repairs should be made immediately to make sure the structure continues to function.

Advantages of Diversion Dikes	**Disadvantages of Diversion Dikes**
• Effectively limit storm water flows over industrial areas • Can be installed at any time • Are economically temporary structures, when built from soil onsite • Can be converted from temporary to permanent at any time	• Are not suitable for large drainage areas unless there is a gentle slope • May require maintenance after heavy rains

SE-3 GRADED AREAS FOR PAVEMENT

Land surfaces can be graded or graded and paved so that storm water runoff is directed away from industrial activity areas. The slope of the grade allows the runoff to flow, but limits the runoff from washing over areas that may be contaminated with pollutants. Like conveyances and dikes, graded areas can prevent runoff from contacting industrial areas and becoming contaminated with pollutants from these areas. Grading can be a permanent or temporary control measure.

Grading land surfaces is appropriate for any industrial site that has outdoor activities that may contaminate storm water runoff, such as parking lots or outdoor storage areas. Grading is often used with other practices, such as coverings, buffer zones, and other practices to reduce the runoff velocity and provide infiltration of the uncontaminated runoff, or to direct pollutant runoff to storm water treatment facilities.

Control and containment of runoff flows should be considered in the overall concept. The grading should control the uncontaminated flow by diverting it around areas that may have pollutants. The grading should also contain the contaminated flows or divert them to treatment facilities.

When re-grading and paving an industrial area, the use of concrete paving instead of asphalt should be considered. This is especially important in potential spill sites or hazardous material storage areas. Asphalt absorbs organic pollutants and can be slowly dissolved by some fluids, thus becoming a possible source of contaminants itself. This control measure should be used with a cover, such as a roof, in areas where contaminants are of concern so that precipitation does not fall on the area and wash the contaminants down slope.

Inspect paving regularly for cracks that may allow contaminants to seep into the ground. Also, check to make sure that the drains receiving the storm water flow from the paved area remain unclogged with sediment or other debris so that low areas do not flood and wash over the areas where the contaminants may exist.

Advantages of Graded Areas and Pavement	**Disadvantages of Graded Areas and Pavement**
• Is effective in limiting storm water contact with contaminants • Is relatively inexpensive and easily implemented.	• May be uneconomical to regrade and resurface large areas • May not be effective during heavy precipitation

SE-4 COLLECTION BASINS

Collection basins, or storage basins, are permanent structures where large spills or contaminated storm water are contained and stored before cleanup or treatment. Collection basins are designed to receive spills, leaks, etc., that may occur and prevent these materials from being released to the environment. Unlike containment dikes, collection basins can receive and contain materials from many locations across a facility.

Collection basins are commonly confused with treatment units such as ponds, lagoons, and other containment structures. Collection basins differ from these structures because they are designed to temporarily store storm water rather than treat it.

Collection basins are appropriate for all industrial sites where space allows. Collection basins are particularly useful for areas that have a high spill potential.

The design and installation considerations for collection basins include sizing the basin either to hold a certain amount of spill or a certain size storm, or both. In designing the collection system, the type of material for the conveyances, compatibility of various materials to be carried through the system, and requirements for compliance with state and local regulations should be considered. Ideally, the system should function to route the materials quickly and easily to the collection basin.

When spills occur, the collection system must route the spill or storm water immediately to the collection basin. The collection system and basin may require cleaning after a spill is contained. Remove the collection basin contents immediately to prevent an unintentional release and recycle the spilled material as much as possible. Inspect the structure on a regular basis and after storm events or spills. Depending upon the types of pollutants that may be in the storm water, or are collected as spills, design of the basin may require a liner to prevent infiltration into the groundwater. ***Make sure that the installation of this BMP does not violate state groundwater regulations.***

It is possible that the collection basin may handle combustible or flammable spilled materials, explosion-proof pumping equipment and controls or other appropriate precautions should be taken to prevent explosions or fires. ***Consult OSHA and local safety codes/standards for specific requirements and guidance.***

Advantages of Collection Basins	Disadvantages of Collection Basins
• Store contaminated storm water until directed to a treatment facility • Collect spills for recycling where materials are separated	• May need a conveyance system for increased effectiveness • May collect materials that are not compatible • May reduce the potential for recycling materials by collecting storm water which dilutes the materials • May create groundwater problems if pollutants infiltrate into ground

SE-5 SUMPS

Sumps are holes or low areas that are structured so that liquid spills or leaks will flow down toward a particular part of a containment area. Frequently, pumps are placed in a depressed area and are turned on automatically to transfer liquids away from the sump when the level of liquids gets too high. Sumps can be temporary or permanent.

Sumps can be used at all facilities. Sumps are used with other spill containment and treatment measures and can be located almost anywhere onsite. Sumps are frequently located in low-lying areas within material handling or storage areas.

When designing and installing a sump system, consider the pump location, function, and system alarms. Design and install the sump in the lowest lying area of a containment structure, allowing for materials to gather in the area of the sump. Construct the sump of impenetrable materials and provide a smooth surface so that liquids are funneled toward the pump. It may be appropriate to house the pumps in a shed or other structure for protection and stabilization.

There are numerous factors that should be considered when purchasing a pump. Base the size of the pump on the maximum expected volume to be collected in the containment structure. In some cases, more than one pump may be appropriate. Typically, pumps that can be submerged under the spill are the most appropriate for areas where large spills may occur and that may submerge the sump area. The viscosity (resistance to flow) of the material and the distance that the material must be pumped are also important considerations. Install pumps according the manufacturer's recommendations.

An alarm system can be installed for pumps that are used to remove collected materials. An alarm system can indicate that a pump should be operated by hand or that an automatically operated pump has failed to function. Ultimately, facility personnel should have some mechanism to take action to prevent spills from bypassing and overflowing containment structures.

The pumps and the alarm system used in the sump generally require regular inspections for service and maintenance of parts based upon manufacturer’s recommendations.

If it is possible that the sump may handle combustible or flammable spilled materials, explosion-proof pumping equipment and controls or other appropriate precautions should be taken to prevent explosions or fires. ***Consult OSHA and local safety codes/standards for specific requirements and guidance.***

Advantages of Sumps	**Disadvantages of Sumps**
• Provide a simple and quick collection method for recycling, reusing, or treating materials in a containment structure • Commonly used at industrial facilities	• Pumps may clog easily if not designed correctly • May require maintenance/servicing agreements with pump dealers • Costs for purchasing/replacing pumps may be high

SE-6 EXCAVATION PRACTICES

Excavation (removal of contaminated material) of released materials is typically conducted by mechanical equipment, such as Bobcats and backhoes.

Excavation removes the materials of concern and any deposition of contaminants reducing the potential for storm water contamination. Mechanical cleanup methods are typically less precise than manual cleanup methods, resulting in reduced opportunities for recycle and reuse.

Excavation practices are most useful for large releases of dry materials and for areas contaminated by liquid material releases. In excavation, be sure that all of the contaminated material is removed. The excavated area should be stabilized as soon as possible after excavation is completed (paving, establishing vegetation).

Timing is an important consideration for all pollution reduction practices to be effective as a storm water control. Cleanup must take place ***before*** a rainfall event.

Conduct inspections, operations and maintenance in accordance with a manufacturer's recommendations, which may include the following:

- A schedule for inspecting, maintaining, and servicing the equipment
- Parts replacement, rotation, and lubrication specifications
- Procedures for evaluating all parts

For any equipment used during cleanup, other considerations apply, including the following:

- Plows and backhoes should be stored appropriately with no exposure to precipitation
- Excavated materials should be properly handled and disposed of properly

Advantages of Excavation Practices	**Disadvantages of Excavation Practices**
• Cost effective method for cleaning up dry materials release • Common and simple	• Less precise, resulting in less recycling and reuse opportunities

SE-7 VACUUM AND PUMP SYSTEMS

Vacuum and pump systems are effective for cleaning up spilled or exposed materials.

The benefits of vacuum and pump cleanup systems are simplicity and speed. With such systems, only the spilled materials need be collected. Also, these systems are often portable and can be used at many locations to clean up releases to the environment. Portable systems can usually be rented.

Vacuum and pump systems can be used at any industrial facility; wet/dry materials can be collected with these systems. Vacuum systems can be used in material handling areas and process areas.

Consider the area of use and the most appropriate size for the system since these systems can be portable.

Advantages of Vacuum and Pump Systems	**Disadvantages of Vacuum and Pump Systems**
• Remove materials by air pressure or vacuum quickly and simply • Collect materials accurately • Offer good recycling opportunities	• Initial capital cost • Require equipment maintenance

SE-8 PIPE SLOPE DRAINS

Pipe slope drains reduce the risk of erosion by discharging runoff to stabilized areas. Made of flexible or rigid pipe, they carry concentrated runoff from the top to the bottom of a slope that has already been damaged by erosion or is at high risk for erosion. They are also used to drain saturated slopes that have the potential for soil slides. Pipe slope drains can be either temporary or permanent depending upon the method of installation and material used.

Pipe slope drains are used whenever it is necessary to convey water down a slope without causing erosion. They are especially effective before a slope has been stabilized or before permanent drainage structures are ready for use. Pipe slope drains may be used with other devices, including diversion dikes or swales, sediment traps, and level spreaders (used to spread out storm water runoff uniformly over the surface of the ground). Temporary pipe slope drains, usually flexible tubing or conduit, may be installed before constructing permanent drainage structures. Permanent slope drains may be placed on or beneath the ground surface; pipes, sectional downdrains, paved chutes, or clay tiles may be used.

Paved chutes may be covered with a surface of concrete or other impermeable material. Subsurface drains can be constructed of concrete, PVC, clay tile, corrugated metal, or other permanent material.

The drain design should be able to handle the volume of flow. The effective life span of a temporary pipe slope drain is up to 30 days after permanent stabilization has been achieved. The maximum recommended drainage area for pipe slope drains is 10 acres.

The inlets and outlets of a pipe slope drain should be stabilized. This means that a flared end section should be used at the entrance of the pipe. The soil around the pipe entrance should be fully compacted. The soil at the discharge end of the pipe should be stabilized with riprap (a combination of large stones, cobbles, and boulders). The riprap should be placed along the bottom of a swale which leads to a sediment trapping structure or another stabilized area.

Pipe slope drains should be inspected on a regular schedule and after any major storm. Be sure that the inlet from the pipe is properly installed to prevent bypassing the inlet and undercutting the structure. If necessary, install a headwall, riprap, or sandbags around the inlet. Check the outlet point for erosion and check the pipe for breaks or clogs. Install outlet protection (Refer to Outlet Protection BMP EC-12) if needed and promptly clear breaks and clogs.

Advantages of Pipe Slope Drains	Disadvantages of Pipe Slope Drains
• Can reduce or eliminate erosion by transporting runoff down steep slopes or by draining saturated soils • Easy to install and require little maintenance	• Require that the area disturbed by the installation of the drain should be stabilized or it, too, will be subject to erosion • May clog during a large storm

SE-9 SUBSURFACE DRAINS

A subsurface drain is a perforated pipe or conduit placed beneath the surface of the ground at a designed depth and grade. It is used to drain an area by lowering the water table. A high water table can saturate soils and prevent the growth of certain types of vegetation. Saturated soils on slopes will sometimes "slip" down the hill. Installing subsurface drains can help prevent these problems.

There are two types of subsurface drains: relief drains and interceptor drains. Relief drains are used to dewater an area where the water table is high. They may be placed in a gridiron, herringbone, or random pattern. Interceptor drains are used to remove water where sloping soils are excessively wet or subject to slippage. They are usually placed as single pipes instead of in patterns. Generally, subsurface drains are suitable only in areas where the soil is deep enough for proper installation. They are not recommended where they pass under heavy vehicle crossings.

Drains should be placed so that tree roots will not interfere with drainage pipes. The drain design should be adequate to handle the volume of flow. Areas disturbed by the installation of a drain should be stabilized or they, too, will be subjected to erosion. The soil layer must be deep enough to allow proper installation.

Backfill immediately after the pipe is placed. Material used for backfill should be open granular soil that is highly permeable. The outlet should be stabilized and should direct sediment-laden storm water runoff to a sediment trapping structure or another stabilized area.

Inspect subsurface drains on a regular basis and check for evidence of pipe breaks or clogging by sediment, debris, or tree roots. Remove blockage immediately, replace any broken sections, and restabilize the surface. If the blockage is from tree roots, it may be necessary to relocate the drain. Check inlets and outlets for sediment or debris. Remove and dispose of these materials properly.

Advantages of Subsurface Drains	Disadvantages of Subsurface Drains
• Provide an effective method for stabilizing wet sloping soils • An effective way to lower the water table	• May be pierced and clogged by tree roots • Should not be installed under heavy vehicle crossings • Cost more than surface drains because of the expenses of excavation for installation

SE-10 LEVEL SPREADERS

Level spreaders are devices used at storm water outlets to spread out collected storm water flows into sheetflow (runoff that flows over ground surface in a thin, even layer). Typically, a level spreader consists of a depression in the soil surface that spreads the flow onto a flat area across a gentle slope. Level spreaders then release the storm water flow onto level areas stabilized by vegetation to reduce speed and increase infiltration.

Level spreaders are most often used as an outlet for temporary or permanent storm water conveyances or dikes. Runoff that contains high sediment loads should be treated in a sediment trapping device before releasing into a level spreader.

The length of the spreader depends upon the amount of water that flows through the conveyance. Larger volumes of water need more spread to even out. Level spreaders are generally used with filter strips (Refer to Vegetated Filter Strips BMP 65). The depressions are then seeded with vegetation (Refer to Permanent Seeding BMP SECP-8).

Level spreaders should not be used on soil that might erode easily. They should be constructed on natural soils and not on fill material. The entrance to the spreader should be level so that the flow can spread out evenly.

The spreader should be inspected after every large storm event to check for damage. Heavy equipment and other traffic should be kept off the level spreader because these vehicles may compact the soil or disturb the grade of the slope. If ponding erosion channels develop, the spreader should be regraded. Dense vegetation should be maintained and damaged areas reseeded as needed.

