

# **Section 2**

## **Stormwater Pollution Prevention Planning for Industrial and Commercial Facilities**

### **2.1 Introduction**

The development of a stormwater pollution prevention plan is critical in a business' efforts to reduce pollutants in its stormwater discharges. Information is presented in this section to assist industrial owners and operators in developing a Stormwater Pollution Prevention Plan (SWPPP). The information provided is consistent with the State Industrial General Permit (General Permit) Board Order 97-03-DWQ. While the primary focus of this handbook is on industries covered by the General Permit, there are numerous commercial businesses that impact stormwater quality. Guidance is provided in Section 2.4 to assist selected commercial businesses in their efforts to reduce pollutants in stormwater discharges.

All facility operators subject to the General Permit must prepare, retain on site, and implement a SWPPP. The SWPPP has two major objectives:

1. To help identify the sources of pollution that affect the quality of industrial stormwater discharges and authorized non-stormwater discharges
2. To describe and ensure the implementation of BMPs to reduce or prevent pollutants in industrial stormwater discharges and authorized non-stormwater discharges

The process to develop and implement a Stormwater Pollution Prevention Plan is provided in this section.

#### **2.1.1 Who Must Prepare a SWPPP?**

The facilities covered by the General Permit and therefore required to prepare a SWPPP include the following:

- Facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards
- Manufacturing facilities
- Oil and gas/mining facilities
- Hazardous waste treatment, storage, or disposal facilities
- Landfills, land application sites, and open dumps
- Recycling facilities
- Steam electric power generating facilities

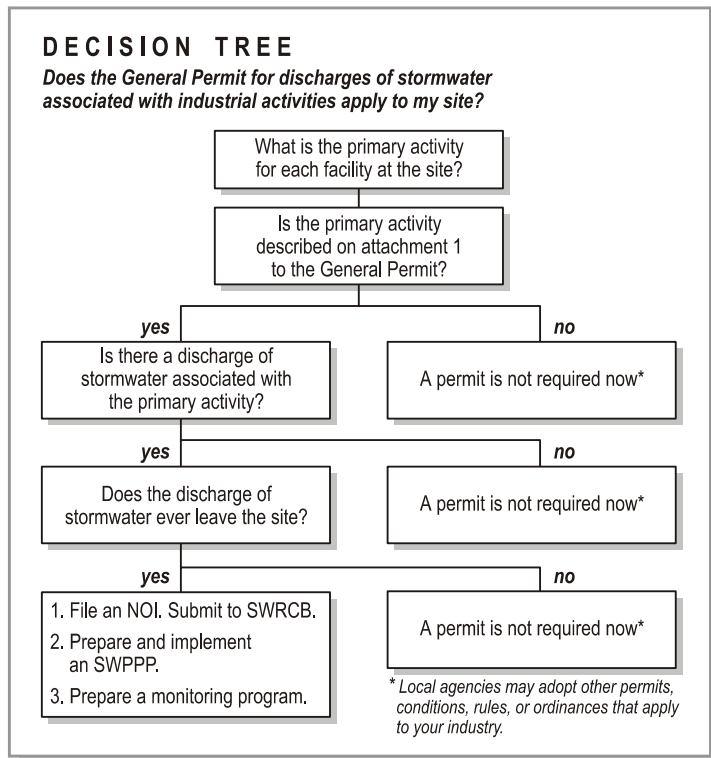
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- Transportation facilities
- Sewage or wastewater treatment works
- Manufacturing facilities where industrial materials, equipment, or activities are exposed to stormwater

The specific facilities included in each of the above categories are provided in Appendix B.

In California, the decision whether a facility is required to obtain coverage under the General Permit is determined by what activity takes place on the site. It is the industrial activities at the facility site (and subsequent SIC code classification) that determine whether coverage under the General Permit is required, not the primary business of the facility owner. For example, a school district must obtain coverage under the General Permit for its bus maintenance facility, even though the primary business of the district is education.

Many businesses in California that are not included in Appendix B currently have or may be required to have an NPDES permit for stormwater. These permits are issued because the businesses either belonged to a category for which federal regulations were previously established, or because the respective Regional Water Quality Control Board (RWQCB) identified a problem. RWQCBs have the authority to require an NPDES permit of any facility that is discharging stormwater, not just those identified in Appendix B.



To assist the business owners and operators in deciding whether their facilities are subjected to the General Permit, refer to Figure 2-1.

**Figure 2-1**  
**Decision Tree**

### **2.1.2 Who Is Not Required to Prepare a SWPPP?**

There are several categories of businesses and activities that are explicitly excluded from the requirement to develop a SWPPP under the commercial and industrial category, as these businesses are not required to obtain coverage under the General Permit. These are:

- Facilities which have other NPDES permits containing stormwater provisions
- Facilities determined ineligible by Regional Water Quality Control Boards
- Facilities which do not discharge stormwater to waters of the United States (including facilities that discharge stormwater to municipal sanitary sewers and facilities that do not discharge stormwater to surface waters or separate storm sewers)
- Most silvicultural activities
- Mining and oil and gas facilities that have not released stormwater resulting in a discharge of a reportable quantity (RQ).
- Facilities on Indian lands

The RWQCB may require particular facilities to obtain an individual NPDES stormwater permit in which case it is likely that the permit will specify the preparation of a formal SWPPP. Local jurisdictions may also require that a business that falls outside the SIC list in Appendix B prepare a stormwater pollution control plan (SWPCP) following the process presented in this Section. Additional information on a SWPCP is presented in Section 2.4.

