

## **Sector AC**

# **Manufacturers of Electronic and Electrical Equipment and Components, Photographic and Optical Goods Fact Sheet**

Fact Sheets include a general discussion of the issues and pollutants specific to each industrial sector, including a summary of the data used to formulate the Multi-Sector General Permit. Fact Sheet topics include:

- Discharges Covered Under the Sector;
- Industry Profile;
- Associated Storm Water Pollutants;
- Pollution Control Options;
- Special Conditions;
- Storm Water Pollution Plan Requirements;
- Monitoring and Reporting Requirements; and
- Numeric Effluent Limitations, if any.

The Fact Sheet is not to be used as the basis for permit compliance. Sector-specific Permit Language, immediately following this Fact Sheet, provides specific detail for permit compliance.

components manufacturers includes manufacturers of electricity distribution equipment such as transformers and switch-gear, electrical industrial equipment such as motors and generators, household appliances, electric lighting and wiring equipment such as light bulbs and lighting fixtures, and audio and video equipment including phonograph records and audio tapes and disks. Also included are manufacturers of communication equipment including telephone and telegraph equipment, radio and television equipment, electronic components such as printed circuit boards and semiconductors and related devices, and miscellaneous electrical items such as batteries and electrical equipment for automobiles.

The group of analyzing, and controlling instruments, photographic, medical and optical goods, and watches and clocks manufacturers includes facilities which manufacture search, detection, navigation, or guidance systems such as radar and sonar equipment, measurement and control instruments and laboratory apparatus, surgical, medical and dental instruments and supplies, photographic equipment and supplies, and watches and clocks.

The computer and office equipment manufacturers group includes manufacturers of computers, computer storage devices, and peripheral equipment for computers such as printers and plotters. Manufacturers of miscellaneous office machines are also included in this group.

The SIC codes of the facilities covered by this section are in category (xi) of the definition of storm water discharges associated with industrial activity. Storm water discharges from facilities in this category are only regulated where precipitation and storm water runoff come into contact with areas associated with industrial activities, and significant materials. Significant materials include, but are not limited to, raw materials, waste products, fuels, finished products, intermediate products, by-products, and other materials associated with industrial activities.

When an industrial facility, described by the above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution

prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility (co-located industrial activities). The operator of the facility shall determine which other monitoring and pollution prevention plan section(s) of this permit (if any) are applicable to the facility.

## 2. Pollutants Found in Storm Water Discharges

*a. Sources of Pollutants.* As noted in the preamble to the final storm water application regulations of November 16, 1990, most of the actual manufacturing and processing activity at these types of facilities normally occurs indoors (55 FR 48008).

Additional information concerning these manufacturing processes and the industrial sector itself can be found in the following documents: "Development Document for Effluent Limitations Guidelines and Standards for the Electrical and Electronics Components Point Source Category, Phase I," EPA 440/1-83/075; "Development Document for Effluent Limitations Guidelines and Standards for the Electrical and Electronic Components Point Source Category, Phase II," EPA 440/1-84/075; "Development Document for Existing Source Pretreatment Standards for the Electroplating Point Source Category," EPA 440/1-79/003; and "Development Document for Effluent Limitations Guidelines and Standards for the Metal Finishing Point Source Category," EPA 440/1-83/091.

The types of activities at these facilities where exposure to storm water may occur consist primarily of loading/unloading activities, and the storage and handling of raw materials, by-products, final products or waste products. A wide variety of materials are used at these facilities including metals, acids used for chemical etching, alkaline solutions, solvents, various oils and fuels and miscellaneous chemicals. Tanks or drums of these materials may be exposed to storm water during loading/un-loading operations, or through outdoor storage or handling at some facilities.