Advantages of Level Spreaders	Disadvantages of Level Spreaders
• Reduce storm water flow velocity, encourage sedimentation and infiltration • Relatively inexpensive to install	• Can easily develop "short circuiting" (concentration of flows into small streams instead of sheetflow over the spreader) because of erosion or other disturbance • Cannot handle large quantities of sediment-laden storm water

SE-11 INFILTRATION TRENCHES

An infiltration trench usually consists of a long, narrow excavation ranging from 3 to 12 feet deep. The trench is filled with stone, which allows for temporary storage of storm water runoff in the open spaces between the stones. The stored storm water infiltrates into the surrounding soil or drains into underground pipes through holes and is then routed to an outflow point. Infiltration trenches are designed to remove both fine sediments and soluble pollutants instead of larger, coarse pollutants.

Infiltration trenches should be restricted to areas with certain soil, groundwater slope, area, and pollutant conditions. Infiltration trenches will not operate well in soils that have high clay contents, silt/clay soils, sandy/clay loams, or soils that have been compacted. Trenches should not be sited over fill soils because such soils are unstable. Hardened soils are often not suitable for infiltration trenches because these types of soils do not easily absorb water. Infiltration practices in general should not be used to manage contaminated storm water.

The drainage area contributing runoff to a single trench should not exceed 5 acres. Construction of trenches should not start until after all land-disturbing activities have ceased so that runoff with high levels of sediment does not fill in the structure.

If slopes draining into the trench are steeper than 5 percent, the runoff will enter the trench too fast and will overwhelm the infiltration capacity of the soil, casing overflow. The depth from the bottom of the trench to the bedrock layer and the seasonal high water table must be at least three feet. Infiltration trenches may not be suitable in areas where there are cold winters and deep frost levels.

Pretreating runoff before it is channeled to the trench is important to efficient operation because pretreatment removes sediment, grit, and oil. Reducing the pollutant load in the runoff entering the trench lengthens trench life. One method of pretreatment is to install a buffer zone just above the trench to act as a filter (Refer to Buffer Zones BMP SECP-5). In addition, a layer of filter fabric 1 foot below the bottom of the trench can be used to trap the sediments that get through the buffer strip. If excavation around the trenches is necessary, the use of light duty equipment will avoid compacting which could cause a loss of infiltration capability.

Infiltration trenches should be inspected at least once per year and after major rainfall events. Debris should be removed from all areas of the trench, especially the inlets and overflow channels. Dense vegetative growth should be maintained in buffer areas surrounding the trench.

Test wells can be installed in every trench to monitor draining times and provide information on how well the system is operating. ***Daily test well monitoring is necessary, especially after large storm events.*** If the trench does not drain after three days, it usually means that the trench is clogged.

Advantages of Infiltration Trenches	**Disadvantages of Infiltration Trenches**
• Preserve the natural water balance of the site • Effective for small sites • Remove pollutants effectively	• Require high maintenance when sediment loads are heavy • Have short life span, especially if not maintained properly • May be expensive (cost of excavation and fill material)

SE-12 POROUS PAVEMENTS/CONCRETE GRIDS AND MODULAR PAVEMENTS

Porous pavement, concrete grids, and modular pavements allow storm water to infiltrate so that the speed and amount of runoff from a site can be reduced.

Porous pavement can be constructed of either asphalt or concrete. With porous asphalt pavement, runoff infiltrates through a porous asphalt layer into a stone "reservoir" layer. Storm water runoff filters through the stone reservoir into the underlying subsoil or drains into underground pipes through holes and is routed away. The bottom and sides of the stone reservoir are lined with filter fabric to prevent the movement of soils into the reservoir area.

Porous concrete pavement is made out of a special concrete mix that has a high number of open spaces between the particles and a coarse surface texture. These open spaces allow runoff to pass through the surface to lower levels. This type of pavement can be placed directly on graded soils. When a subbase is used for stability, 6 inches of sand is placed under the concrete mixture. Up to 6 inches of storm water can be held on the surface of the pavement and within the concrete.

Concrete grids and modular pavement are constructed of precast concrete, poured-in-place concrete, brick, or granite. These types of pavements can also reduce the loading and pollutant concentrations in the runoff. Concrete grids and modular pavements are designed and/or constructed so that they have open spaces within the pavement through which storm water can infiltrate into the ground. These open spaces can be filled with gravel/sand/vegetation.

These structures are usually only suitable for low-volume parking areas (one-quarter acre to 10 acres) and lightly used access roads. Areas that are expected to get moderate or high volumes of traffic or heavy equipment can use conventional pavements (for the heavy traffic areas) that are sloped to drain to areas with the porous pavements. These pavements are not effective in drainage areas that receive runoff containing high levels of sediment.

The soil types over which concrete grids and modular pavement are to be placed should allow for rapid drainage through the pores in the pavement. These pavements are not recommended for sites with slopes steeper than 5 percent or sites with high water tables, shallow bedrock, fill soils, or localized clay lenses, which are conditions that would limit the ability of the runoff to infiltrate into surface soils. For example, the water table and bedrock should be at least 3 feet below the bottom of the stone reservoir. Porous pavement will not operate well in windy areas where sediment will be deposited on the porous pavement.

Constructing these pavements should be timed so that installation occurs on the site after other construction activities are finished and the site has been stabilized. As a result, sediments are less likely to be tracked or carried onto the surface.

Properly installing these pavements requires a high level of construction expertise and workmanship. Only contractors who are familiar with installing these pavements should be used.

Designers of porous pavement areas should consider sediment and erosion control. Sediments must be kept away from the pavement area because they can clog the pores. Controls to consider for sediments include a diversion berm (earthen mound) around the edge of the pavement area to block the flow of runoff from certain drainages onto the pavement, or other filtering controls such as silt fences. Deicing salt mixtures, sands, or ash also may clog pores and should not be used for snow removal. Signs should be posted to prohibit these activities.

The infiltration of storm water runoff may contaminate groundwater sources, these pavements are not suitable for areas close to drinking water wells (at least 100 feet away is recommended).

Maintenance of the surface is very important. For porous pavements, this includes vacuum sweeping at least four times per year followed by high-pressure hosing to reduce the chance of sediments clogging the pores of the top layer. Potholes and cracks can be filled with typical patching mixes unless more than 10 percent of the surface area needs repair. Spot clogging may be fixed by drilling half-inch holes through the porous pavement layer every few feet.

The pavement should be inspected several times the first few months after installation and then annually. ***Inspections after large storms are necessary to check for pools of water*****.** These pools may indicate clogging. The condition of adjacent vegetated filter strips, silt fences, or diversion dikes should also be inspected.

Concrete grids and modular pavements should be designed in accordance with manufacturer's recommendations. Designers also need information on soils, depth to the water table, and storm water runoff quantity and quality.

Maintenance of concrete grids and modular pavements is similar to that of the porous pavements; however, turf maintenance such as mowing fertilizing, and irrigation may be needed where vegetation is planted in the open spaces.

Advantages of Porous Pavements/Concrete Grids and Modular Pavements	**Disadvantages of Porous Pavements/Concrete Grids and Modular Pavements**
• Provide erosion control by reducing the speed and quantity of the storm water runoff from the site • Provide some treatment to the water by removing pollutants • Reduce the need for curbing and storm sewer installation and expansion • Improve road safety by providing a rough surface • Provide some recharge to local aquifers • Cost effective because they replace more expensive/complex treatment systems	• Can be more expensive than typical pavements • Easily clogged with sediment/oil; however, pretreatment and proper maintenance will prevent this problem • May cause groundwater contamination • Not structurally suited for high-density traffic or heavy equipment • Asphalt pavements may break down if gasoline is spilled on the surface • Less effective when the subsurface is frozen

SECP-1 SEDIMENT AND EROSION AND PREVENTION PRACTICES

Sites where soils are exposed to water, wind, or ice can have erosion and sedimentation problems. Sedimentation occurs when soil particles are suspended in surface runoff or wind and are deposited in streams or other water bodies.

Human activities can accelerate erosion by removing vegetation, compacting, or disturbing the soil, changing natural drainage patterns, and by covering the ground with impermeable surfaces (pavement, concrete, buildings). When the land surface is developed or "hardened" in this manner, storm water cannot infiltrate. This results in larger amounts of water moving more quickly across a site which can carry more sediment and other pollutants to streams and rivers.

Areas that may have a high potential for soil erosion are noted in the enclosed plan. This plan also includes areas with such heavy activity that plants cannot grow, soil stockpiles, stream banks, steep slopes, construction and demolition areas, and any area where the soil is disturbed, denuded (stripped of plants), and subject to wind and water erosion.

Seven ways to limit and control sediment and erosion:

- Leave as much vegetation (plants) onsite as possible
- Minimize the time that soil is exposed
- Prevent runoff from flowing across disturbed areas (divert the flow to vegetated areas)
- Stabilize the disturbed soils as soon as possible
- Slow down the runoff flowing across the site
- Provide drainageways for the increased runoff (use grassy swales rather than concrete drains; refer to Grassed Swales BMP SECP-10)
- Remove sediment from storm water runoff before it leaves the site

Using these measures to control erosion and sedimentation is an important part of storm water management. Selecting the best set of sediment and erosion prevention measures depends upon the nature of the activities onsite and other site-specific conditions.

The local Soil Conservation Service Office or County Extension Office can provide information on any special measures necessary to promote vegetation on severely eroded soils.

Vegetation Practices

Preserving existing vegetation or revegetating disturbed soil as soon as possible after construction is the most effective way to control erosion.

Four ways vegetation reduces erosion:

- Shields the soil surface from direct erosive impact of rain.
- Improves the soil's water storage porosity and capacity so more water can infiltrate into the ground.
- Slows the runoff and allows sediment deposits.
- Physically holds the soil in place with plant roots.

Vegetation cover can be grass, trees, shrubs, bark, mulch, or straw. Grasses are the most common type of cover used for revegetation because they grow quickly and provide erosion protection within days. Straw or mulch may be used during nongrowing seasons to prevent erosion. Keep existing shrubs and trees because their established root systems help prevent erosion.

Vegetation and other site stabilization practices can be either temporary or permanent controls. Temporary controls provide a cover for exposed or disturbed areas for short periods or until permanent erosion controls are in place. Permanent vegetative practices are used when activities that disturb the soil are completed or when erosion is occurring on an otherwise stabilized site.

SECP-2 DUST CONTROL (INDUSTRIAL)

Dust controls for material handling areas are prevent pollutants from entering storm water discharges by reducing the surface and air transport of dust caused by industrial activities. Consider the following types of controls:

- Water spraying
- Negative pressure systems (vacuum systems)
- Collector systems (bag and cyclone)
- Filter systems
- Street sweeping

The purpose of industrial dust control is to collect or contain dusts to prevent storm water runoff from carrying the dusts to the sewer collection system or to surface waters.

Dust control is useful in any process area, loading and unloading area, material handling areas, and transfer areas where dust is generated. Street sweeping is limited to paved areas.

Mechanical dust collection systems are designed according to the size of dust particles and the amount of air to be processed. Manufacturer's recommendations should be followed for installation (as well as the design of the equipment).

If water sprayers are used, dust-contaminated waters should be collected and taken for treatment. Areas will probably need to be resprayed to keep dust from spreading.

Two kinds of street sweepers are common: brush and vacuum. Vacuum sweepers are more efficient and work best when the area is dry.

Mechanical equipment should be operated according to the manufacturer's recommendations and should be inspected regularly.

Advantages of Dust Control (Industrial)	**Disadvantages of Dust Control (Industrial)**
• May cause a decrease of respiratory problems in employees around the site • May cause less material to be lost and may therefore save money • Provides efficient collection of larger dust particles (street sweepers)	• Generally more expensive than manual systems • May be impossible to maintain by plant personnel (the more elaborate equipment) • Labor and equipment intensive and may not be effective for all pollutants (street sweepers)

SECP-3 VEGETATION PRACTICES

Preserving existing vegetation or revegetating disturbed soil as soon as possible after construction is the most effective way to control erosion.

A vegetation cover reduces erosion potential in four ways:

- By shielding the soil surface from direct erosive impact of rain
- By improving the soil's water storage porosity and capacity so more water can infiltrate into the ground
- By slowing the runoff and allowing the sediment to drop out or deposit and
- By physically holding the soil in place with plant roots

Vegetative cover can be grass, trees, shrubs, bark, mulch, or straw. Grasses are the most common type of cover used for revegetation because they grow quickly, providing erosion protection within days. Other soil stabilization practices such as straw or mulch may be used during nongrowing seasons to prevent erosion. Newly planted shrubs and trees establish root systems more slowly, so keeping existing ones is a more effective practice.

Vegetative and other site stabilization practices can be either temporary or permanent controls. Temporary controls provide a cover for exposed or disturbed areas for short periods of time or until permanent erosion controls are put in place. Permanent vegetative practices are used when activities that disturb the soil are completed or when erosion is occurring on an otherwise stabilized site.

SECP-4 PRESERVATION OF NATURAL VEGETATION

The preservation of natural vegetation (existing trees, vines, brushes, and grasses) provides natural buffer zones. By preserving stabilized areas, it minimizes erosion potential, protects water quality, and provides aesthetic benefits. This practice is used as a permanent control measure.

This technique applies to all types of sites. Areas where preserving vegetation can be particularly beneficial are floodplains, wetlands, stream banks, steep slopes, and other areas where erosion controls would be difficult to establish, install, or maintain.

Preserving vegetation on a site should be planned before any site disturbance begins. Preservation requires good site management to minimize the impact of construction activities on existing vegetation. Clearly mark the trees to be preserved and protect them from ground disturbances around the base of the tree. Proper maintenance is important to ensure healthy vegetation that can control erosion. Different species, soil types, and climatic conditions will require different maintenance activities such as mowing, fertilizing, lining, irrigation, pruning, and weed and pest control.