## **2.2 SWPPP Overview**

An overview of the process to develop a SWPPP consists of six phases, as shown in Table 2-1. Each phase is briefly described in Table 2-1, and presented in detail in the following section. Those elements in Table 2-1 that are italicized are required elements of a SWPPP. Those not italicized are recommended SWPPP elements. An example SWPPP is provided in Appendix C.

## **2.3 Preparation of the SWPPP**

Each of the elements corresponding to the first five phases of the SWPPP development and implementation process outlined above is described in detail in this section. Phase six is discussed in Section 5.

<b>Table 2-1 The Six Phases of SWPPP Development</b>	
<b>Phase</b>	<b>Descriptions</b>
<p>1. PLANNING AND ORGANIZATION (see Section 2.3.1)</p> <ul style="list-style-type: none"> <li>A) <i>Form Pollution Prevention Team</i></li> <li>B) <i>Review other plans</i></li> <li>C) <i>Review other requirements</i></li> </ul>	The first step involves identifying the SWPPP Leader, forming a Pollution Prevention Team (PPT), and gathering and reviewing other existing documents and regulations.
<p>2. ASSESSMENT PHASE (see Section 2.3.2)</p> <ul style="list-style-type: none"> <li>D) <i>Develop a site map</i></li> <li>E) <i>Describe industrial activities</i></li> <li>F) <i>Inventory significant materials and chemicals</i></li> <li>G) <i>List past significant spills and leaks</i></li> <li>H) <i>Identify non-stormwater discharges</i></li> <li>I) <i>Identify existing BMPs</i></li> <li>J) <i>Assess potential pollution sources</i></li> <li>K) <i>Complete an Assessment Summary</i></li> </ul>	The SWPPP Leader with the assistance of the PPT conducts an assessment of the facility. Worksheets for conducting an assessment are provided at the end of this Section.
<p>3. BEST MANAGEMENT PRACTICES IDENTIFICATION PHASE (see Section 2.3.3 and Sections 3 and 4)</p> <ul style="list-style-type: none"> <li>A) <i>Identify erosion and sediment control BMPs</i></li> <li>B) <i>Identify BMPs for non-stormwater discharges</i></li> <li>C) <i>Identify non-structural, source control BMPs</i></li> <li>D) <i>Consider structural, source control BMPs</i></li> <li>E) <i>Consider treatment control BMPs</i></li> <li>F) <i>Prepare BMP list and prioritize</i></li> <li>G) <i>Prepare a Monitoring Plan</i></li> <li>H) <i>Prepare an Implementation Plan</i></li> </ul>	BMPs are selected to deal with the identified sources of stormwater pollution. Emphasis is placed on source control BMPs with the adoption of treatment control BMPs only if clearly needed. The SWPPP must include BMPs to prevent or reduce contact of stormwater and non-stormwater discharges with pollutants.
<p>4. ASSEMBLY PHASE (see Section 2.3.4)</p> <ul style="list-style-type: none"> <li>A) <i>Obtain required signatures</i></li> <li>B) <i>Select plan location</i></li> <li>C) <i>Assemble document</i></li> </ul>	This phase includes assembly of information obtained in the prior phases (e.g., site map, BMPs, worksheets, etc.).
<p>5. IMPLEMENTATION PHASE</p> <ul style="list-style-type: none"> <li>A) <i>Conduct Training</i></li> <li>B) <i>Implement the BMPs</i></li> <li>C) <i>Terminate non-allowable non-storm discharges</i></li> </ul>	The SWPPP is implemented and its effectiveness evaluated.
<p>6. MONITORING AND REPORTING (see Section 5)</p> <ul style="list-style-type: none"> <li>A) <i>Conduct monitoring program</i></li> <li>B) <i>Conduct record keeping and reporting</i></li> <li>C) <i>Conduct annual site evaluation</i> <ul style="list-style-type: none"> <li>- <i>Review monitoring information</i></li> <li>- <i>Evaluate the BMPs</i></li> <li>- <i>Review and revise the SWPPP as necessary</i></li> </ul> </li> </ul>	The required monitoring is conducted. Of particular importance is that adjustments be made in the SWPPP to update information on the nature of the activities at the site (e.g., change in outside manufacturing processes) insofar as they affect stormwater quality, and to redress observed inadequacies of the BMPs.