Liquid wastes which may be exposed at least temporarily include spent solvents and acids, miscellaneous chemicals and oily wastes. These wastes may be contaminated with a variety of heavy metals and chlorinated hydrocarbons. Used equipment, scrap metal and wire, soiled rags and sanding materials may also be exposed to storm water and constitute a potential source of pollutants. In addition, some facilities reported that dumpsters containing non-

### *AC. Storm Water Discharges Associated With Industrial Activity From Facilities That Manufacture Electronic and Electrical Equipment and Components, Photographic and Optical Goods*

#### 1. Discharges Covered Under This Section

This sector covers storm water discharges associated with industrial activity from electronic and electrical equipment manufacturing facilities (SIC major group 36); measuring, analyzing, and controlling instruments, photographic, medical and optical goods, and watches and clocks manufacturing facilities (SIC major group 38); and computer and office equipment manufacturing facilities (SIC 357).

More specifically, the group of electronic and electrical equipment and

hazardous wastes or manufacturing debris may be exposed to storm water.

Table AC-1 lists potential pollutant sources from activities that commonly take place at facilities which

manufacture electronic and electrical equipment and components, photographic and optical goods.

TABLE AC-1.—COMMON POLLUTANT SOURCES

Activity	Pollutant source	Pollutants
Outdoor Material Loading/Unloading .....	Wooden pallets, spills/leaks from material handling equipment, raw materials, finished products, solvents.	TSS, oil and grease, organics.
Outdoor Material and Equipment Storage .....	Sulfuric acid, alkaline solutions, solvents miscellaneous chemicals, oily wastes, lead, silver, copper, zinc, spent solvents and acids, scrap metal and wire, oily rags.	Organics, oil and grease, acids, alkalinity, heavy metals.

b. *Storm Water Sampling Results.* Based on the similarities of the facilities included in this sector in terms of industrial activities and significant materials, EPA believes it is appropriate to discuss the potential pollutants at electronic and electric equipment and photographic and optical goods manufacturing facilities as a whole and not subdivide this sector. Therefore, Table AC-2 lists data for selected parameters from facilities in the electronic and electric equipment and photographic and optical goods manufacturing sector. This data includes the eight pollutants which all facilities were required to monitor for under Form 2F, as well as the pollutants that EPA has determined may merit further monitoring.

TABLE AC-2.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY ELECTRONIC AND ELECTRICAL EQUIPMENT AND PHOTOGRAPHIC AND OPTICAL GOODS MANUFACTURING FACILITIES SUBMITTING PART II SAMPLING DATA<sup>i</sup> (mg/L)

Pollutant of sample type	No. of facilities		No. of samples		Mean		Minimum		Maximum		Median		95th percentile		99th percentile	
	Grab	Comp <sup>ii</sup>	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD <sub>5</sub> .....	25	22	64	56	8.8	7.48	0.0	0.0	54.0	139.0	5.5	5.10	27.2	17.92	48.9	30.08
COD .....	25	22	65	56	59.2	36.3	0.0	0.0	450.0	220.0	46.0	24.0	173.3	122.2	304.9	235.5
Nitrate + Nitrite Nitrogen ..	25	22	64	57	0.83	0.66	0.00	0.0	6.97	2.54	0.51	0.51	2.63	1.56	4.99	2.40
Total Kjeldahl Nitrogen ....	25	22	64	58	1.45	1.34	0.00	0.0	10.20	13.6	1.05	1.01	4.26	4.22	7.41	7.68
Oil & Grease .....	25	N/A	69	N/A	0.6	N/A	0.0	N/A	9.0	N/A	0.0	N/A	3.5	N/A	8.3	N/A
pH .....	25	N/A	69	N/A	N/A	N/A	5.0	N/A	8.8	N/A	7.5	N/A	9.0	N/A	9.7	N/A
Total Phosphorus .....	24	21	64	57	1.50	1.02	0.00	0.0	80.10	44.4	0.13	0.16	1.86	1.72	4.93	4.40
Total Suspended Solids ...	24	22	63	56	89	67	0	0	610	716	29	14	424	262	1209	722
Aluminum, Total .....	4	4	4	4	3.05	0.60	0.00	0.00	9.40	1.00	1.40	0.70	15.37	1.34	29.78	1.75
Zinc, Total .....	16	14	51	48	0.163	0.152	0.000	0.000	1.101	1.200	0.09	0.09	0.563	0.500	1.060	0.940

<sup>i</sup> Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0.  
<sup>ii</sup> Composite samples.