Maintenance should be performed regularly, especially during construction. ***Some state/local regulations require natural vegetation to be preserved in sensitive areas. Consult the appropriate state/local agencies for more regulatory information.***

Advantages of Preservation of Natural Vegetation	**Disadvantages of Preservation of Natural Vegetation**
• Can handle higher quantities of storm water runoff than newly seeded areas • Does not require time to establish (effective immediately) • Increases the filtering capacity because the vegetation and root structure are usually denser in preserved natural vegetation than in newly seeded or base areas • Enhances aesthetics • Provides areas for infiltration, reducing the quantity and velocity of storm water runoff • Allows areas where wildlife can remain undisturbed • Provides noise buffers and screens for onsite operations • Usually requires less maintenance (irrigation, fertilizer) than planting new vegetation	• Requires planning to preserve and maintain the existing vegetation • May not be cost effective with high land costs • May construct area available for construction activities

SECP-5 BUFFER ZONES

Buffer zones are vegetated strips of land used for temporary or permanent water quality benefits. Buffer zones are used to decrease the velocity of storm water runoff, which in turn helps to prevent soil erosion. Buffer zones are different from vegetated filter strips because buffer zone effectiveness is not measured by its ability to improve infiltration. The buffer zone can be an area of vegetation that is left undisturbed during construction, or it can be newly planted.

The buffer zone technique can be used at any site that can support vegetation. Buffer zones are particularly effective on floodplains, next to wetlands, along stream banks, and on steep, unstable slopes.

If buffer zones are preserved, existing vegetation, good planning, and site management are needed to protect against disturbances such as grade changes, excavation, damage from equipment, and other activities. Establishing new buffer strips requires the establishment of a good dense turf, trees, and shrubs. Careful maintenance is important to ensure healthy vegetation. The need for routine maintenance such as mowing, fertilizing, liming, irrigating, pruning, and weed and pest control will depend upon the species of plants and trees involved, soil types, and climatic conditions. Maintaining planted areas may require debris removal and protection against unintended uses or traffic.

Many state/local storm water program or zoning agencies have regulations which define required or allowable buffer zones especially near sensitive areas such as wetlands. Contact the appropriate state/local agencies for their requirements.

Advantages of Buffer Zones	Disadvantages of Buffer Zones
• Provide aesthetic as well as water quality benefits • Provide areas for infiltration, which reduces amount and speed of storm water runoff • Provide areas for wildlife habitat • Provide areas for recreation • Provide buffers and screens for onsite noise if trees or large brushes are used • Low maintenance requirements • Low cost when using existing vegetation	• May not be cost effective to use if the cost of land is high • Are not feasible if land is not available • Require plant growth before they are effective

SECP-6 STREAM BANK STABILIZATION

Stream bank stabilization is used to prevent stream bank erosion from high velocities and quantities of storm water runoff. Typical methods include the following:

- Riprap — Large angular stones placed along the stream bank or lake.
- Gabion — Rock-filled wire cages used to create a new stream bank.
- Reinforced Concrete — Concrete bulkheads and retaining walls that replace natural stream banks and create a non-erosive surface.
- Log Cribbing — Retaining walls built of logs to anchor the soils against erosive forces; usually built on the outside of stream bends.
- Grid Pavers — Precast or poured-in-place concrete units placed along stream banks to stabilize the stream bank and create open spaces where vegetation can be established.
- Asphalt — Asphalt paving placed along the natural stream bank to create a non-erosive surface.

Stream bank stabilization is used where vegetative stabilization practices are not practical and where the stream banks are subject to heavy erosion from increased flows or disturbance during construction. Stabilization should occur before any land development in the watershed area. Stabilization can also be retrofitted when stream bank erosion occurs.

Stream bank stabilization structures should be planned and designed by a licensed professional engineer. ***Applicable federal, state, and local requirements should be followed, including Clean Water Act Section 404 regulations***. An important design feature of stream bank stabilization methods is the foundation of the structure; the potential for the stream to erode the sides and bottom of the channel should be considered to make sure the stabilization measure will be supported properly. Structures can be designed to protect and improve natural wildlife habitats. Only pressure-treated wood should be used in log structures. Permanent structures should be designed to handle expected flood conditions. A well-designed layer of stone can be used in many ways and in many locations to control erosion and sedimentation. Riprap is either a uniform size or graded (different sizes) and is usually applied in an even layer throughout the stream. Reinforced concrete structures may require positive drainage behind the bulkhead or retaining wall to prevent erosion around the structure. Gabion and grid pavers should be installed according to manufacturer's recommendations.

Stream bank stabilization structures should be inspected during and after each large storm event. Structures should be maintained as installed. Structural damage should be repaired as soon as possible to prevent further damage to or erosion of the stream bank.

Advantages of Stream Bank Stabilization	**Disadvantages of Stream Bank Stabilization**
• Can provide control against erosive forces caused by the increase in storm water flows created during land development • Usually will not require as much maintenance as vegetative erosion controls • May provide wildlife habitats • Forms a dense, flexible, self-healing cover that will adapt well to uneven surfaces (riprap)	• Does not provide the water quality or aesthetic benefits that vegetative practices could • Should be designed by qualified professional engineers, which may increase project costs • May be expensive (materials costs) • May require additional permits for structure • May alter stream dynamics which cause changes in the channel downstream • May cause negative impact to wildlife habitats

SECP-7 MULCHING, MATTING, AND NETTING

Mulching is a temporary soil stabilization or erosion control practice where materials such as grass, hay, woodchips, wood fibers, straw, or gravel are placed on the soil surface. In addition to stabilizing soils, mulching can reduce the speed of storm water runoff over an area. When used together with seeding or planting, mulching can aid in plant growth by holding the seeds, fertilizers, and topsoil in place, by preventing birds from eating seeds, helping to retain moisture, and by insulating against extreme temperatures. Mulch mattings are materials (jute or other wood fibers) that have been formed into sheets of mulch that are more stable than normal mulch. Netting is typically made from jute, other wood fiber, plastic, paper, or cotton and can be used to hold the mulching and matting to the ground. Netting can also be used alone to stabilize soils while the plants are growing; however, it does not retain moisture or temperature well. Mulch binders (either asphalt or synthetic) are sometimes used instead of netting to hold loose mulches together.

Mulching is often used alone in areas where temporary seeding cannot be used because of the season or climate. Mulching can provide immediate, effective, and inexpensive erosion control. On steep slopes and critical areas such as waterways, mulch matting is used with netting or anchoring to hold it in place.

Mulch seeded and planted areas where slopes are steeper than 2:1, where runoff is flowing across the area, or when seedlings need protection from bad weather.

Using mulch may or may not require a binder, netting, or the tacking of mulch to the ground. Effective netting and matting require firm, continuous contact between the materials and the soil. If there is no contact, the material will not hold the soil and erosion will occur underneath the material. Final grading is not necessary before mulching. Mulched areas should be inspected often to find where mulched material has been loosened or removed. Such areas should be reseeded (if necessary) and the mulch cover replaced immediately. Mulch binders should be applied at rates recommended by the manufacturer or, if asphalt is used, at rates of approximately 480 gallons per acre.

Advantages of Mulching, Matting, and Netting	**Disadvantages of Mulching, Matting, and Netting**
• Provide immediate protection to soils that are exposed and that are subject to heavy erosion • Retain moisture, which may minimize the need for watering • Require no removal because of natural deterioration of mulching and matting	• May delay germination of some seeds because cover reduces the soil surface temperature • Netting should be removed after usefulness is finished, than landfilled or composted

SECP-8 PERMANENT SEEDING AND PLANTING

Permanent grass seeding and planting trees and brush provides soil stabilization by holding soil particles in place. Vegetation reduces sediment and runoff to downstream areas by slowing the runoff velocity and permitting greater runoff infiltration. Vegetation also filters sediments, helps the soil absorb water, improves wildlife habitats, and enhances site aesthetics.

Permanent seeding and planting is appropriate for any grade or cleared area where long-lived plant cover is desired. Some areas where permanent seeding is especially important are filter strips, buffer areas, vegetated swales, steep slopes, and stream banks. This practice is effective on areas where soils are unstable because of their texture, structure; a high water table, high winds, or steep slope. When seeding in northern areas during fall or winter, cover the area with mulch to provide a protective barrier against cold weather (Refer to Mulching BMP SECP-7). Seeding should also be mulched if the seeded area slopes 4:1 or more, if soil is sandy or clayey, or if weather is excessively hot or dry. Plant when conditions are most favorable for growth. When possible, use low-maintenance local plant species. Install all other erosion control practices such as dikes, basins, and surface runoff control measures before planting.

For this practice to work, it is important to select appropriate vegetation, prepare a good seedbed, properly time planting, and water and fertilize. Planting local plants during their regular growing season will increase the chances for success and may lessen the need for watering. Check seeded areas frequently for proper watering and growth conditions.

Topsoil should be used on areas where topsoils have been removed, where the soils are dense or impermeable, or where mulching and fertilizers alone cannot improve soil quality. Topsoiling should be coordinated with the seeding and planting practices and should not be planned while the ground is frozen or too set. Topsoil layers should be at least 2 inches deep (or similar to the existing topsoil depth).

Remove as little existing topsoil as possible to minimize erosion and sedimentation. All site controls should be in place before the topsoil is removed. If topsoils are brought in from another site, it is important that its texture is compatible with the subsoils onsite; for example, sandy topsoils are not compatible with clay subsoils.

Stockpiling of topsoils onsite requires good planning so soils will not obstruct other operations. If soil is to be stockpiled, consider using temporary seeding, mulching, or silt fencing to prevent or control erosion. Inspect the stockpiles frequently for erosion. After topsoil has been spread, inspect it regularly, and reseed or replace areas that have eroded.

Advantages of Permanent Seeding and Planting	**Disadvantages of Permanent Seeding and Planting**
• Improves the aesthetics of a site • Provides excellent stabilization • Provides filtering of sediments • Provides wildlife habitat • Relatively inexpensive	• May require irrigation to establish vegetation • Depends initially upon climate and weather for success

SECP-9 SODDING

Sodding stabilizes an area by establishing permanent vegetation, providing erosion and sedimentation controls, and providing areas where storm water can infiltrate the ground.

Sodding is appropriate for any grades or cleared area that might erode and where a permanent, long-lived plant cover is needed immediately. Examples of where sodding can be used are buffer zones, stream banks, dikes, swales, slopes, outlets, level spreaders, and filter strips.

The soil surface should be fine-graded before laying down the sod. Topsoil may be needed in areas where the soil textures are inadequate (Refer to Permanent Seeding and Planting BMP SECP-8). Lime and fertilizers should be added to the soil to promote good growth conditions. Sodding can be applied in alternating strips or other patterns, or alternate areas can be seeded to reduce expense. Sod should not be planted during very hot or wet weather. Sod should not be placed on slopes that are greater than 3:1 if they are to be mowed. If placed on steep slopes, sod should be laid with staggered joints/be pegged. In areas such as steep slopes or next to running waterways, chicken wire, jute, or other netting can be placed over the sod for extra protection against lifting (Refer to Mulching, Matting, and Netting BMP SECP-7). Sod should be rolled or compacted immediately after installation to ensure firm contact with the underlying topsoil. Inspect the sod frequently after it is first installed, especially after large storm events, until it is established as permanent cover. Remove and replace dead sod. Watering may be necessary after planting and during periods of intense heat/lack of rain.

Advantages of Sodding	Disadvantages of Sodding
• Can provide immediate vegetative cover and erosion control • Provide more stabilizing protection than initial seeding through dense cover formed by sod • Produces lower week growth than seeded vegetation • Can be used for site activities within a shorter time than can seeded vegetation • Can be placed at any time of the year as long as moisture conditions in the soil area favorable, except when the ground is frozen	• Purchase and installation costs are higher than for seeding • May require continued irrigation if the sod is placed during dry seasons or on sandy soils

SECP-10 GRASSED SWALES

Grassed swales are vegetated depressions used to transport, filter, and remove sediments. Grassed swales control high runoff rates by reducing the speed of the runoff and by reducing the volume of the runoff through infiltration of the storm water. Pollutants are removed because runoff travels slowly and infiltrates into the soil and because the vegetation in the grass swale works as a filter or strainer.

Grassed swales are suitable for most areas where storm water runoff is low. Certain factors will affect the operation of grassed swales, including soil type, land features, and the depth of the soil from the surface to the water table (top of the drenched portion of the soil or bedrock layer). The soil must be permeable for runoff to be able to infiltrate well. Sandy soils will not hold vegetation well or from a stable channel structure. Steep slopes will increase runoff rates and create greater potential for erosion. Storm water flows will not be easily absorbed where the water table is near the surface. Swales are most useful for sites smaller than 10 acres. Even without highly permeable soils, swales reduce velocity and are used for that reason.

Grassed swales usually do not work well for construction runoff because the runoff has high sediment loads.

The channel of the swale should be as level as possible to maximize infiltration. Side slopes in the swale should be designed to no steeper than 3:1 to minimize channel erosion. Plans should consider:

- Use of existing topography and existing drainage patterns

- Highest flow rate is expected from a typical storm to determine the most practical size for the swale (in keeping with state or local requirements).

The swale should be lightly tilled before grass is planted, and a dense cover of grasses (seed or sod) should be planted. The location of the swale will determine the best type of vegetation.

Check dams may be installed in the swales to reduce runoff speed and increase infiltration.

Maintenance activities for the swales include those practices needed to maintain healthy, dense vegetation and to retain efficient infiltration and movement of the storm water into and through the swale. Periodic mowing, reseeding, and weed control are required to maintain pollutant removal efficiency. The swale and channel outlet should be kept free from sediment buildup, litter, brush, or fallen tree limbs.

Periodic inspections will identify erosion problems or damaged areas. Damaged or eroded areas of the channel should be repaired as soon as possible. Areas with damaged vegetation should be reseeded/replanted immediately.