### 2.3.1 Phase 1 - Planning and Organization Phase

The development of a SWPPP is not intended to be a complicated and expensive process, and the staff of the company should look to doing as much of the SWPPP as possible. Technical consultants are available and can be a valuable asset. However, facility personnel should first become aware of the permit requirements, demonstrate site awareness as it relates to the SWPPP, and be familiar with the BMPs that will be

implemented. By taking this approach, facility personnel will be able to identify specific technical assistance more appropriate for a technical consultant. Regardless, the following elements are completed:

#### PHASE 1 - Planning & Organization:

- Form Pollution Prevention Team
- Review other plans
- Review other requirements

#### Form Pollution Prevention Team

The SWPPP must identify a specific individual or individuals within the facility organization as members of the Pollution Prevention Team (PPT). There are numerous ways to organize the PPT but most important is the need to designate a lead person responsible for spearheading the effort. For small facilities, stormwater PPTs may consist of just one individual. The size and composition of the team should be appropriate to the complexity of the facility. The team should consist of representatives from all departments, at all levels, that will have a role in implementing the SWPPP. The role of each member should be specified. The PPT may have personnel that overlap with related pollution control responsibilities such as a spill prevention and response team. The PPT is responsible for:

- Developing the SWPPP
- Assisting the facility manager in SWPPP implementation and revision
- Conducting the monitoring activities

The SWPPP must clearly identify the responsibilities, duties, and activities of each PPT member and should contain a statement of management's policy and responsibilities for implementing the SWPPP, the responsibilities of each division, the members of the PPT, and the lead contact.

#### Review Other Plans

Review Appendix A for specifications on the content of the SWPPP. Items of particular significance include:

- Site map(s) and narrative description of the facility relevant to the potential for stormwater pollution
- List of pollutants that may come in contact with stormwater
- Existing sampling data and existing and proposed BMPs

## Review Other Requirements

This may include gathering background information and identifying related environmental management plans and regulations. The PPT should assemble the information and currently available data to be used in the Assessment Phase. This may include:

- Drawings of the facility's drainage system indicating locations of inlets, pipes, ditches and outlets and the area served by each portion of the system.
- Stormwater quality data previously collected
- Requirements of the RWQCB regarding the surface water body into which the facility discharges

It would be prudent for the PPT to identify at this time other local, state, and federal requirements that impact, complement, or are inconsistent with the requirements of the SWPPP. The PPT should consider in the Assessment Phase how these various plans affect, integrate with, or conflict with the SWPPP.

### 2.3.2 Phase 2 - Assessment Phase

The PPT leader should use the PPT to assess the facility. Including the team throughout the development of the SWPPP makes it more likely that they will understand, support, and therefore implement the SWPPP.

The recommended approach is to identify key activities or activity areas that are likely sources of pollutants. A series of worksheets have been developed to assist with completion of this phase. Worksheets 1-8 are provided in Section 2.5 at the end of this section. Examples of completed worksheets are included at the end of Appendix C.

#### Develop a Site Map

The SWPPP must include a site map, provided on an 8-1/2 x 11 inch or larger sheet with notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, multiple site maps may be used. The map is to include the following information:

- The facility boundaries
- The outline of all stormwater drainage areas
- Portions of the drainage area impacted by run-on from surrounding areas

#### PHASE 2 - Assessment:

- Develop a site map
- Describe industrial activities (use Worksheet 1)
- Inventory significant materials and chemicals (use Worksheets 2 & 3)
- List past significant spills and leaks (use Worksheet 4)
- Identify non-stormwater discharges (use Worksheets 5 & 6)
- Identify existing BMPs (use Worksheet 7)
- Assess potential pollution sources (use Worksheet 8)
- Complete an Assessment Summary

- Direction of flow of each drainage area
- On-site surface water bodies
- Areas of soil erosion
- Nearby water bodies (such as rivers, lakes, ponds)
- Municipal storm drain inlets where the facility's stormwater discharges
- Stormwater collection and conveyance system, associated points of discharge, and the flow direction
- Structural control measures that affect stormwater discharges
- Locations of all catch basins
- Location of authorized non-stormwater discharges to the storm drain
- Outline of all impervious areas of the facility
- Locations where materials are directly exposed to precipitation
- Locations where significant spills or leaks have occurred
- Areas of industrial activities
- Monitoring locations

A base map of the facility identifies the location of buildings and key surface facilities. The stormwater conveyance systems with the location of the discharge outfall(s) and the drainage boundary to each outfall must be shown on the base map. Some fieldwork will likely be necessary to identify these features.

Note buildings and or activities that may be sources of non-stormwater discharges to the stormwater system: process wastewater; non-contact cooling water; wash water; irrigation water; and sanitary wastewater. These possibilities may be inferred from such things as the age of each facility building with older buildings more likely to have inappropriate connections. Remodeling may have resulted in inadvertent connections of non-storm lines to the storm drains.

It is recommended that a Preliminary Site Map be prepared at the outset of the Assessment Phase that describes the general physical layout of the business site (e.g., storm conveyance systems), and all information that is readily available in the minds of the PPT. This Preliminary Site Map is then confirmed and enhanced during the tour of the facility.

### Describe Industrial Activities

The SWPPP must include a narrative description of the facility's industrial activities, associated potential pollutant sources, and potential pollutants that could be discharged in stormwater discharges or authorized non-stormwater discharges. Worksheet 1 provides an activities assessment checklist to aid in identifying industrial activities. Table 2-2 outlines the pollutants potentially associated with common industrial activities.