3. Options for Controlling Pollutants

In evaluating options for controlling pollutants in storm water discharges, EPA must achieve compliance with the technology-based standards of the Clean Water Act [Best Available Technology (BAT) and Best Conventional Technology]. The Agency does not believe that it is appropriate to establish specific numeric effluent limitations or a specific design or performance standard in this section for storm water discharges associated with industrial activity from facilities which manufacture electronic and electrical equipment and components, and photographic and optical goods to meet BAT/BCT standards of the Clean Water Act. Instead, this section establishes requirements for the development and implementation of site-specific storm water pollution prevention plans consisting of a set of Best Management Practices (BMPs) that are sufficiently flexible to address different sources of pollutants at different sites.

Certain BMPs are implemented to prevent and/or minimize exposure of

pollutants from industrial activities to storm water discharges. EPA believes the most effective BMPs for reducing pollutants in storm water discharges are exposure minimization practices. Exposure minimization practices lessen the potential for storm water to come into contact with pollutants. Good housekeeping practices ensure that facilities are sensitive to routine and nonroutine activities which may increase pollutants in storm water discharges. The BMPs which address good housekeeping and exposure minimization are easily implemented, inexpensive, and require little, if any, maintenance. BMP expenses may include construction of roofs for storage areas or other forms of permanent cover and the installation of berms/dikes. Other BMPs such as detention/retention ponds and filtering devices may be needed at these facilities because of the contaminant level in the storm water discharges. The types of BMPs implemented will depend on the type of discharge, types and concentrations of contaminants, and the volume of the flow.

The selection of the most effective BMPs will be based on site-specific considerations such as: facility size, climate, geographic location, geology/hydrology and the environmental setting of each facility, and volume and type of discharge generated. Each facility will be unique in that the source, type, and volume of contaminated storm water discharges will differ. In addition, the fate and transport of pollutants in these discharges will vary. EPA believes that the management practices discussed herein are well suited mechanisms to prevent or control the contamination of storm water discharges associated with manufacturers of electronic and electrical equipment and components, and photographic and optical goods.

Part 1 group application data indicated that the most widely implemented BMPs are spill prevention and response techniques (used by approximately 68 percent of the sampling facilities) and waste minimization practices (employed by approximately 54 percent of the sampling facilities). However, less than

30 percent of the sampling subgroup reported that they use covering; approximately 3 percent have roofs over their raw materials; and less than 3

percent store raw materials indoors.<sup>103</sup> Because BMPs described in part 1 data are generally limited, Table AC-3 is provided to identify BMPs associated

with activities that routinely occur at manufacturers of electronic and electrical equipment and components, and photographic and optical goods.

TABLE AC-3.—GENERAL STORM WATER BMPs FOR MANUFACTURERS OF ELECTRONIC AND ELECTRICAL EQUIPMENT AND COMPONENTS, PHOTOGRAPHIC AND OPTICAL GOODS

Activity	Best management practices (BMPs)
Outdoor Unloading and Loading .....	Confine loading/unloading activities to a designated area. Consider performing loading/unloading activities indoors or in a covered area. Consider covering loading/unloading area with permanent cover (e.g., roofs) or temporary cover (e.g., tarps). Close storm drains during loading/unloading activities in surrounding areas. Avoid loading/unloading materials in the rain. Inspect the unloading/loading areas to detect problems before they occur. Inspect all containers prior to loading/unloading of any raw or spent materials. Consider berming, curbing, or diking loading/unloading areas. Dead-end sump where spilled materials could be directed. Drip pans under hoses. Use dry clean-up methods instead of washing the areas down. Train employees on proper loading/unloading techniques and spill prevention and response.
Outdoor Material Storage (including waste, and particulate emission management).	Confine storage of materials, parts, and equipment to designated areas.  Consider secondary containment using curbing, berming, or diking all liquid storage areas. Train employees in spill prevention and response techniques. Train employees on proper waste control and disposal. Consider covering tanks. Ensure that all containers are closed (e.g., valves shut, lids sealed, caps closed). Wash and rinse containers indoors before storing them outdoors If outside or in covered areas, minimize runoff of storm water by grading the land to divert flow away from containers. Leak detection and container integrity testing. Direct runoff to onsite retention pond. Inventory all raw and spent materials. Clean around vents and stacks. Place tubs around vents and stacks to collect particulate. Inspect air emission control systems (e.g., baghouses) regularly, and repair or replace when necessary. Store wastes in covered, leak proof containers (e.g., dumpsters, drums). Consider shipping all wastes to offsite landfills or treatment facilities. Ensure hazardous waste disposal practices are performed in accordance with Federal, State, and local requirements.