Advantages of Grassed Swales	**Disadvantages of Grassed Swales**
• Easily designed and constructed • Provide moderate removal of sediments if properly constructed and maintained • May provide a wildlife habitat • Inexpensive • Can replace curb and gutter systems • Can last for long periods of time if well maintained	• Cannot control runoff from very large storms • If they do not drain property between storms, can encourage nuisance problems such as mosquitoes, ragweed, dumping, and erosion • Not capable of removing significant amounts of soluble nutrients • Cannot treat runoff with high sediment loadings

EC-1 DUST CONTROL (LAND DISTURBANCE AND DEMOLITION AREAS)

Dust controls for land disturbance and demolition areas are any controls that reduce the potential for particles being carried through air or water. Types of dust control are:

- Irrigation — Irrigation is a temporary measure involving a light application of water to moisten the soil surface. The process should be repeated as necessary.
- Minimization of Denuded Areas — Minimizing soil exposure reduces the amount of soil available for transport and erosion. Soil exposure can be lessened by temporary or permanent soil stabilization controls, such as seeding, mulching, topsoiling, spreading crushed stone or coarse gravel, or tree planting. Maintaining existing vegetation on a site will also help control dust.
- Windbreaks — Windbreaks are temporary or permanent barriers that reduce airborne particles by slowing wind velocities (slower winds do not suspend particles). Leaving existing trees and large shrubs in place will create effective windbreaks. More temporary types of windbreaks are solid board fences, snow fences, tarp curtains, hay bales, crate walls, and sediment walls.
- Tillage —- Deep plowing will roughen the soil surface to bring up to the surface cohesive clods of soil, which in turn rest on top of dusts, protecting them from wind and water erosion. This practice is commonly practiced in arid regions where establishing vegetation may take time.
- Chemical Soil Treatment (palliatives) — These are temporary controls that are applied to soil surfaces in the form of spray-on adhesives, such as anionic asphalt emulsion, latex emulsion, resin-water emulsions, or calcium chloride. The palliative is the chemical used. These should be used with caution as they may create pollution if not used correctly.

Dust controls can be used on any site where dust may be generated and where the dust may cause onsite and offsite damage. Dust controls are especially critical where reduced rainfall levels expose soil particles for transport by air and runoff. Dust control should be used in conjunction with other sedimentation controls such as traps.

Soil exposure should be limited to control dust during land disturbance and at demolition area. Work that causes soil disturbance or involves demolition should be done in phases and accompanied by temporary stabilization measures, when possible. These precautions will minimize the amount of soil that is disturbed at any one time and help control dust.

Oil should not be used to control dust because of its high potential for polluting storm water discharges.

Irrigation will be most effective if site drainage systems are checked to ensure that the right amount of water is used. Too much water can cause runoff problems.

Chemical treatment is only effective on mineral soils, as opposed to muck soils, because the chemicals bond better to mineral soils. Vehicular traffic should be routed around chemically-treated areas to avoid tracking the chemicals. Certain chemicals may be inappropriate for some types of soils or application areas. Local governments usually have information about restrictions on the types of palliatives that may be used. Special consideration must be given to preserving groundwater quality whenever chemicals are applied to the land.

Since most of these techniques are temporary controls, sites should be inspected often and materials should be reapplied when needed. The frequency for these inspections depends upon site-specific conditions, weather conditions, and the types of technique used.

Advantages of Dust Control (Land Disturbance and Demolition Areas)	**Disadvantages of Dust Control (Land Disturbance and Demolition Areas)**
• Can help prevent wind- and water-based erosion of disturbed areas and will reduce respiratory problems in employees • Some types can be implemented quickly at low cost and effort (except wind breaks) • Helps preserve the aesthetics of the site and screens certain activities from view (wind breaks) • Vegetative wind breaks are permanent and an excellent alternative to chemical use	• Some types are temporary and must be reapplied or replenished regularly • Some types are expensive (irrigation and chemical treatment) and may be ineffective under certain conditions • May result in health/environmental hazards, if over-application of the chemicals leaves large amounts exposed to wind and rain erosion or groundwater contamination • May create excess runoff that the site was not designed to control (irrigation) • May cause increased offsite tracking of mud (irrigation) • Is not as effective as chemical treatment or mulching and seeding; requires land space that may not be available at all locations (wind breaks)

EC-2 TEMPORARY SEEDING

Temporary seeding means growing a short-term vegetative cover (plants) on disturbed site areas that may be in danger of erosion. The purpose of temporary seeding is to reduce erosion and sedimentation by stabilizing disturbed areas that will not be stabilized for long periods, or where permanent plant growth is not necessary or appropriate. This practice uses fast-growing grasses whose root systems hold down the soils so that they are less apt to be carried offsite by storm water runoff or wind. Temporary seeding also reduces the problems associated with mud and dust from bare soils surfaces during construction.

Temporary seeding should be performed on areas which have been disturbed by construction and which are likely to be redisturbed, but not for several weeks or more. Typical areas might include denuded areas, soil stockpiles, dikes, dams, sides of sediment basins, and temporary road banks. Temporary seeding should take place as soon as practicable after the last land disturbing activity in an area. Temporary seeding may not be an effective practice in arid and semi-arid regions where the climate prevents fast plant growth, particularly during the dry seasons. In those areas, mulching or chemical stabilization may be better for the short term (Refer to Mulching BMP SECP-7 and Chemical Stabilization BMP EC-3).

Proper seed bed preparation and the use of high-quality seed are needed to grow plants for effective erosion control. Soil that has been compacted by heavy traffic or machinery may need to be loosened. Successful growth usually requires that the soil be tilled before the seed is applied. Topsoiling is not necessary for temporary seeding; however, it may improve the chances of establishing temporary vegetation in an area. Seed bed preparation may also require applying fertilizer/lime to the soil to make conditions more suitable for plant growth. Proper fertilizer, seeding mixtures, and seeding rates vary depending upon the location of the site, soil types, slopes, and season. Local suppliers, state and local regulatory agencies, and the U.S. Department of Agriculture Soil Conservation Service will supply information on the best seed mixes and soil-conditioning methods.

Seeded areas should be covered with mulch to provide protection from the weather. Seeding on slopes of 2:1 or more, in adverse soil conditions, during excessively hot or dry weather, or where heavy rain is expected should be followed by spreading mulch (Refer Mulching BMP SECP-7).

Frequent inspections are necessary to ensure that conditions for growth are good. If the plants do not grow quickly or thick enough to prevent erosion, the area should be reseeded as soon as possible. Seeded areas should be kept adequately moist. If normal rainfall is insufficient the seeded area should be watered. Watering rates should be watched so that over-irrigation (which can cause erosion itself) does not occur.

Advantages of Temporary Seeding	**Disadvantages of Temporary Seeding**
• Generally inexpensive and easy to do • Establishes plant cover fast when conditions are good • Stabilizes soils well, is aesthetic, and can provide sedimentation controls for other site areas • May help reduce costs of maintenance on other erosion controls (sediment basins may need to be cleaned out less often)	• Depends heavily upon the season and rainfall rate for success • May require extensive fertilizing of plants grown on some soils, which can cause problems with local water quality • Requires protection from heavy use, once seeded • May produce vegetation that requires irrigation and maintenance

EC-3 CHEMICAL STABILIZATION

Chemical stabilization practices, often referred to as a chemical mulch, soil binder, or soil palliative (Refer to Dust Control BMP EC-1), are temporary erosion control practices. Materials made of vinyl, asphalt, or rubber are sprayed onto the surface of the soil to hold in place and protect against erosion from storm water runoff and wind. Many of the products used for chemical stabilization are human-made, and many different products are on the market.

Chemical stabilization can be used as an alternative in areas where temporary seeding practices cannot be used because of the season or climate. It can provide immediate, effective, and inexpensive erosion control anywhere erosion is occurring on a site.

The application rates and procedures recommended by the manufacturer of a chemical stabilization product should be followed as closely as possible to prevent the products from ponding and from creating large areas where moisture cannot get through.

Advantages of Chemical Stabilization	**Disadvantages of Chemical Stabilization**
• Easily applied to the surface of the soil • Effective in stabilizing areas where plants will not grow • Provides immediate protection to soils that are in danger of erosion	• Can create impervious surfaces (where water cannot get through), which may in turn increase the amount and speed of storm water runoff • May caused harmful effects on water quality if not used correctly • Usually more expensive than vegetative cover

EC-4 INTERCEPTOR DIKES AND SWALES

Interceptor dikes (ridges of compacted soil) and swales (excavated depression) are used to keep upslope runoff from crossing areas where there is a high risk of erosion. They reduce the amount and speed of flow and then guide it to a stabilized outfall (point of discharge) or sediment trapping area. (Refer to Outlet Protection BMP EC-12; Level Spreaders BMP SE-10; Vegetated Filter Strips BMP EC-16; Sediment Traps BMP EC-10; and Temporary Sediment Basins BMP EC-11). Interceptor dikes and swales divert runoff using a combination of earthen dike and vegetated swale (Refer to Grassed Swales BMP SECP-10). Runoff is channeled away from locations where there is a high risk of erosion by placing a diversion dike or swale at the top of a sloping disturbed area. Dikes and swales also collect overland flow, changing it into concentrated flows (flows that are combined). Interceptor dikes and swales can be either temporary or permanent storm water control structures.

Interceptor dikes and swales are generally built around the perimeter of a construction site before any major soil-disturbing activity takes place. Temporary dikes or swales may also be used to protect existing buildings; areas, such as stockpiles; or other small areas that have not yet been fully stabilized. When constructed along the upslope perimeter of a disturbed or high-risk area (though not necessarily all the way around it), dikes or swales prevent runoff from uphill areas from crossing the unprotected slope. Temporary dikes or swales constructed on the down-slope side of the disturbed or high-risk area will prevent runoff that contains sediment from leaving the site before sediment is removed. For short slopes, a dike or swale at the top of the slope reduces the amount of runoff reaching the disturbed area. For longer slopes, several dikes or swales are placed across the slope at intervals. This practice reduces the amount of runoff that accumulates on the face of the slope and carries the runoff safely down the slope. In all cases, runoff is guided to a sediment trapping area or a stabilized outfall before release.

Temporary dikes and swales are used in areas of overland flow; if they remain in place longer than 15 days, they should be stabilized. Runoff channeled by a dike or swale should be directed to an adequate sediment trapping area or stabilized outfall. Care should be taken to provide enough slope for drainage but not too much slope to cause erosion due to high runoff flow speed. Temporary interceptor dikes and swales may remain in place as long as 12 to 18 months (with proper stabilization) or be rebuilt at the end of each day's activities. Dikes or swales should remain in place until the area they were built to protect is permanently stabilized. Interceptor dikes and swales can be permanent controls. However, permanent controls should be designed to handle runoff after construction is complete; should be permanently stabilized; and should be inspected and maintained regularly. Temporary and permanent control measures should be inspected once each week on a regular schedule and after every storm. Repairs necessary to the dike and flow channel should be made promptly.

Advantages of Interceptor Dikes and Swales	**Disadvantages of Interceptor Dikes and Swales**
• Are simple and effective for channeling runoff away from areas subject to erosion • Can handle flows from large drainage areas • Are inexpensive because they use materials and equipment normally found onsite	• If constructed improperly, can cause erosion and sediment transport since flows are concentrated • May cause problems to vegetation growth if water flow is too fast • Require additional maintenance, inspections, and repairs

EC-5 FILTER FENCE

A filter fence, also called "silt fence" is a temporary measure for sedimentation control. It usually consists of posts with filter fabric stretched across the posts and sometimes with a wire support fence. The lower edge of the fence is vertically trenched and covered by backfill. A silt fence is used in small drainage areas to detain sediment. These fences are most effective where there is overland flow or in minor swales or drainageways. They prevent sediment from entering receiving waters. Silt fences are also used to catch windblown sand. Aside from the traditional wooden post and filter fabric method, there are several variations of silt fence installation including silt fence which can be purchased with pockets pre-sewn for using with steel fence posts.

A silt fence should be installed before major soil disturbance in the drainage area. Such a structure is only appropriate for drainage areas of 1.0 acre or less with velocities of 0.5 cubic feet per second or less. The fence should be placed across the bottom of a slope or minor drainageway along a line of uniform elevation (perpendicular to the direction of flow) and can be used at the outer boundary of the work area. The fence does not have to surround the work area completely. In addition, a silt fence is effective where sheet and rill (small watercourse that has steep sides and is usually on a few inches deep) erosion may be a problem. Silt fences should not be constructed in streams or swales. Install silt fences in accordance with the manufacturer's recommendations.

A silt fence is not appropriate for a large area or where the flow rate is greater than 0.5 cubic feet per second. This type of fence can be more effective than a straw bale barrier if properly installed and maintained and may be used in combination with other erosion/sediment practices.

The effective life span for a silt fence is approximately 6 months. During this period, the fence requires frequent inspection and prompt maintenance to maintain its effectiveness. Inspect the fence after each rainfall. Check for areas where runoff eroded a channel beneath the fence, or where the fence was caused to sag or collapse by runoff flowing over the top. Remove and properly dispose of sediment when it is one-third to one-half the height of the fence or after each storm.

Advantages of Filter Fence	Disadvantages of Filter Fence
• Remove sediments and prevents downstream damage from sediment deposits	• May result in failure from improper choice of pore size in the filter fabric or improper installation
• Reduces the speed of runoff flow	• Should not be used in streams
• Minimal clearing and grubbing required for installation	• Only appropriate for small drainage areas with overland flow
• Inexpensive	• Frequent inspection and maintenance is necessary to ensure effectiveness

EC-6 STRAW BALE BARRIER

Straw bales can be used as temporary sediment barrier. They are placed end to end in a shallow excavated trench (with no gaps in between) and staked into place. If properly installed, they can detain sediment and reduce flow velocity from small drainage areas. A straw bale barrier prevents sediment from leaving the site by trapping the sediment in the barrier while allowing the runoff to pass through. It can also be used to decrease the velocity of sheetflow or channel flows of low-to-moderate levels.

A straw bale barrier should be installed before major soil disturbance in the drainage area. This type of barrier is placed perpendicular to the flow, across the bottom of a slope or minor drainageway where there is sheetflow. It can be used at the perimeter of the work area, although it does not have to surround it completely. It can also be very effective when used in combination with other erosion and sediment control practices. A straw bale barrier may be used where the length of slope behind the barrier is less than 100 feet and where the slope is less than 2:1.

The success of a straw bale barrier depends upon proper installation. The bales must be firmly staked into the entrenchment ditch and the ditch must be properly backfilled. To function effectively, the bales must be placed end to end and there can be no gaps between the bales.

Straw bale barriers are useful for approximately 3 months. They must be inspected and repaired immediately after each rainfall or daily if there is prolonged rainfall. Damaged straw bales require immediate replacement. After each storm, or on a regular basis, trapped sediments must be removed and disposed of properly.