Activity-or-Facility Type	Potential Pollutants								
	Sediments	Nutrients	Metals	Organics and Toxicants <sup>(1)</sup>	Floatable Materials	Oxygen-Demanding Substances	Oil and Grease	Bacteria	Pesticides
Vehicle & Equipment Fueling			X	X			X		
Vehicle & Equipment Washing and Steam Cleaning	X	X	X	X		X	X		
Vehicle & Equipment Maintenance and Repair			X	X			X		
Outdoor Loading & Unloading of Materials	X	X	X	X	X	X	X		
Outdoor Container Storage of Liquids		X	X	X		X	X		X
Outdoor Process Equipment Operations and Maintenance	X		X	X			X		
Outdoor Storage of Raw Materials, Products, and Byproducts	X	X	X	X	X	X	X		
Waste Handling & Disposal			X	X	X	X	X	X	
Contaminated or Erodible Surface Areas	X	X	X	X	X	X	X	X	
Building and Grounds Maintenance	X	X	X		X	X		X	X
Building Repair, Remodeling, and Construction	X		X		X	X			
Parking/Storage Area Maintenance			X	X	X		X		

1. This includes all toxic pollutants other than pesticides.

### Inventory Significant Materials and Chemicals

How materials are stored and handled bears on the potential for water pollution. Knowledge of the type and location of materials provides insight into the pollutants likely to be present. Completing Worksheets 2 and 3 may be useful in this regard. Worksheet 2 lists all materials whereas Worksheet 3 lists only those significant materials that are regularly exposed to stormwater. “Significant materials” in this instance includes materials that have the potential to be released with stormwater discharges, which includes but is not limited to the following: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substance designed under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of Title III or SARA; fertilizers, pesticides, and waste products such as ashes, slag, and sludge.

For each material on the list, describe the following:

- Locations where the material is being stored, received, shipped, and handled
- Receiving and loading procedures
- Spill or leak prevention and response procedures
- Typical quantities and frequency
- Areas protected by containment structures and the corresponding containment capacity must also be described

### **List Past Significant Spills and Leaks**

The SWPPP must include a history of significant spills since April 17, 1994. Worksheet 4 may be useful for this requirement. The word "significant" in this instance relates to quantity, specifically the volume, concentrations, or mass of a pollutant in stormwater discharge that can cause or threaten to cause pollution, contamination, or nuisance, that adversely impact human health or the environment, and cause or contribute to a violation of any applicable water quality standards for the receiving water. List releases of oil or hazardous substances in excess of reportable quantities and include the following information:

- Type, characteristics, and approximate quantity of the material spilled or leaked
- Cleanup or remedial actions that have occurred or are planned
- Approximate remaining quantity of materials that may be exposed to stormwater or non-stormwater discharges
- Preventative measures taken to ensure spills or leaks do not reoccur
- Superfund Amendments and Reauthorization Act (SARA) Title III, Section 313 facilities must describe releases of "water priority" chemicals to land or water that have occurred during the three years prior to permit issuance

Although only significant spills are required to be included in the SWPPP, identifying areas where smaller spills occur frequently is also useful. Note on the site map the areas where repeated spills have occurred, or where the risk of spill is particularly significant.

### **Identify Non-stormwater Discharges**

Facility operators must investigate the facility to identify all potential non-stormwater discharges and their sources. As part of this investigation, all drains (inlets and outlets) must be evaluated to identify whether they connect to the storm drain system. All non-stormwater discharges must be described. This must include the source, quantity, frequency, and characteristics of the non-stormwater discharges and associated drainage area. Some non-stormwater discharges, including the following, are allowed as long as they meet particular conditions in the General Permit (see Appendix A, Section D Special Conditions):

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- Fire hydrant flushing
- Potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems
- Drinking fountain water
- Atmospheric condensates including refrigeration, air conditioning, and compressor condensate
- Irrigation drainage
- Landscape watering
- Springs
- Ground water
- Foundation or footing drainage
- Sea water infiltration where the sea waters are discharged back into the sea water source

Even when non-storm discharges are allowed, BMPs are typically employed to reduce the pollutants they contain. It is also important to note that the allowable non-stormwater discharges may differ among Regional Boards; therefore, the allowable non-stormwater discharges may vary for businesses with individual stormwater permits.

The non-stormwater discharges to the drainage system can be identified using Worksheets 5 and 6. Section 3 (Source Control Fact Sheet SC10) provides a detailed procedure for identifying non-stormwater discharges. The General Permit requires that a corrective process must begin immediately. It is recommended that unallowable discharges be terminated before the SWPPP is completed. If this is not possible, the specific actions or BMPs proposed to terminate these discharges must be included in the SWPPP.

This process must be certified. The certification should include identification of potential non-stormwater discharges, a description of the results of any tests for such discharges, the testing method used and the date, and the site drainage points that were directly observed during the test. Worksheet 5 may be used for the certification.

If certification is not feasible because you do not have access to some point in the drainage system or because you are in the process of eliminating the discharge, you must notify the RWQCB of the situation. You must notify the RWQCB of any potential sources of non-stormwater discharges for which you could not perform the necessary testing and why. Notification to the RWQCB should also include a responsive time schedule to complete elimination. Discharges that are essential to industrial operations, but that cannot be eliminated should be noted. For "essential" discharges you may request and the RWQCB will

consider additional conditions or controls for these discharges. See Appendix A for the specific requirements. Worksheet 6 may help in this regard.