Sources: NPDES Storm Water Group Applications—Part 1. Received by EPA, March 18, 1991, through December 31, 1992. EPA, Office of Water, September 1992. "Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices." EPA 832-R-92-006.

4. Special Conditions

There are no additional requirements under this section other than those stated in Part VI.B of this fact sheet.

5. Storm Water Pollution Prevention Plan Requirements

There are no additional requirements beyond those described in Part VI.C. of this fact sheet.

6. Numeric Effluent Limitations

No numeric effluent limitations are included for facilities in this sector, beyond those described in Part V.B. of today's permit.

7. Monitoring and Reporting Requirements

a. *Monitoring Requirements.* The regulatory modifications at 40 CFR 122.44 (i)(2) established on April 2, 1992, grant permit writers the flexibility to reduce monitoring requirements in storm water discharge permits. EPA has determined that the potential for storm water discharges to contain pollutants above benchmark levels, because of the industrial activities and materials exposed to precipitation, does not support sampling at facilities that manufacture electronic and electrical equipment and components, photographic, and optical goods. Under the Storm Water Regulations at 40 CFR 122.26(b)(14), EPA defined "storm water

discharge associated with industrial activity". The focus of today's permit is to address the presence of pollutants that are associated with the industrial activities identified in this definition and that might be found in storm water discharges. Under the methodology for determining analytical monitoring requirements, described in section VI.E.1 of this fact sheet, aluminum and zinc are above the benchmark concentrations for the electronic, electric, photographic and optical goods sector. After a review of the nature of industrial activities and the significant materials exposed to storm water described by facilities in this sector, EPA has determined that the higher concentrations of aluminum and zinc

<sup>103</sup> These percentages were based on the information reported in the Part 1 group applications. However, some facilities which utilize

these BMPs as part of their daily activities may not recognize these practices as BMPs and as a result did not report this information in their applications.

are not likely to be caused by the industrial activity, but may be primarily due to non-industrial activities on-site. Today's permit does not require electronic, electric, photographic and optical goods facilities to conduct analytical monitoring for these parameters.

Based on a consideration of the BMPs typically used at these facilities, and generally low pollutant values from the application data, EPA believes that the pollution prevention plan with visual examinations of storm water discharges will help to ensure storm water contamination is minimized. Because permittees are not required to conduct analytical monitoring, they will be able to focus their resources on developing and implementing the pollution prevention plan.

Quarterly visual examination of a storm water discharge from each outfall are required. The examination must be of a grab sample collected from each storm water outfall. The examination of storm water grab samples shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or other obvious indicators of storm water pollution. The examination must be conducted in a well lit area. No analytical tests are required to be performed on these samples.

The examination must be made at least once in each designated period during daylight hours unless there is insufficient rainfall or snow-melt to runoff. Whenever practicable, the same individual should carry out the collection and examination of discharges throughout the life of the permit to ensure the greatest degree of consistency possible. Examinations shall be conducted in each of the following periods for the purposes of inspecting storm water quality associated with storm water runoff and snow melt: January through March; April through June; July through September; October through December. Grab samples shall be collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) of when the runoff begins discharging. Reports of the visual examination include: the examination date and time, examination personnel, visual quality of the storm water discharge, and probable sources of any observed storm water contamination. The visual examination reports must be maintained onsite with the pollution prevention plan.

EPA realizes that if a facility is inactive and unstaffed it may be difficult to collect storm water discharge samples when a qualifying event occurs. Today's final permit has been revised so

that inactive, unstaffed facilities can exercise a waiver of the requirement to conduct quarterly visual examination.