Advantages of a Straw Bale Barrier	Disadvantages of a Straw Bale Barrier
• Can prevent downstream damage from sediment deposits if properly installed, used, and maintained • Can be an inexpensive way to reduce or prevent erosion	• May not be used in streams or large swales • Poses a risk of washouts if the barrier is installed improperly or a storm is severe • Short life span and a high inspection and maintenance requirement • Appropriate for only small drainage areas • Easily subject to misuse and can contribute to sediment problems

EC-7 BRUSH BARRIER

A brush barrier is a temporary sediment barrier constructed from materials resulting from onsite clearing and grubbing. It is usually constructed at the bottom perimeter of the disturbed area. Filter fabric is sometimes used as an anchor over the barrier to increase its filtering efficiency. Brush barriers are used to trap and retain small amounts of sediment by intercepting the flow from small areas of soil disturbance.

A brush barrier should only be used to trap sediment from runoff which is from a small drainage area. The slope which the brush barrier is placed across should be very gentle. Do not place a brush barrier in a swale or any other channel. Brush barriers should be constructed below areas subject to erosion.

Brush barrier construction barrier should be started as soon as clearing and grubbing has produced enough material to make the structure. Wood chips should not be included in the material used for the barrier because of the possibility of leaching. When the site has been stabilized and any excess sediment has been disposed of properly, the filter fabric can be removed. Over time, natural vegetation will establish itself within the barrier, and the barrier itself will decompose.

It should not be necessary to maintain the brush barrier unless there is a very large amount of sediment being deposited. If used, the filter fabric anchor should be checked for tears and the damaged sections replaced promptly. The barrier should be inspected after each rainfall and checked for areas breached by concentrated flow. If necessary, repairs should be made promptly and excess sediment removed and disposed of properly.

Advantages of a Brush Barrier	**Disadvantages of a Brush Barrier**
• Can help prevent downstream damage from sediment deposits • Constructed of cleared onsite materials and, thus, is inexpensive • Usually requires little maintenance, unless there are very heavy sediment deposits	• Does not replace a sediment trap or basin • Appropriate for only small drainage areas • Very limited sediment retention

EC-8 GRAVEL OR STONE FILTER BERM

A gravel or stone filter berm is a temporary ridge constructed of loose gravel, stone, or crushed rock. It slows and filters flow, diverting it from an exposed traffic area. Diversions constructed of compacted soil may be used where there will be little or no construction traffic. They are also used for directing runoff to a stabilized outlet.

This method is appropriate where construction will accommodate vehicular traffic. Berms are meant for use in areas with shallow slopes. They may also be used at traffic areas within the construction site.

Berm material should be well graded gravel or crushed rock. The spacing of the berms will depend upon the slope's steepness: berms should be *placed* ***closer together as the slope increases.*** The diversion should be inspected daily, after each rainfall, or if breached by construction or other vehicles. All needed repairs should be performed immediately. Accumulated sediment should be removed and properly disposed of and the filter material replaced, as necessary.

Advantages of a Gravel or Stone Filter Berm	**Disadvantages of a Gravel or Stone Filter Berm**
• Very efficient method of sediment control	• More expensive than methods that use onsite materials • Very limited life span • Difficult to maintain because clogging from mud and soil

EC-9 STORM DRAIN INLET PROTECTION

Storm drain inlet protection is a filtering measure placed around any inlet or drain to trap sediment. This mechanism prevents the sediment from entering inlet structures. Additionally, it serves to prevent the silting-in (clogging) of inlets, storm drainage systems, or receiving channels. Inlet protection may be composite of gravel and stone with a wire mesh filter, block and gravel, filter fabric, or sod.

This type of protection is appropriate for small drainage areas where storm drain inlets will be ready for use before final stabilization. Storm drain inlet protection is also used where a permanent storm drain structure is being constructed onsite. Straw bales are not recommended for this purpose. Filter fabric is used for inlet protection when storm water flows are relatively small with low velocities. This practice cannot be used where inlets are paved because the filter fabric should be staked. Block and gravel filters can be used where velocities are higher. Gravel and mesh filters can be used where flows are higher and subject to disturbance by site traffic. Sod used for inlet filters is generally used where sediments in the storm water runoff are low.

Storm drain inlet protection is not meant for use in drainage areas exceeding 1 acre or for large concentrated storm water flows. Installing this measure should take place before any soil disturbance in the drainage area. The type of material used will depend upon site conditions and the size of the drainage area. Inlet protection should be used in combination with other measures, such as small impoundments or sediment traps, to provide more effective sediment removal. ***Inlet protection structures should be inspected regularly, especially after a rainstorm.*** Repairs and silt removal should be performed as necessary. Storm drain inlet protection structures should be removed only after the disturbed areas are completely stabilized.

Advantages of Storm Drainage Inlet Protection	**Disadvantages of Storm Drain Inlet Protection**
• Prevents clogging of existing storm drainage systems and the siltation of receiving waters • Reduces the amount of sediment leaving the site	• May be difficult to remove collected sediment • May cause erosion elsewhere if clogging occurs • Practical only for low sediment, low volume flows

EC-10 SEDIMENT TRAP

A sediment trap is formed by excavating a pond or by placing an earthen embankment across a low area or drainage swale (vegetated depressions used to transport, filter, and remove sediments). (Refer to Grassed Swales BMP SECP-10). An outlet or spillway is constructed using large stones or aggregate to slow the release of runoff. The trap retains the runoff long enough to allow most of the silt to settle out.

A temporary sediment trap may be used in conjunction with other temporary measures, such as gravel construction entrances, vehicle wash areas, slope drains, diversion dikes and swales, or diversion channels. This device is appropriate for sites with short time schedules.

Sediment traps are suitable for small drainage areas, usually no more than 10 acres with no unusual drainage features. The trap should be large enough to allow the sediments to settle and should have a capacity to store the collected sediment until it is removed. The volume of storage required depends upon the amount and intensity of expected rainfall and on estimated quantities of sediment in the storm water runoff.

A sediment trap is effective for approximately 18 months. During this period, the trap should be readily accessible for periodic maintenance and sediment removal. Traps should be inspected after each rainfall and cleaned when no more than half the design volume has been filled with collected sediment. The trap should remain in operation and be properly maintained until the site area is permanently stabilized by vegetation/when permanent structures are in place.

Advantages of a Sediment Trap	Disadvantages of a Sediment Trap
• Protects downstream areas from clogging or damage due to sediment deposits • Inexpensive and simple to install • Can simplify the design process by trapping sediment at specific spots onsite	• Suitable only for a limited area • Effective only if properly maintained • Will not remove very fine silts and clays • Short life span

EC-11 TEMPORARY SEDIMENT BASIN

A temporary sediment basin is a settling pond with a controlled storm water release structure used to collect and store sediment produced by construction activities. A sediment basin can be constructed by excavation or by placing an earthen embankment across a low area or drainage swale (vegetated depressions used to transport, filter, and remove sediments). (Refer to Grassed Swales BMP SECP-10). Sediment basins can be designed to maintain a permanent pool or to drain completely dry. The basin detains sediment-laden runoff from larger drainage areas long enough to allow most of the sediment to settle out.

The pond has a gravel outlet or spillway to slow the release of runoff and provide some sediment filtration. By removing sediment, the basin helps prevent clogging of offsite conveyance systems and sediment-loading of receiving waterways which helps prevent destruction of waterway habitats.

A temporary sediment basin should be installed before clearing and grading is undertaken. It should not be built on an embankment in an active stream. The creation of a dam in such a site may result in the destruction of aquatic habitats. Dam failure can also result in flooding. A temporary sediment basin should be located only where there is sufficient space and appropriate topography. The basin should be made large enough to handle the maximum expected amount of site drainage. Fencing around the basin may be necessary for safety or vandalism reasons.

A temporary sediment basin used in combination with other control measures, such as seeding or mulching, is especially effective for removing sediments.

Temporary sediment basins are usually designed for disturbed areas larger than 5 acres. The pond should be large enough to hold runoff long enough for sediment to settle. Sufficient space should be allowed for collected sediments. The useful life of a temporary sediment basin is about 12 to 18 months.

Sediment trapping efficiency is improved by providing the maximum surface area possible. Because finer silts may not settle out completely, additional erosion control measures should be used to minimize release of fine silt. ***Runoff should enter the basin as far from the outlet as possible to provide maximum retention time.***

Sediment basins should be readily accessible for maintenance and sediment removal. They should be inspected after each rainfall and be cleaned out when about half the volume has been filled with sediment. The sediment basin should remain in operation and be properly maintained until the site area is permanently stabilized by vegetation/when permanent structures are in place. The embankment forming the sedimentation pool should be well compacted and stabilized with vegetation. If the pond is near a residential area, it is recommended for safety reasons that a sign be posted and that the area be secured by a fence. A well-built temporary sediment basin that is large enough to handle the post-construction runoff volume may later be converted to use as a permanent storm water management structure.

Advantages of a Temporary Sediment Basin	**Disadvantages of a Temporary Sediment Basin**
• Protects downstream areas from clogging or damage due to sediment deposits generated during construction activities • Can trap smaller sediment particles than sediment traps can because of the longer detention time	• Generally suitable for small areas • Requires regular maintenance and cleaning • Will not remove very fine silts and clays unless used in conjunction with other measures • More expensive way to remove sediment than several other methods • Requires careful adherence to safety practices since ponds are attractive to children

EC-12 OUTLET PROTECTION

Outlet protection reduces the speed of concentrated storm water flows and reduces erosion or scouring at storm water outlets and paved channel sections. Outlet protection also lowers the potential for downstream erosion. This type of protection can be achieved through a variety of techniques, including stone or riprap, concrete aprons, paved sections and settling basins installed below the storm drain outlet.

Outlet protection should be installed at all pipe, interceptor dike, swale, or channel section outlets where the velocity of flow may cause erosion at the pipe outlet and in the receiving channel. Outlet protection should also be used at outlets where the velocity of flow at the design capacity may result in plunge pools (small permanent pools located at the inlet to or the outfall from applied BMPs. Outlet protection should be installed early during construction, but may be added at any time, as necessary.

The exit velocity of the runoff as it leaves the outlet protection structure should be reduced to levels that minimize erosion. Outlet protection should be inspected on a regular schedule to look for erosion and repairs should be made promptly.

Advantages of Outlet Protection	Disadvantages of Outlet Protection
• Provides, with riprap-line apron (the most common outlet protection), a relatively low cost method that can be installed easily on most sites • Removes sediment in addition to reducing flow speed • Can be used at most outlets where the flow speed is high • Inexpensive but effective measure • Requires less maintenance than many other measures	• May be unsightly • May cause problems in removing sediment (without removing and replacing the outlet protection structure itself) • May require frequent maintenance for rock outlets with high velocity flows

EC-13 CHECK DAMS

A check dam is a small, temporary or permanent dam constructed across a drainage ditch, swale, or channel to lower the speed of concentrated flows. Reduced runoff speed reduces erosion and gully formation in the channel which allows sediments and other pollutants to settle out.

A check dam should be installed in steeply sloped swales, or in swales where adequate vegetation cannot be established. A check dam may be built from logs, stone, or pea gravel-filled sandbags.

Check dams should be used only in small open channels that drain 10 acres or less. The dams should not be placed in streams (unless approved by appropriate state authorities).

The center section of the check dam should be lower than the edges. Dams should be spaced so that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

After each significant rainfall, check dams should be inspected for sediment and debris accumulation. Sediment should be removed where it reaches one half the original dam height. Check for erosion at edges and repair promptly as required. After construction is complete, all stone and riprap should be removed if vegetative erosion controls will be used as a permanent erosion control measure. It will be important to know the expected erosion rates and runoff flow rate for the swale (vegetated depressions used to transport, filter, and remove sediments) (refer to Grassed Swales BMP SECP-10) in which this measure is to be installed. A licensed professional engineer should design this type of BMP.

Advantages of Check Dams	Disadvantages of Check Dams
• Are inexpensive and easy to install • May be used permanently if designed properly • Allow a high proportion of sediment in the runoff to settle out • Reduce velocity and provide aeration of the water • May be used where it is not possible to divert the flow or otherwise stabilize the channel	• May kill grass linings in channels if the water level remains high after it rains or if there is significant sedimentation • Useful only for drainage areas of 10 acres or less

EC-14 SURFACE ROUGHENING

Surface roughening is a temporary erosion control practice. The soil surface is roughened by the creation of horizontal grooves, depressions, or steps that run parallel to the contour of the land. Slopes that are not fine-graded and that are left in a roughened condition can also control erosion. Surface roughening reduces the speed of runoff, increases infiltration, and traps sediment. Surface roughening also helps establish vegetative cover by reducing runoff velocity and giving seed an opportunity to take hold and grow.

Surface roughening is appropriate for all slopes. To slow erosion, roughening should be done as soon as possible after the vegetation has been removed from the slope. Roughening can be used with both seeding and planting and temporary mulching to stabilize an area. For steeper slopes and slopes that will be left roughened for longer periods of time, a combination of surface roughening and vegetation is appropriate.

Different methods can be used to roughen the soil surface on slopes. They include stair-step grading, grooving (using disks, spring harrows, or teeth on a front-end loader), and tracking (driving a crawler tractor up and down a slope, leaving the cleat imprints parallel to the slope contour). The selection of an appropriate method depends upon the grade of the slope, mowing requirements after vegetative cover is established, whether the slope was formed by cutting or filling, and types of equipment available.

Cut slopes with a gradient steeper than 3:1 but less than 2:1 should be stair-step graded or groove cut. Stair-step grading works well with soils containing large amounts of small rock. Each step catches material discarded from above and provides a level site where vegetation can grow. Stairs should be wide enough to work with standard earth moving equipment. Grooving can be done by any implement that can be safely operated on the slope, including those described above. Grooves should not be less than 3 inches deep nor more than 15 inches apart. Fill slopes with a gradient steeper than 3:1 but less than 2:1 should be compacted every 9 inches of depth. The face of the slope should consist of loose, uncompacted fill 4 to 6 inches deep that can be left rough or can be grooved as described above, if necessary.

Any cut or filled slope that will be mowed should have a gradient less than 3:1. Such a slope can be roughened with shallow grooves parallel to the slope contour by using normal tilling. Grooves should be close together (less than 10 inches) and not less than 1 inch deep. Any gradient with a slope greater than 2:1 should be stair-stepped.