### **Identify Existing BMPs**

Those businesses already covered under the General Permit or that have obtained an individual permit should already have a SWPPP and therefore BMPs should already be implemented. However, even businesses that are preparing their first SWPPP will likely have BMPs already in place. These may include pavement sweeping, cleaning of drain inlet sumps, covered waste storage bins, and spill prevention and cleanup procedures. Worksheet 7 provides a checklist of BMPs that may be helpful in determining existing BMPs at a facility. Note these BMPs in relationship to the site activities and potential pollution sources. There may be other BMPs that were installed for reasons unrelated to stormwater control. Examples are berming, covered materials storage, and designated wash areas. You may have implemented these out of a desire for good housekeeping or financial savings, or because of other regulations such as the fire code.

### **Assess Potential Pollution Sources**

The SWPPP must include a narrative assessment of all industrial activities and potential pollutant sources to determine which areas of the facility are likely sources of pollutants in stormwater and non-stormwater discharges, and which pollutants are likely to be present in stormwater and non-stormwater discharges. Worksheet 8 may help with this task. Worksheet 8 also includes corresponding columns to list the selected BMPs that occur in the BMP Identification Phase, in Section 2.3.3. An example of a completed Worksheet 8 is provided in Appendix C.

Facility owners and operators must consider and evaluate various factors when performing this assessment such as current stormwater BMPs; quantities of significant materials handled, produced, stored, or disposed of; likelihood of exposure to stormwater or authorized non-stormwater discharges; history of spill or leaks; and run-on from outside sources. Facility owners and operators must summarize the areas of the facility that are likely sources of pollutants and the corresponding pollutants that are likely to be present in stormwater discharges and authorized non-stormwater discharges.

- Describe all industrial activities that generate dust or particulates that may be deposited within the facility's boundaries and identify their discharge locations; the characteristics of dust and particulate pollutants; the approximate quantity of dust and particulate pollutants that may be deposited within the facility boundaries; and a description of the primary areas of the facility where dust and particulate pollutants would settle.
- Describe the locations where soil erosion may occur as a result of industrial activity, stormwater discharges associated with industrial activity, or authorized non-stormwater discharges.
- Summarize existing stormwater quality data. Prepare a list of contaminants that have a reasonable potential to be present in the stormwater discharge in significant quantities, and an estimate of the annual quantities of these contaminants in stormwater discharges.

- Conduct more detailed field studies if necessary. Complex facilities may require extensive fieldwork to locate the drainage systems and outfalls. Some analysis of storm samples including flow measurements may be desirable to obtain a better understanding of the situation.
- Consider the potential and relative significance of each activity to cause stormwater pollution. This will be judgmental, based on the relative percentage of area covered by each activity, the nature of the activity, and the types of pollutants.

### Complete an Assessment Summary

Compile all of the above information for review and comment by the PPT. This summary will serve as the basis for the BMP Identification Phase. You should have sufficient information to determine which areas and activities may be contributors to stormwater pollution, and which BMPs are most suitable. Prioritization of BMP implementation may also be apparent at this time.

### 2.3.3 Phase 3 - BMP Identification Phase

The third phase in the preparation of the SWPPP is to identify the BMPs. The General Permit requires that the description of the BMPs identify the BMPs as (1) existing BMPs, (2) existing BMPs to be revised and implemented, or (3) new BMPs to be implemented. The description is to include a discussion on the effectiveness of each BMP to reduce or prevent pollutants in stormwater discharges and authorized non-stormwater discharges, and a summary of all BMPs implemented for each pollutant source. This information should be summarized similar to Worksheet 8.

#### PHASE 3 – BMP Identification:

- Identify erosion and sediment control BMPs
- Identify BMPs for non-stormwater discharges
- Identify source control BMPs
- Consider treatment control BMPs
- Prepare BMP list and prioritize
- Prepare the monitoring plan
- Prepare the implementation plan

### Types of BMPs

Before covering the steps included in this phase, a general description of BMPs is provided. BMPs are measures to prevent or mitigate pollution. They include a broad class of measures, many of which may already be used for reasons unrelated to stormwater pollution. BMPs are commonly defined two ways: whether they are Non-Structural or Structural (as in the General Industrial Permit), and whether they are Source Control or Treatment Control (as used in this Handbook).

- **Non-Structural BMPs** - Generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with industrial activity from entering stormwater. They are generally low cost and low technology in nature.
- **Structural BMPs** - Some prevent the pollutants from reaching stormwater, such as a roof cover. Others treat or remove pollutants in stormwater, such as detention basins.

- **Source Control BMPs** - (Section 3) - Prevent contact between stormwater and the pollution source and can be structural or non-structural. Examples of source control non-structural and structural BMPs include using alternative less toxic chemicals and covering an activity area that is a pollutant source. Source control BMPs are preferred over treatment control BMPs because they are generally 100% effective if implemented properly and are usually, but not always less costly than treatment control BMPs.
- **Treatment Control BMPs** - (Section 4) Treat the stormwater to remove pollutant(s) and are structural by their basic nature. Treatment control BMPs are not 100% effective, even if maintained and operated properly. There is also uncertainty as to the effectiveness and reliability of treatment control BMPs.