EPA believes that this quick and simple assessment will help the permittee to determine the effectiveness of his/her plan on a regular basis at very little cost. Although the visual examination cannot assess the chemical properties of the storm water discharged from the site, the examination will provide meaningful results upon which the facility may act quickly. The frequency of this visual inspection will also allow for timely adjustments to be made to the plan. If BMPs are performing ineffectively, corrective action must be implemented. A set of tracking or follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. The visual examination is intended to be performed by members of the pollution prevention team. This hands-on examination will enhance the staff's understanding of the storm water problems on that site and the effects of the management practices that are included in the plan.

When a discharger is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the records of the visual examinations. Adverse weather conditions which may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

As discussed above, EPA does not believe that analytical monitoring is necessary for facilities that manufacture electronic and electrical equipment and components, photographic, and optical goods. EPA believes that between quarterly visual examinations and site compliance evaluations potential sources of contaminants can be recognized, addressed, and then controlled with BMPs. In determining the monitoring requirements, EPA considered the nature of the industrial activities and significant materials exposed at these sites, and performed a review of data provided in Part 2 group applications.

## **Sector AC**

# **Manufacturers of Electronic and Electrical Equipment and Components, Photographic and Optical Goods Permit Language**

The Permit Language section contains sector-specific requirements for each industrial sector, including:

- Discharges covered under the sector;
- Special Conditions
- Storm Water Pollution Prevention Plan Requirements;
- Numeric Effluent Limitations, if any; and
- Monitoring and Reporting Requirements.

Further guidance and discussion can be found in the Fact Sheet associated with this sector.

*AC. Storm Water Discharges Associated With Industrial Activity From Facilities That Manufacture Electronic and Electrical Equipment and Components, Photographic and Optical Goods*

1. Discharges Covered Under This Section. The requirements listed under this section shall apply to all storm water discharges associated with industrial activity from facilities that manufacture: electronic and other electrical equipment and components, except computer equipment (SIC major group 36); measuring, analyzing, and controlling instruments; photographic, medical and optical goods; watches and clocks (SIC major group 38) and computer and office equipment (SIC code 357).

When an industrial facility, described by the above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility (co-located industrial activities). The operator of the facility shall determine which other monitoring and pollution prevention plan section(s) of this permit (if any) are applicable to the facility.

2. Special Conditions.

*a. Prohibition of Non-storm Water Discharges.* Other than as provided in use this Section III.A. of this permit, non-storm water discharges are not authorized by this permit.

3. Storm Water Pollution Prevention Plan Requirements.

*a. Contents of Plan.* The plan shall include, at a minimum, the following items:

(1) *Pollution Prevention Team.* Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team that are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.

(2) *Description of Potential Pollutant Sources.* Each plan shall provide a

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

(a) *Drainage*

(i) A site map indicating an outline of the portions of the drainage area of each storm water outfall that are within the facility boundaries, each existing structural control measure to reduce pollutants in storm water runoff, surface water bodies, locations where significant materials are exposed to precipitation, locations where major spills or leaks identified under Part XI.AC.3.a.(2)(c) (Spills and Leaks) of this permit have occurred, and the 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 areas and storage areas. The map must indicate the outfall locations and the types of discharges contained in the drainage areas of the outfalls.

(ii) For each area of the facility that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow, and an identification of the types of pollutants which are likely to be present in storm water discharges associated with industrial activity. Factors to consider include the toxicity of chemical; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

(b) *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 storm water between the time of 3 years prior to the date of the submission of a Notice of Intent (NOI) to be covered under this permit and the present; method and location of onsite storage or disposal; materials management

practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the date of the submission of a Notice of Intent (NOI) to be covered under this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.

(c) *Spills and Leaks—*A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the date of the submission of a Notice of Intent (NOI) to be covered under this permit. Such list shall be updated as appropriate during the term of the permit.

(d) *Sampling Data—*A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.

(e) *Risk Identification and Summary of Potential Pollutant Sources—*A narrative description of the potential pollutant sources from the following activities: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; significant dust or particulate generating processes; and onsite 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.