It is important to avoid excessive compacting of the soil surface, especially when tracking, because soil compaction inhibits vegetation growth and causes higher runoff speed. It is best to limit roughening with tracked machinery to sandy soils that do not compact easily and to avoid tracking on clay soils. Surface roughened areas should be seeded as quickly as possible. Regular inspections should be made of all surface roughened areas, especially after storms. If rills, (small watercourses that have steep sides and are usually only a few inches deep) appear, they should be filled, graded again, and reseeded immediately. Proper dust control procedures should be followed when surface roughening.

Advantages of Surface Roughening	**Disadvantages of Surface Roughening**
• Provides a degree of instant erosion protection for bare soil while vegetative cover is being established • Inexpensive and simple for short-term erosion control	• Limited effectiveness in anything more than a gentle rain • Only temporary; if roughening or vegetative cover is washed away in a heavy storm or the vegetation does not take hold, the surface will have to be re-roughened and new seed laid

EC-15 GRADIENT TERRACES

Gradient terraces are earthen embankments or ridge-and-channels constructed with suitable spacing and with an appropriate grade. They reduce erosion damage by capturing surface runoff and directing it to a stable outlet at a speed that minimizes erosion.

Gradient terraces are usually limited to use on land that has no vegetation with a water erosion problem, or where it is expected that water erosion will be a problem. Gradient terraces should not be constructed on slopes with sandy or rocky soils. They will be effective only where suitable runoff outlets are or will be made available.

Gradient terraces should be designed and installed according to a plan determined by an engineering survey and layout. It is important that gradient terraces are designed with adequate outlets, such as a grassed waterway, vegetated area, or tile outlet. Every outlet should direct the runoff from the terrace system to a point where the outflow will not cause erosion or other damage. Vegetative cover should be used in the outlet where possible. The design elevation of the water surface of the terrace should not be lower than the design elevation of the water surface in the outlet at their junction, when both are operating at design flow. ***Terraces should be inspected regularly at least once a year and after major storms.*** Proper dust control procedures should be followed while constructing these features (Refer to Dust Control BMP EC-1).

Advantages of Gradient Terraces	Disadvantages of Gradient Terraces
• Reduce runoff speed and increase the distance of overland runoff flow • Hold moisture better than do smooth slopes and minimize sediment loading of surface runoff	• May significantly increase cut and fill cost and cause sloughing if excessive water infiltrates the soil • Not practical for sandy, steep, or shallow soils

EC-16 VEGETATED FILTER STRIPS

Vegetated filter strips are gently sloping areas of natural vegetation or are graded and artificially planted areas used to provide infiltration, remove sediments and other pollutants, and reduce the flow and velocity of the storm water moving across the terrain. Vegetated filter strips provide permanent storm water control measures on a site.

Vegetative filter strips are suited for areas where the soils are well drained or moderately well drained and where the bedrock and the water table are well below the surface. Vegetated filter strips will not function well on steep slopes, in hilly areas, or in highly paved areas because of the high velocity of runoff. Sites with slopes of 15 percent or more may not be suitable for filtering storm water flows. However, they should still be vegetated. This practice can be put into place at any time, provided that climatic conditions allow for planting.

A filter strip must be approximately 20 feet wide, minimum, to function well. The length of the strip should be approximately 50 to 75 feet. Where slopes become steeper, the length of the strip must be increased. Forested strips are always preferred to vegetated strips, and existing vegetation is preferred to planted vegetation. In planning for vegetated strips, consider climatic conditions, since vegetation may not take hold in especially dry/cold regions.

Regular inspections are necessary to ensure the proper functioning of the filter strips. Removing sediments and replanting may be necessary on a regular basis. The entire area should be examined for damage due to equipment and vehicles. Vegetation should be dense. The portions of the strip where erosion may have created ponding of runoff should be inspected and this situation can be eliminated by grading.

Advantages of Vegetated Filter Strips	Disadvantages of Vegetated Filter Strips
• Provide low to moderate treatment of pollutants in storm water while providing a natural look to a site • Can provide habitat for wildlife • Can screen noise and views if trees or high shrubs are planted on the filter strips • Easily constructed and implemented • Inexpensive	• Not effective for high velocity flows (large paved areas or steep slopes) • Require significant land space • May have a short useful life due to clogging by sediments and oil and grease

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CLEAN WATER ACT COMPLIANCE PLANS

LONOKE YARD
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

STORM WATER POLLUTION PREVENTION PLAN, MAY 2012
Appendix A Facility Diagrams
Appendix B Facility Oil Storage and Potential Pollutant Sources Inventory
Appendix C Example Forms
Appendix D Storm Water Permit
Appendix E Best Management Practices Manual
Appendix F Training Presentations
Appendix G Records

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Storm Water Training

Management Level

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Training Objectives

Today, we will work on answering some important questions that matter to Sims Metal Management and will help save you time:

- What changes can be made to improve storm water quality?
- What can be done to reduce the possibility of a spill or release?
- How can monitoring and sampling be made easier and more consistent?
- What do I need to do to be in compliance?

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What is Required of Sims Metal Management?

- The implementation of Best Management Practices (BMPs) to reduce pollution from our scrap metal yards to the "maximum extent practicable".
- Compliance with permits that only allow a small amount of suspended solids, metals, and oil etc. to discharge from our facilities.
- Lots of paperwork!

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Why is this required?

- 1987 - Water Quality Act
  - Amended the Clean Water Act of 1972 to include regulation of storm water and created the storm water permitting process
- 1990 - 40 CFR Part 122
  - Prohibits discharges of storm water associated with industrial activity to a waters of the U.S. without a permit

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Storm Water Regulations

- The Goal?
  - Prevent pollution at the source rather than treat the discharge
- Who is Regulated ?
  - All industrial facilities with storm water discharges associated with industrial activity
- What is Required?
  - Storm water permit coverage
  - Storm Water Pollution Prevention Plan and Team
  - Corporate Approval of Plan

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Typical Sims Metal Management Facility Storm Water Permit Requirements

Discharges Covered	Typical Sims Metal Management Permit Required Activities	Typical Reporting to State Required
Storm Water Associated with Industrial Activity		
Ferrous and non-ferrous metal recycler (SIC Code 5093 and/or 5015)	1. SWPP Plan preparation and implementation 2. SWPP team meetings 3. Annual analytical monitoring 4. Quarterly facility inspections 5. Quarterly visual examinations 6. Non-storm water evaluations 7. Annual compliance evaluation	• Exceedance reporting 30 days • Discharge monitoring reports to be submitted to the state annually

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Developing your Program

- Phase 1: Evaluation
- Phase 2: Planning and Design
- Phase 3: Implementation and Monitoring

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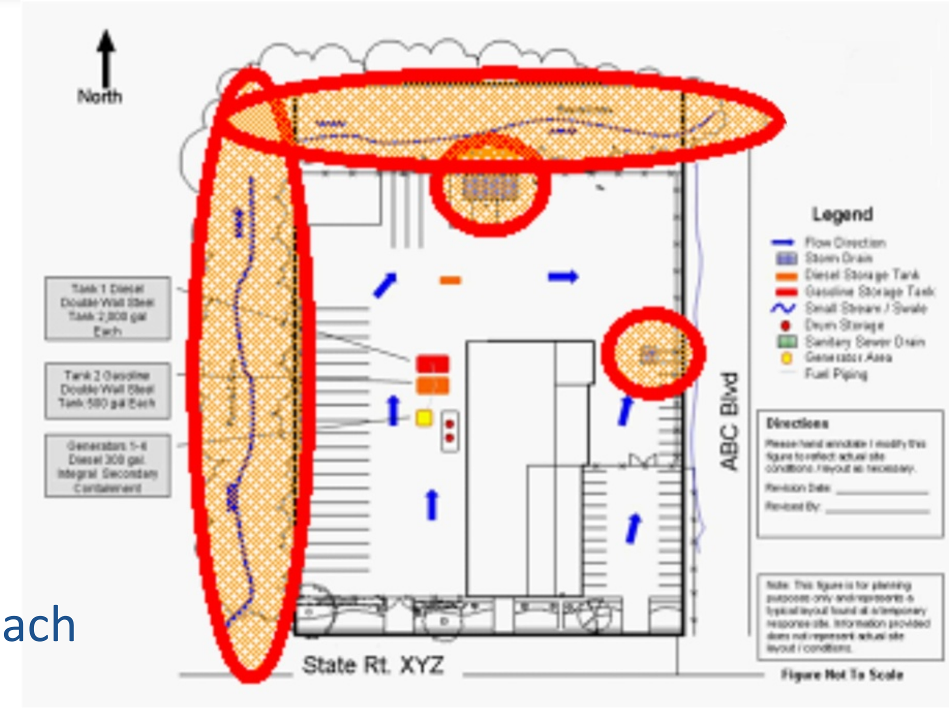
Phase 1: Evaluation

Assess your facility's potential pollutant sources (equipment, tanks, scrap and material storage and handling, etc.):

- ID flow direction and storm water outfall down gradient from each source
- ID best management practices (BMPs) that prevent pollution from each source
- ID any deficiencies and budget to correct them
- ID any non-storm water discharges that need to be permitted or stopped
- ID additional requirements for any water priority chemicals present



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Phase 2: Planning and Design

Step 1: Identify structural and non-structural BMPs, materials management and good housekeeping practices necessary to improve operations. The most effective BMP is to **hire good employees** and to provide them with **consistent training.**

Step 2: Identify ways to improve work methods and ways to reduce storm water pollution. The second-most effective BMP is to **use the proper equipment and materials** (e.g. equipment upgrades, detention basins, oil-water separators) to reduce storm water pollution leaving the site.

Step 3: Design a program for operation and maintenance, including **regularly scheduled inspections and testing**. Record keeping is essential to this program; an electronic database is almost a necessity for many types of sites. Inspection records must be kept for at least three years.

Step 4: Design a spill prevention and response program

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Phase 3: Implementation and Monitoring

Step 1: **Train employees** properly in accordance with a good employee training program that is carefully documented.

Step 2: Use the BMPs identified in the SWPPP. **Proper construction and installation** is important to ensure proper function. **Document** each item as it is being installed; pictures are generally preferable to supplement sketches. Correctly store all written operating procedures, repair manuals, spare parts, and receipts for immediate use and/or reference.

Step 3: Purchase **spill kits** and materials. Train all personnel about where materials are stored, when to use spill containment, emergency notification procedures, and the disposal of used spill containment materials.

Step 4: **Inspect and maintain** the site as described in the design phase. Inspection duties must be assigned to responsible individuals in order to ensure proper inspection schedules and record keeping. Update SWPPP.

Storm Water Plan Content & Updating

SWPPP Content Requirements:

- Pollution Prevention Team
- Potential Pollutant Sources
- Best Management Practices (BMPs)
  - Good Housekeeping
  - Material Management Practices
  - Spill Prevention and Response
  - Area Specific
- Employee Training
- Facility inspections, sampling, annual compliance evaluation
- Plan Amendments

When does the SWPPP have to be updated?

1. When there is a change in design/construction/ operation/maintenance that may have the potential for discharge of pollutants (i.e., all significant changes)
2. When inspections and monitoring determine the SWPPP is ineffective in minimizing pollutants (i.e., exceedances)

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Non-Structural BMPs

- Non-structural BMPs are practices that are relatively simple, fairly inexpensive, and applicable to a wide variety of industries or activities.
  - These are typically everyday types of activities undertaken by employees at the facility.
  - Many facilities may already have non-structural controls in place for other reasons.

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Structural BMPs

- Structural BMPs are necessary when nonstructural controls are not adequate to prevent contamination of storm water.
  - Structural controls are physical features that control and prevent storm water pollution, which range from preventive measures to treatment systems.

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Example BMPs at Sims Metal Management Facilities

At the Pollutant Source:

- Secondary containment for tanks and oil filled equipment (structural)
- Covering/Roofing Pollutant Sources (structural)
- Street Sweeping (non-structural)
- Minimizing fugitive litter/debris/materials (non-structural and structural)

Downstream of the Pollutant Source (all structural):

- Storm Water Conveyance System Improvements
- Storm Water Detention and Treatment
- Sediment Collection Systems

What needs to happen here?

...and here?...

...and here?

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Good Housekeeping BMPs

- Implement BMPs to reduce pollutants that would commingle with storm water
- Choose the right equipment and budget for routine maintenance
- Determine the level of service (LOS) for different areas and staff appropriately
- Street Sweeping LOS Example
  - 2x/day for high use areas
  - 1x/day for streets
  - 1x/week for parking areas

Example: Street Sweeping

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Other Good Housekeeping BMPs

- Dry sweep when possible
- Keep pollution (metal/floatables/sediment/oil sheen) from leaving the property when it rains
- Regularly dispose of waste in designated Dumpsters
- No washing spills into storm drains
- Routinely clean and sweep all impermeable surfaces and cover
- Minimize/control liquid, solid, and airborne discharges (dust)
- Implement spill clean-up procedures (SPCC)

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Preventative Maintenance BMPs

- Schedule preventive maintenance of process equipment and spill management devices
  - Routinely inspect, repair, and maintain storm water and equipment/container management devices
  - Test, adjust, and repair all exterior equipment in a timely manner
  - Dike drainage procedure

Spill Prevention and Response BMPs

- Stop the source if possible (Be Careful – THINK SAFETY FIRST)
- Immediately attempt to contain and prevent spill from leaving the property (via drain or surface flow)
- Report the spill to the Site Manager or other person of authority
- Site Manager or equivalent will
  - assess and direct action to stop the spill (if not already done)
  - Notify spill response personnel if necessary
  - Report spill to authorities if necessary

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Source Control Program

Each facility must have an effective source control program. The program must be incorporated into all contracts, inspections must be made and an educational program established.

- **Contractual Component**
  - All inbound materials must be drained of residual fluids
  - Used auto bodies are inspected prior to scrapping
  - Any residual oil or gasoline remains must be drained and appropriately containerized.

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Source Control Program

- **Inspection Component**
  - All shipments of scrap metal must be inspected upon arrival
- **Educational Component**
  - Educate our clients to minimize pollutants on materials shipped to our facility in provided roll-off bins.
  - Encourage suppliers of scrap and recyclable waste materials to drain residual fluids

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Annual Employee Training

- Employee training programs should provide all personnel with:
  - a thorough understanding of the SWPPP, including BMPs, processes and materials they are working with,
  - practices for preventing discharges, and
  - procedures for responding quickly and properly to spills and releases.
- Training is important because one mistake or misunderstanding has the potential to result in the discharge of pollutants.