### **Identify Erosion and Sediment Control BMPs**

If your site assessment has identified bare areas (areas not covered by pavement, buildings or vegetation), it is necessary to identify BMPs that reduce sediment generation. The New Development-Redevelopment Handbook and Construction Handbook provide information on erosion and sediment control BMPs.

### **Identify BMPs for Non-stormwater Discharges**

The General Permit prohibits, with exceptions (Section 2.3.3) non-stormwater discharges to the storm drainage system. They either must be terminated or you must obtain a separate permit allowing for the discharge. As non-stormwater discharges are likely to be significant contributors of pollutants, they should be given prompt attention (see Source Control Fact Sheet SC10). If possible, they should be terminated before the completion of the SWPPP. However, some may require a considerable investment, requiring more time to reach full termination. If this is the case, the specific BMPs that will be implemented to terminate the discharges are to be included in the SWPPP. If certain non-stormwater discharges are allowed, it is still necessary to implement BMPs that reduce the pollutants in these discharges.

### **Identify Source Control BMPs (see Section 3)**

The axiom of "80% of the problem can be solved with 20% of the effort" probably is true for most industries. Low or modest cost BMPs, many of which may already be in place, will usually provide satisfactory protection. There is no minimum BMP requirement specified in the General Permit. The permit requires that consideration be given first to Non-Structural Source Control BMPs. The following categories of non-structural, source control BMPs presented below should be considered:

- Good housekeeping
- Preventive maintenance
- Spill prevention and response
- Material handling and storage
- Waste handling and recycling

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- Inspections
- Record keeping and internal reporting
- Quality assurance

It may be concluded at the end of the above effort that the low- and modest-cost BMPs may not be sufficient to reduce pollutants to an acceptable level. Given that this decision is judgmental, particularly in the absence of stormwater monitoring pollutant data, the PPT Leader has two options:

1. Complete the analysis at this point, only including the BMPs identified in the above effort. The SWPPP is implemented and, if the results are found through monitoring to be insufficient, the SWPPP is revisited and revised accordingly.
2. Identify the more costly BMPs at this time, but do not implement immediately. Rather, implement and evaluate the low- and modest-cost BMPs. Again, if they are found to be insufficient, the more costly BMPs are implemented.

General categories of structural source control BMPs include but are not limited to:

- Installing berms or simple curbing to divert runoff water from around the activity area to reduce the amount of polluted stormwater leaving the area.
- Implementing overhead coverage: This includes structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with stormwater and authorized non-stormwater discharges.
- Using secondary containment structures: This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills.
- Moving an outdoor operation indoors.
- Designating equipment wash areas.

To ensure that these BMPs are properly implemented, you should also include employee training, inspection, record keeping, and quality control as part of your source control BMPs.

#### **Consider Treatment Control BMPs (see Section 4)**

A Treatment Control BMP is included only if the source control BMPs are insufficient to meet numeric effluent limits required either by current federal regulations for certain industries (Appendix A) or in special situations identified by the local RWQCB.

Consider treatment control BMPs if:

- Elaborate source control BMPs are needed, in which case a Treatment Control BMP may be more cost-effective
- You are required to meet a numeric effluent limit that cannot be met with source control BMPs
- There is a pollutant of particular concern that can only be controlled with a treatment control BMP

Evaluate the following possibilities:

- If you have several separate drainage systems, consider placing the pollutant generating activities into one system so that you have to install only one treatment device.
- Place a treatment device in the immediate vicinity of the activity, rather than at the far end of the drainage system. This will reduce the size of the unit.
- If you have a wastewater treatment system, consider diverting the sources of particular concern to the sewer treatment plant. This may require permits or approvals from the agency providing sewer service.
- For activities that cover a small area but are potentially significant polluters, such as equipment washing, consider using an offsite commercial washing facility or covering the area and directing the wash water to a sanitary sewer. Consultation with the local sewer district is necessary.

After completing the above analysis, consider again covering the activity of concern. Even if it may be somewhat more expensive than treatment, covering has the advantage of being 100% effective. For certain industries, covering may avoid the need for coverage under the General Permit.

### **Prepare BMP List and Prioritize**

The final step is to "wrap-up" the list of BMPs, clearly showing the BMPs identified for each activity and by location within the site. Decide which BMPs to implement first. Make sure the BMP list meets the minimum requirements specified in the General Permit. Here is a final checklist of considerations:

- Have you identified the specific solutions to terminating unauthorized non-stormwater discharges and BMPs for those that are allowed?
- Have you identified low and nominal-cost BMPs that cover all of the activities you checked in Worksheet 1?
- Have you developed a strategy to deal with those activities that will still be significant sources of pollution for which more expensive BMPs are needed?

- Are you required to comply with numeric effluent limits, and if so, have you identified the specific BMPs to fulfill this obligation?
- Have you prepared a training program to provide the proper background to the employees who will implement the BMPs?
- Have you selected BMPs that are least likely to harbor or breed vectors such as mosquitoes? Have you considered vector suppression in your maintenance plan? If not, have you consulted with the local vector control agency about preventative maintenance and regular vector monitoring and abatement?
- Do you have a commitment and schedule for implementation of the BMPs, maintenance, inspection, and ongoing evaluation?