(3) *Measures and Controls.* Each facility covered by this permit shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:

(a) *Good Housekeeping—*Good housekeeping requires the maintenance of areas which may contribute pollutants to storm water discharges in a clean, orderly manner.

(b) *Preventive Maintenance—*A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/

water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.

(c) *Spill Prevention and Response Procedures*—Areas where potential spills which can contribute pollutants to storm water discharges can occur, and their accompanying drainage points shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up should be available to personnel.

(d) *Inspections*—In addition to or as part of the comprehensive site evaluation required under paragraph XI.AC.3.a.(4) of this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility at appropriate intervals specified in the plan. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained.

(e) *Employee Training*—Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify periodic dates for such training.

(f) *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 storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.

(g) *Non-storm Water Discharges*

(i) The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the

identification of potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with Part VII.G. of this permit. Such certification may not be feasible if the facility operating the storm water 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 storm water pollution prevention plan shall indicate why the certification required by this part was not feasible, along with the identification of potential significant sources of non-storm water at the site. A discharger that is unable to provide the certification required by this paragraph must notify the Director in accordance with paragraph XI.AC.3.a.(3)(g)(iii) (below).

(ii) Except for flows from fire fighting activities, sources of non-storm water listed in Part III.A.2 (Prohibition of Non-storm Water Discharges) of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

(iii) *Failure to Certify*—Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the Director by [Insert date 270 days after permit issuance] or, for facilities which begin to discharge storm water associated with industrial activity after [Insert date 270 days after permit issuance], 180 days after submitting an NOI to be covered by this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the United States which are not authorized by an NPDES permit are unlawful, and must be terminated.

(h) *Sediment and Erosion Control*—The plan 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.

(i) *Management of Runoff*—The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) 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. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity [see paragraph XI.AC.3.a.(2) of this section (Description of Potential Pollutant Sources)] shall be considered when determining reasonable and appropriate measures. Appropriate measures or equivalent measures may include: vegetative swales and practices, reuse of 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, and wet detention/retention devices.

(4) *Comprehensive Site Compliance Evaluation*. Qualified personnel shall conduct site compliance evaluations once a year. Such evaluations shall provide:

(a) Areas contributing to a storm water 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 or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

(b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with paragraph XI.AC.3.a.(2) of this section (Description of Potential Pollutant Sources) and pollution prevention measures and controls identified in the plan in

accordance with paragraph XI.AC.3.a.(3) of this section (Measures and Controls) shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.

(c) A report summarizing the scope of the inspection, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph XI.AC.3.a.(4)(b) (above) of the permit shall be made and retained as part of the storm water pollution prevention plan for at least 3 years from the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with Part VII.G. (Signatory Requirements) of this permit.

(d) Where compliance evaluation schedules overlap with inspections required under 3.a.(3)(d), the compliance evaluation may be conducted in place of one such inspection.

4. Numeric Effluent Limitations. There are no additional numeric effluent limitations beyond those described in Part V.B of this permit.

#### 5. Monitoring and Reporting Requirements

##### a. Monitoring Requirements

(1) *Quarterly Visual Examination of Storm Water Quality.* Facilities shall perform and document a visual examination of a storm water discharge associated with industrial activity from each outfall, except discharges exempted below. The examination must be made at least once in each designated period [described in (a), below] during daylight hours unless there is insufficient rainfall or snow melt to produce a runoff event.

(a) Examinations shall be conducted in each of the following periods for the purposes of visually inspecting storm water quality associated with storm water runoff or snow melt: January through March; April through June; July through September; and October through December.

(b) Examinations shall be made of samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed one hour) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor,

clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Whenever practicable the same individual will carry out the collection and examination of discharges for the life of the permit.

(c) Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.

(d) When a facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may collect a sample of effluent of one of such outfalls and report that the observation data also applies to the substantially identical outfalls provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explaining in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan.

(e) When a discharger is unable to collect samples over the course of the monitoring period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the records of the visual examination. Adverse weather conditions which may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel

(such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

(f) When a discharger is unable to conduct visual storm water examinations at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the pollution prevention plan stating that the site is inactive and unstaffed so that performing visual examinations during a qualifying event is not feasible.