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Loading/Unloading BMPs

- Perform loading and unloading in containment area
  - Avoid placing storm drains in loading/unloading areas.
  - Grade, berm or curb loading/unloading areas to prevent storm water run-on
  - Pave loading areas with concrete instead of asphalt.
  - Position roof down spouts to direct storm water away from loading/unloading
  - Cover using building overhangs
  - Design your loading dock to have a bladder seal or door skirt
- Ensure that spill kits and spill response equipment is located nearby
  - Use drip pans and/or spill kits underneath hose and pipe connections and other leak-prone areas.
  - Conduct cleanups of any spills immediately using a dry, absorbent material (e.g., kitty litter, sawdust, etc.).
- Train employees and contractors on proper handling techniques, loading and unloading procedures, and proper spill containment and cleanup.
  - A trained employee should be present during all loading/unloading with potential for spills.

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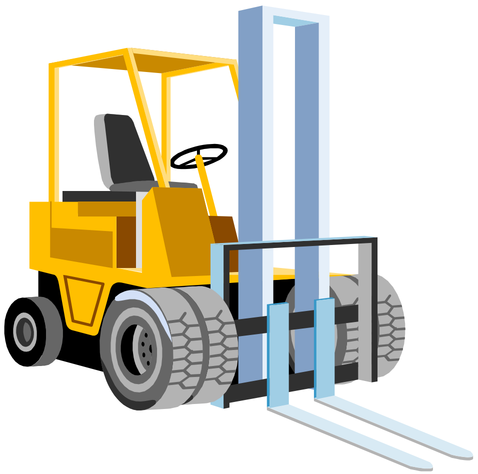
BMPs for Drum Transfer

- Drums should be sealed
- Show caution when moving with forklift (preventing dents and accidental leaks)
- Visually inspect the drum before and after
- To stop a spill from getting worse
  - Know where your spill response equipment is and how to use it!



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BMPs for ASTs

- Routinely inspect ASTs including:
  - Integrity
  - Tank foundations
  - Tank walls (shell)
  - Connections and piping for corrosion, leaks, or other physical damage that may weaken the system
- Safeguards should be installed such as:
  - Overflow protection devices
  - Protective guards around tanks and piping
  - Labeling of all valves and pumps
- ASTs should be located within impermeable secondary containment:
  - The capacity of the secondary containment should be the volume of the largest tank within the secondary containment plus additional capacity to accommodate a 25-year, 24-hour storm event (5 to 7 inches, dependant on region)

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Containment Area Drainage

All containment areas must have a valve or other means (globe, gate or equivalent) to control the discharge.

- Ensure that the accumulated storm water is clean prior to discharge and maintain records of every discharge
- If contaminated, the facility must have the accumulated storm water collected and hauled off-site by a licensed waste disposal service for proper disposal.

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Oil/Water Separators

Oil/water separators are devices that skim the oil from the surface of storm water runoff.

✓These devices need to be maintained regularly and properly to prevent flushing the captured oil into the receiving waters during a rain event.

✓If not properly maintained, they are a source of pollutants.

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Sumps

- Key features for effective sumps:
  - Placed so that the rest of the basin or containment area drain into them, and often contain pumps to transfer the contained liquid to other areas.
  - When designing and installing sumps, consider pump location, function and system alarms.
  - Made of impenetrable materials with a smooth surface so liquids funnel easily to the pump.
  - Pumps should be selected based on the maximum expected discharge rate, the viscosity (thickness) of material, and the distance the material will be pumped. Submersible pumps may be required if they will be in the sump area.
  - If the sump is located in a truck well, the sump pump should have a manually operated switch. This will prevent releases to the receiving waters if a spill has occurred.

Grading and Diversion Dikes

- Grading is often used in conjunction with other practices to:
  - reduce runoff velocity,
  - divert runoff away from industrial activities,
  - provide infiltration of storm water, and
  - direct contaminated runoff to treatment facilities or containment areas.
- Diversion dikes are built on slopes just uphill from an industrial area together with some sort of a conveyance, such as a grass lined swale. The storm water conveyance directs the water away from the dike so that water will not pool and seep through the dike.

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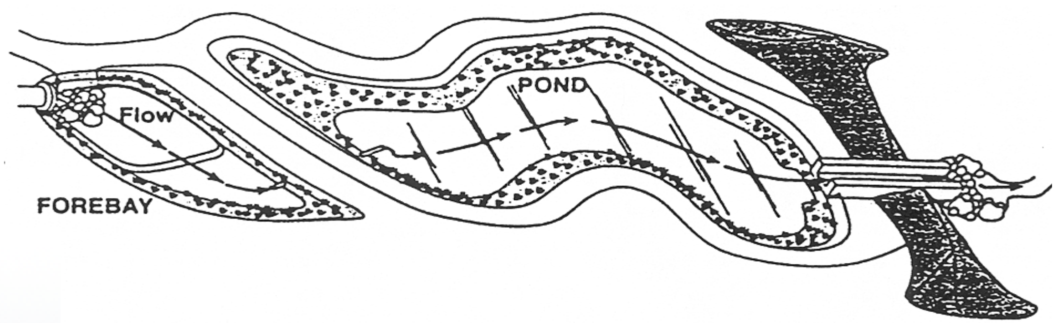
Detention Ponds

- A wet detention basin is a very desirable method to satisfy both storm water detention and storm water quality requirements.
  - ✓ Reduces peak flow discharge
  - ✓ Removes suspended sediments, trash and debris, oil, grease, and other pollutants
  - ✓ Allows physical settling of sediments and pollutants, chemical mixing and interaction of dissolved nutrients and metals, and biological uptake



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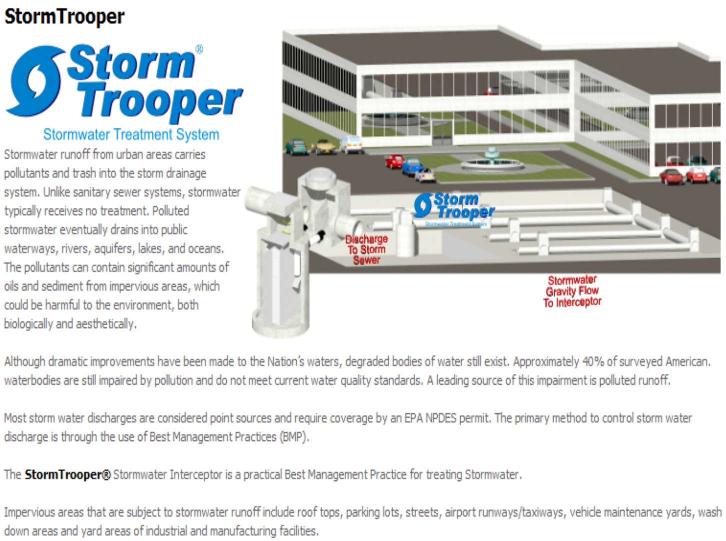
Underground Detention Systems

When there is limited space for detention ponds, an underground detention system like the StormTrooper™ can be used like a detention pond to collect and detain:

- ✓floatable debris
- ✓bed load particulate
- ✓free oil and grease
- ✓petroleum hydrocarbons
- ✓settleable sediments
- ✓heavy metals
- ✓nitrogen, phosphorus and organic compounds that may absorb or adhere to the solids in storm water.



StormTrooper

Storm Trooper®

Stormwater Treatment System

Stormwater runoff from urban areas carries pollutants and trash into the storm drainage system. Unlike sanitary sewer systems, stormwater typically receives no treatment. Polluted stormwater eventually drains into public waterways, rivers, aquifers, lakes, and oceans. The pollutants can contain significant amounts of oils and sediment from impervious areas, which could be harmful to the environment, both biologically and aesthetically.

Although dramatic improvements have been made to the Nation's waters, degraded bodies of water still exist. Approximately 40% of surveyed American. waterbodies are still impaired by pollution and do not meet current water quality standards. A leading source of this impairment is polluted runoff.

Most storm water discharges are considered point sources and require coverage by an EPA NPDES permit. The primary method to control storm water discharge is through the use of Best Management Practices (BMP).

The **StormTrooper®** Stormwater Interceptor is a practical Best Management Practice for treating Stormwater.

Impervious areas that are subject to stormwater runoff include roof tops, parking lots, streets, airport runways/taxiways, vehicle maintenance yards, wash down areas and yard areas of industrial and manufacturing facilities.

Booming Systems in Conveyances

You may utilize erosion control type booming to contain pollutants in lieu of permanent dikes and curbing, but they require maintenance

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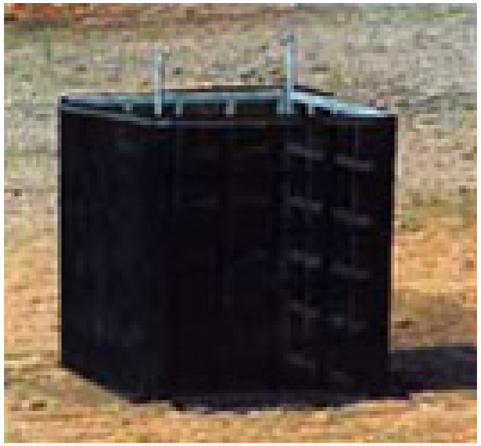
Inlet Protection Systems

- Filtration systems are BMPs that use media to remove particulates from runoff
  - Catch basin inserts
  - curb inlet filters
- Consider flow rates of drainage area for inlets (filters must be able to treat at least the first ¼ inch of runoff with a bypass for high-flow events
  - Otherwise, they will clog and may flood areas



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Roofing Potential Sources

- **Cover roll-off bins storing trash and recycling material**
  - All trash and recycling bins should be covered to prevent contact with storm water runoff.
  - Scrap metal may be contaminated with oil, grease, debris, metal fines or other potential pollutants.
  - Storm water may become contaminated, if runoff is allowed to flow freely through the bins.

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Why sample storm water?

Objectives:

- Demonstrate compliance with your permit and implementation of the SWPPP.
- Measure the effectiveness of the Best Management Practices in removing pollutants from Sims Metal Management facilities.
- Required by permit!

Storm Water Sampling

- The collection of samples for the reported analyses should be *supervised* by a person experienced in performing sampling of industrial wastewater. Ask the Sims Metal Management corporate environmental department to go over your sampling program.
- Assure contract laboratory is certified/accredited with the state for the analysis requested
- Work with your laboratory to ensure you get a sampling kit compliant with analytical methods for:
    - sample containers (e.g., glass for oil and grease)
    - sample preservation (e.g., acid to stop degradation of sample for oil & grease)
    - holding times
    - the collection of duplicate samples, etc.

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Obtain Representative Samples

- To obtain representative samples, consider:
  - The time you take samples should be representative of your normal operation, with all processes in normal operation, and with any BMPs/treatment systems operating properly with no system upsets.
  - Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit, or at any site adequate for the collection of a representative sample.

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Type of Sampling Required

- Grab sampling is required for Sims Metal Management facilities with general permits.
  - A grab sample is a one-time sample process (meaning you will fill the entire sample bottle at one time).
- The samples will be collected by filling the sample container just below the water surface in the center of the flow channel.

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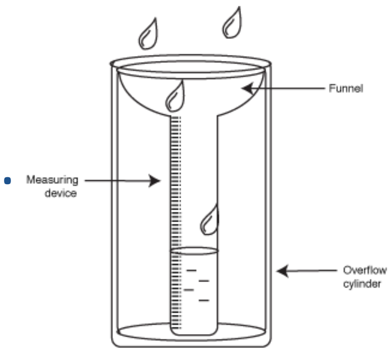
When to Sample?

- Grab samples shall be taken within the first half-hour of the storm event.
- For the sample to be acceptable, the following must occur:
  - It must have been at least three days since the last significant rainfall.
  - The amount of the rain fall must be at least 0.1 inch (see rain gauge or call weather station).



- Remember that each sample must be of sufficient volume for all of the laboratory analysis to be performed (make sure all bottles are full).

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Field Parameters

- Some facilities utilize field testing devices for determining field parameters, such as pH
- Read the instructions on your testing devices to ensure that the devices are properly calibrated during each use.
- Keep calibration reports
- Maintain calibration records for three years

Sampling and Preparation Procedures

Step 1: Collect Samples.

Step 2: Add any required preservative (laboratory will notify if applicable).

Step 3: Complete bottle label(s).

Step 4: Affix labels to bottles.

Step 5: Complete a chain-of-custody form (see instructions on form).

Step 6: Place bottles along with several Ziploc bags of ice inside cooler.

Step 7: Insert completed chain-of-custody form into appropriate cooler and tape closed.

Step 8: Send via overnight delivery or hand deliver to laboratory **ASAP.** If sampling on a Friday, contact laboratory to ensure they are accepting samples on Saturday.

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Chain of Custody Forms

- The chain of custody is the legal document that proves you did the sampling, and all communication with the lab should be on this form- don’t rely on word of mouth or e-mailing, that type of communication often doesn’t make it to the lab bench.
- Fill out all blocks as directed:
  - Sampling date, time and exact location
  - Names of individual(s) performing sampling
  - Analytical methods/techniques required
- Keep track of sample numbers on your SWPPP map and use a numbering system that includes the outfall number. If there was something unusual about the sample, include that in the sampling name.

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Analysis Methods

- The chain of custody will ask for what method of analysis you require.
  - Work with your laboratory to complete this section.
  - You can find the test methods for most parameters promulgated in 40 CFR Part 136 if you want to complete yourself

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Analytical Monitoring Program

Typical Sims Metal Management facility analytical monitoring requirements and parameter benchmark values are presented in this table. Most Sims Metal Management facilities have annual monitoring requirements.

- Look at your permit and work with your local laboratory to obtain sampling kits that meet your permit requirements.

Pollutants of Concern	Parameter Benchmark Values
Total Aluminum	0.75 mg/L
Total Copper	0.0756 mg/L
Total Iron	1.0 mg/L
Total Lead	0.519 mg/L
Total Zinc	0.684 mg/L

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Exceedance Reporting

- Exceed a parameter benchmark value?
  - The benchmark concentrations are not effluent limitations. Therefore, a benchmark exceedance is not a permit violation.
  - The facility shall investigate the cause and/or source of the elevated pollutant levels, review the SWPPP, and determine and document a corrective action plan to address the benchmark exceedance. The facility shall commence with the above process within 30 calendar days of the exceedance.
- Revise your SWPPP after exceedance!
  - Document the date that corrective actions are initiated and are completed or expected to be completed. This documentation must be included in an annual report and a copy retained onsite with the SWPPP.
- Send another letter to the state☹
  - A brief summary of the proposed SWPPP modifications should be submitted to the state, along with a timetable for implementation.