### **Prepare the Monitoring Plan (see Section 5)**

One of the important final steps in the preparation of the SWPPP is to develop a program to monitor how well the BMPs are being implemented, and how well they are reducing the amount of pollutants leaving your site in the stormwater. The General Permit requires that such a program be a component of the SWPPP. The program objectives are to:

- Monitor the quality of the stormwater discharge
- Aid in implementation of the SWPPP
- Measure BMP effectiveness

To meet these objectives the monitoring effort has these elements:

- Visual observations
- Stormwater monitoring
- Monitoring of authorized non-stormwater discharges

Each facility must either conduct an individual monitoring plan or participate in a group sampling program. A group monitoring program may be developed either by an entity representing a group of similar facilities or by a local stormwater agency that holds its own NPDES permit. According to the General Permit, the monitoring plan is to contain the rationale and description of the visual observation methods, location, and frequency; and the analytical methods and corresponding method detection limits used to detect constituents. A more complete description of the monitoring program is found in Section 5.

### **Prepare the Implementation Plan**

Phase 5 (discussed below) and Phase 6 (Section 5) outline detailed suggestions on how to implement and evaluate the relative success of the SWPPP. The General Permit specifies the following:

- Designate the personnel responsible for carrying out the SWPPP.
- Identify the time period (day or week as necessary) to conduct the annual Comprehensive Site Compliance Evaluation.
- Describe how records of the inspections, follow-up actions, and implementation of the BMPs will be prepared and kept.
- Develop a training program to train staff so they understand the SWPPP.

### 2.3.4 Phase 4 - Assemble the SWPPP

The final phase, before Implementation, is to assemble the SWPPP. Completing the SWPPP requires several actions.

#### Obtain Required Signatures

The SWPPP is to include the signature and title of the person responsible for the SWPPP, the dates of its initial preparation and each amendment (see Appendix A, Section C).

#### PHASE 4 – BMP Identification:

- Obtain required signatures
- Select plan location
- Assemble the document

#### Select Plan Location

An official copy of the SWPPP is to be located at the facility, not offsite. However, if an office is not located at the facility (e.g., landfill), then the SWPPP should be kept at the appropriate administrative office. The SWPPP is primarily for use by the Pollution Prevention Team, not the RWQCB or the public. Therefore, locating the SWPPP offsite would negate its purpose. However, a copy of the SWPPP must be submitted to the RWQCB on request or be available for review should a representative of the RWQCB or local municipality come on-site. The SWPPPs are considered to be available to the public pursuant to Section 308(b) of the Clean Water Act, and therefore are available to the public at the RWQCB office when SWPPPs have been submitted to the RWQCB.

#### Assemble the Document

Assemble the site map, narrative descriptions, and worksheets into a 3-ring binder or bound document. Include the Monitoring Plan and the Implementation Plan.

### 2.3.5 Phase 5 – Implement the SWPPP

Finally, implement the SWPPP by training personnel, implementing BMPs, and terminating non-allowable non-stormwater discharges. The SWPPP should be conducted according to the implementation plan developed in Phase 3.

Facilities must identify and provide for adequate resources (personnel and capital) to properly implement

#### PHASE 5 – Implementation:

- Conduct Training
- Implement the BMPs
- Terminate non-allowable non-storm discharges

the SWPPP.

### **Conduct Training**

Training is in itself a BMP and is important for personnel who are responsible for:

- Implementing activities identified in the SWPPP
- Conducting inspections, sampling, and visual observations
- Managing stormwater

Training should address topics such as spill response, good housekeeping, material handling procedures, and actions necessary to implement all BMPs identified in the SWPPP. The SWPPP should identify periodic dates for such training. Records should be maintained of all training sessions held.

### **Implement the BMPs**

The BMPs identified in Phase 3 are implemented during this phase. A schedule for implementation of the BMPs, maintenance, inspection, and ongoing evaluation should be developed and followed. It is important that BMPs be maintained, particularly treatment control BMPs, but other BMPs also require attention such as spill containment materials, drip pans, etc.

### **Terminate Non-allowable Non-storm Discharges**

One of the major elements of the SWPPP is elimination of unauthorized non-stormwater discharges to a facility's storm drain system. Unauthorized non-stormwater discharges can be generated from several of the activities that may take place at industrial facilities (e.g., washing of vehicles, equipment, buildings, or pavement; improper disposal of materials; spilled or leaked materials). BMPs to control spills, leakage, and dumping should be implemented to address non-storm discharges.

## **2.3.6 Phase 6 – Monitoring, Reporting, and Program Evaluation**

It is important, as well as required by the General Permit, that frequent inspections occur to check if BMPs are being implemented, and to evaluate their relative effectiveness. Section 5 provides guidance on Phase 6, which involves conducting the monitoring program, review of monitoring information, evaluation of BMPs, record keeping and reporting, and review and revision of the SWPPP.