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Visual Monitoring Program

Many states require visual monitoring of storm water (additionally or in lieu of analytical sampling):

- The examinations are typically required once during daylight hours during each of the following periods: January through March, April through June, July through September, and October through December.
- Examinations must be made of samples collected during the first 30 minutes (or as soon thereafter as practical, but not to exceed one hour) of when runoff begins discharging.
- The examinations must document observations of color, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other indicators of storm water pollution.

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Evaluation of Non-Storm Water Discharge

- Annual requirement to inspect facility for non-storm water discharge.
- Did you realize that sink in the maintenance shop was not supposed to discharge out the wall of the shop??
- List of typical allowable discharges (bottom line= no contaminants discharged):
  - firefighting activities
  - potable water
  - uncontaminated air conditioning or compressor condensate
  - landscape watering
  - pavement wash waters where no detergents or spills
  - routine external building wash down which does not use detergents
  - uncontaminated groundwater
  - foundation or footing drains
  - incidental windblown mist from cooling towers

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Keep Up With Your Paperwork!!

- SWPP Plan Inventory
- Inspection Forms
- Quarterly Facility Inspections
- Quarterly Visual Examination of Discharge
- Annual Analytical Monitoring
- Annual Compliance Evaluation

Forms must be retained for 3 years!

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Storm Water Pollution Prevention Training Record Form

Review training records. Schedule next training and consider additional training needs for new hires.

ANNUAL TRAINING AND PLAN REVIEW TRAINING TOPIC: ____
Procedure: Supervisor will review the Plan with all employees during the month of ___________________
PERSONS RECEIVING TRAINING DATE OF TRAINING PERSON CONDUCTING TRAINING

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Review Pollution Prevention Team Rosters and Revise

POLLUTION PREVENTION TEAM MEMBER ROSTER	Completed by: ____ Title: ____ Date: ____

Members:	Title:	Office Phone	Responsibilities

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Review Inventory Tables and Revise as Needed

Table B-3 Facility Potential Pollutant Sources Inventory											
Tank #	Container Type	Tank/Pipe Material	Double-Walled Tank/Piping	Year Installed	Good Engineering Practice	Contents/ Capacity (gal)	Type of Failure	Release Volume	Containment Capacity (gal)	Flow Direction /Receiver	Containment /Diversion Structure

	Potential Pollutant Sources Inventory
Table B-1	Aboveground Storage Tanks
Table B-2	Mobile/Portable Tanks
Table B-3	Non-Storm Water Discharges
Table B-4	Miscellaneous Outdoor Storage
Table B-5	Material Handling Activities

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Review List of Spills and Leaks
Ensure New BMPS Work or Budget For Additional BMPS

LIST OF SIGNIFICANT SPILLS AND LEAKS	Completed by: ______ Title: ______

Instructions: Record below all significant spills and significant leaks of toxic or hazardous pollutants that have occurred at the facility in the three years prior to coverage of the permit .

Definitions: Significant spills include, but are not limited to, releases of <u>oil</u> or <u>hazardous substances</u> in excess of reportable quantities.

			Description	Response Procedure		
Date (mo/day/year)	Spill or Leak (S/L)	Location (as indicated on site map)	Type of Material	Amount of Material Recovered	Material Exposed to Storm Water (Y/N)	Preventive Measures Taken (Add additional sheets if necessary)

Environmental Incident Report

Review All Incident Reports and Determine Whether New BMPs are Needed.

•REPORTED BY:	•DATE OF INCIDENT:

•LOCATION:

•DESCRIBE THE INCIDENT:

•WHAT WAS THE ENVIRONMENTAL EFFECT?

•WHAT ARE THE POSSIBLE LIABILITIES?

•NOTIFICATION ACTION

•COMPANY OR •REGULATORY AGENCY	•PERSON CONTACTED	•RESPONSIBILITY

•WHAT ACTION WAS TAKEN TO CORRECT THE PROBLEM?

•WHAT IS THE PLAN TO PREVENT RECURRENCE?

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Inspect for New Non-Storm Water Discharges and Ensure that they are Permitted

NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION	Completed by: Title: Date:

Outfall No.	Date of Evaluation	Method Used to Test or Evaluate Discharge	If Evaluation is Impossible Give Reason	Is Non-Storm Water Being Discharged? (Yes/No)	List Likely Sources of Non-Storm Water Discharges	Persons Who Conducted the Test or Evaluation

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Make a List of New BMPs Identified During the Annual Compliance Evaluation and Determine Implementation Schedule

Instructions:	**Develop a schedule for implementing each newly selected BMP. Briefly describe each BMP, the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.**			
BMPs	**Description of Action(s) Required for Implementation**	**Scheduled Completion Date(s) for Req'd Action**	**Person Responsible for Action(s)**	**Notes**
Good Housekeeping				
Preventive Maintenance				
Inspections				
Spill Prevention and Response				

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Facility Inspection Checklist and Tracking Form (Typical Frequency: Quarterly)

Review all the quarterly inspection checklists to ensure compliance and determine needed BMPs.

Inspector:______________________________________ Date:________________________

Weather:_______________________________________

Area	Status OK/ Needs Improvement	Corrective Action(s) Recommended If the box indicating "needs improvement" is marked, list the corrective action(s) recommended	Responsible Department/ Person	Date Implemented
Diesel Tank and Unloading Area				
Customer Loading/Unloading Area				
Drum Storage Areas				
Shredder Area				

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Typical Storm Water Monitoring Parameters

- Chemical Oxygen Demand (COD)
- Total Suspended Solids (TSS)
- Oil & Grease
- Total Recoverable Aluminum
- Total Recoverable Copper
- Total Recoverable Iron
- Total Recoverable Lead
- Total Recoverable Zinc

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Visual Examination for Storm Water Quality

Review all the quarterly visual examinations and determine if new BMPs needed.

- Floating Solids ☐ Yes ☐ No
  ____
- Suspended Solids ☐ Yes ☐ No
  ____
- Settled Solids ☐ Yes ☐ No
  ____
- Foam ☐ Yes ☐ No
  ____
- Oil Sheen ☐ Yes ☐ No
  ____
- Other ☐ Yes ☐ No
- How long since the last rain event greater than 0.1 inch?______(in hours); must be at least 72 hours
- Start Time of Rainfall Event:___
- Stop Time of Rainfall Event:___
- Duration of Storm (in hours):__
- Magnitude of Rainfall:______(in inches)
- Is the amount of rainfall over 0.1 inches? __________Yes __________No
- Estimate the total volume (in gallons) of the discharge sampled: __________

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Secondary Containment Drainage Log

Review logs and ensure that procedures are being properly followed.

Instructions: 40 CFR 112 requires observation, recording and prompt drainage of impounded rainwater from secondary containment structures. The rainwater shall not be discharged without treatment if it has product or a visible sheen. Notify management immediately if any releases are identified.

Frequency: As soon as possible after significant rainfall event. Remember that the tank dike needs to remain free of accumulated rainwater to have enough capacity in the event of a spill. When possible, the drainage of the diked area should occur contiguous to the storm event to minimize impact to receiving waters.

Site / Date	Oil Present (Y / N)	Treatment Employed (Y / N)	Drain Valve Opened (Time)	Drain Valve Closed (Time)	Name	Comments

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Annual Compliance Evaluation – SWPP Plan Review

Permit Year ________________

Inspection Date _____________

Facility Modifications

a. Have new buildings or yard areas been constructed? ☐ No ☐ Yes

b. Has the storm water drainage system been modified? ☐ No ☐ Yes

A "yes" answer to any of the above questions requires the site map and SWPPP be modified to incorporate the changes.

Check when changes complete	Map	Plan
	☐ ____________ date	☐ ____________ date
	☐ ____________ initials	☐ ____________ initials

The non-storm water discharges assessment and certification has been verified:
☐ ______ date ______ initials

Annual review of forms completed:
Check when forms have been updated and moved to next Appendix:
☐______ date ______ initials

Check when response complete and attach documentation:
☐ ______ date ______ initials

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Annual Compliance Evaluation - continued

Potential Pollutant Sources

Potential pollutants have been verified?	☐ No change	☐ Additions/deletions
Check when changes made to plan	☐ ____________ date	__________ initials

Verification of Pollution Controls	Effectiveness		
	Excellent	Good	Inadequate
Housekeeping (inspect yard): outside storage areas	☐	☐	☐
Preventive maintenance (inspect records)	☐	☐	☐
Drainage system maintenance (inspect devices and records): catch basins, filters	☐	☐	☐
Hazardous chemical containment	☐	☐	☐
Debris and sediment control	☐	☐	☐
Air pollution control equipment			
Waste chemical disposal	☐	☐	☐
Employee training	☐	☐	☐
Record keeping	☐	☐	☐
Other _________________________________	☐	☐	☐

Annual Site Compliance Certification Form

The “jailable” official must annually certify the following:

- Areas visually inspected for evidence of, or the potential for, pollutants entering the drainage system
- Measures to reduce pollutant loadings were evaluated to determine adequacy
- Based on the results of the inspection, the SWPPP was updated and any additional controls were implemented or an implementation schedule prepared
- The facility is currently in compliance with the SWPPP and the General Permit.

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Quiz

1. The primary purpose of a SWPPP is to...
   a. Identify how the amount of hazardous waste generated at your facility can be reduced.
   b. Identify sources of storm water pollution and develop BMPs to control those sources.
   c. Identify where all the storm drains are at a facility.
   d. None of the above
2. Non-structural BMPs include...
   a. Good housekeeping
   b. Spill prevention and control
   c. Preventative maintenance
   d. All of the above

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Quiz

3. Which of these is <u>not</u> a pollution prevention technique?
   a. Hose down your driveway.
   b. Dispose of used motor oil at a recycler, not in the storm drain.

4. Which of the following procedures is generally not considered a source of storm water pollution?
   a. Propane tanks
   b. Open scrap metal dumpsters
   c. Washing vehicles and equipment
   d. Spilled materials and waste

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Quiz

5. A Best Management Practice (BMP) is a procedure developed to prevent or reduce the amount of pollution discharged to storm water runoff.

   True

   False

6. It is okay to dump mop water onto the ground or into a storm drain.

   True

   False

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Quiz

7. It is only the responsibility of supervisory personnel to implement BMPs.

   True

   False

8. Storm water runoff drains directly, without treatment to lakes, rivers and oceans.

   True

   False

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Quiz

9. Industrial facilities are the only source of storm water pollution.

   True

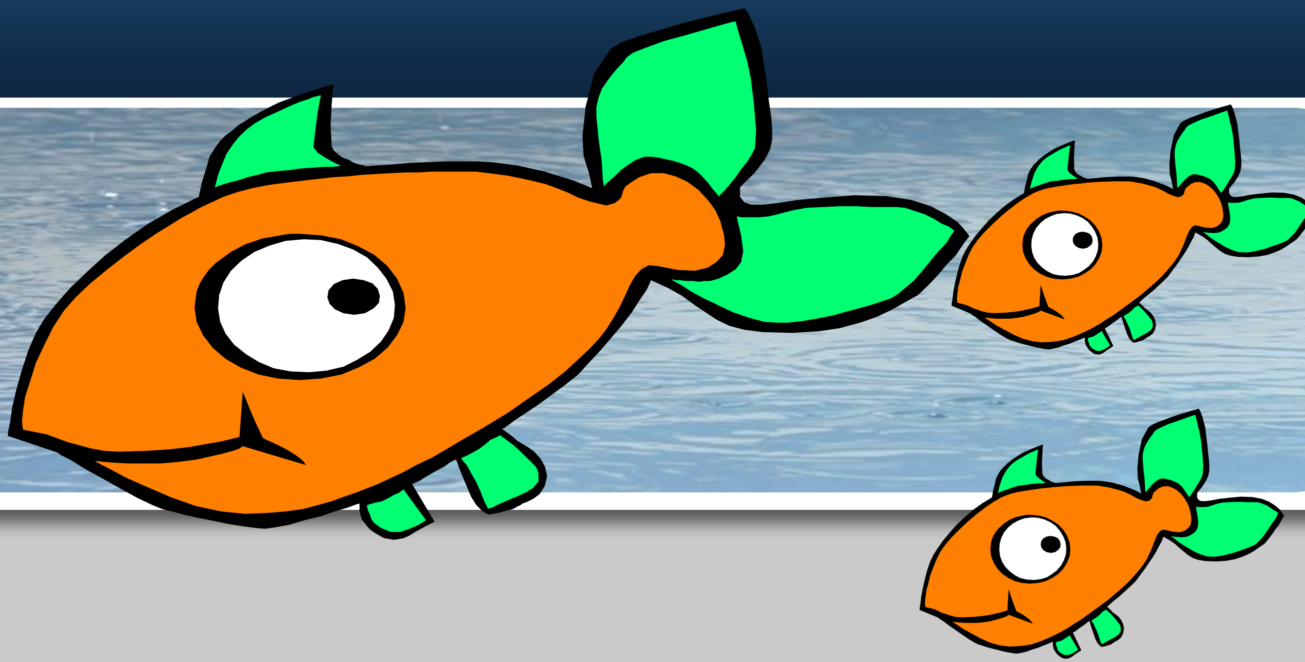
   False

10. Oil and grease leaks from hydraulic equipment can be a common source of storm water pollution.

    True

    False

ANY QUESTIONS OR CORRECTIONS ?



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CLEAN WATER ACT COMPLIANCE PLANS

LONOKE YARD
301 FRONTAGE ROAD
LONOKE, ARKANSAS 72086

STORM WATER POLLUTION PREVENTION PLAN, MAY 2012
Appendix A Facility Diagrams
Appendix B Facility Oil Storage and Potential Pollutant Sources Inventory
Appendix C Example Forms
Appendix D Storm Water Permit
Appendix E Best Management Practices Manual
Appendix F Training Presentations
Appendix G Records

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