## **2.4 Commercial Businesses**

As noted previously the State Industrial General Permit is applicable to a wide range of specified industries (see Section 2.1). However, there are a number of commercial businesses that, although not covered by the General Permit, may impact stormwater quality. The oversight of these businesses will vary according to local jurisdiction requirements. Some jurisdictions may require the business to develop a stormwater pollution control plan (SWPCP), which is a less

formal plan than the State General Permit defined SWPPP. The contents of these plans may vary with each local jurisdiction but all will basically address the following items:

- Identification of pollutant-generating activities
- Selection and implementation of BMPs to address these activities
- Review and modification of the plan to ensure effective implementation

While some jurisdictions may require the development of a written document, other jurisdictions may choose to provide education material to the businesses. To assist these businesses and the jurisdictions overseeing these businesses, specific stormwater pollution control guide sheets have been prepared (see Appendix D). These guide sheets may be used as reference material either as a business prepares a SWPCP or as a jurisdiction prepares outreach material. The guide sheets incorporate the source control BMPs presented in Section 3 into a business specific pollution control plan. The businesses selected for inclusion represent some of the more common business types in any community and tend to have a higher potential to impact stormwater quality based on the products they use and their activities. These businesses are listed in Table 2-3:

<b>Table 2-3 Business Categories and Subcategories</b>
Animal Care and Handling Facilities
Automotive Service Facilities
Auto Recycling
Body Repair
Maintenance
Service Stations
Food Service Facilities
Marinas, Boatyards, and Ports
Mobil Cleaning
Transportation-related
Food Service-related
Surface Cleaning
Amenities
Carpets & Upholstery
Swimming Pools & Spas
Water Softeners
Landscape Maintenance

More details on the business guide sheets are provided in Section 3.

## 2.5 SWPPP Worksheets

Blank copies of worksheets 1-8 for the Assessment Phase of the SWPPP follow.



**WORKSHEET #1**  
**ACTIVITIES ASSESSMENT CHECKLIST**

Name of Reviewer:	Date:		
ACTIVITIES - Check each activity present at site	EFFECTIVENESS		
	HIGH	MOD.	LOW
<input type="checkbox"/> Non-storm water discharges to drains. Describe BMPs in place:			
<input type="checkbox"/> Spill Prevention, Control and Cleanup. Describe BMPs in place:			
<input type="checkbox"/> Vehicle and equipment fueling. Describe BMPs in place:			
<input type="checkbox"/> Vehicle and equipment washing and steam cleaning. Describe BMPs in place:			
<input type="checkbox"/> Vehicle and equipment maintenance and repair. Describe BMPs in place:			
<input type="checkbox"/> Outdoors loading/unloading of liquid materials. Describe BMPs in place:			
<input type="checkbox"/> Outdoor container storage of liquids. Describe BMPs in place:			
<input type="checkbox"/> Outdoor process equipment operations and maintenance. Describe BMPs in place:			
<input type="checkbox"/> Outdoor storage of raw materials, products and byproducts. Describe BMPs in place:			
<input type="checkbox"/> Waste handling and disposal. Describe BMPs in place:			
<input type="checkbox"/> Contaminated or erodible surface areas. Describe BMPs in place:			
<input type="checkbox"/> Building and grounds maintenance. Describe BMPs in place:			
<input type="checkbox"/> Building repair, remodeling, and construction. Describe BMPs in place:			
<input type="checkbox"/> Parking/Storage Area Maintenance. Describe BMPs in place:			







**NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION**

(Source: EPA, 1992)

**Worksheet No. 5**

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 corporate 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** \_\_\_\_\_

## NON-STORM WATER DISCHARGE ASSESSMENT AND FAILURE TO CERTIFY NOTIFICATION

(Source: EPA, 1992)

**Worksheet No. 6**  
**Completed by:** \_\_\_\_\_  
**Title:** \_\_\_\_\_  
**Date:** \_\_\_\_\_

**Directions:** If you cannot feasibly test or evaluate an outfall due to one of the following reasons, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.

List all outfalls not tested or evaluated, describe any potential sources of non-storm water pollution from listed outfalls, and state the reason(s) why certification is not possible. Use the key from your site map to identify each outfall.

**Important Notice:** A copy of this notification must be signed and submitted to the RWQCB within 180 days of the effective date of this permit.

Identify Outfall Not Tested/Evaluated	Description of Why Certification Is Infeasible	Description of Potential Sources of Non-Storm Water Pollution

### 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, and that such notification has been made to the RWQCB within 180 days of \_\_\_\_\_ (date permit was issued), the effective date of this permit.

<b>A. Name &amp; Official Title (type or print)</b>	<b>B. Area Code and Telephone No.</b>
<b>C. Signature</b>	<b>D. Date Signed</b>

**WORKSHEET No. 7**  
**CHECKLIST FOR CONSIDERATION OF MINIMUM BMPs**

Check which one of the following describe your facility.

Name of Reviewer:

Date:

**Yes No N/A**

- |                          |                          |                          |  |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are outside areas kept neat and clean?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is the facility orderly and neat?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is the process debris removed regularly?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is the area clear of excessive dust from industrial operations?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is there no evidence of leaks and drips from equipment and machinery?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are employees regularly informed of the importance of good housekeeping?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are catch basins, storm conveyance pipes, and storm water treatment facilities cleaned at the appropriate intervals (see Chapter 5)?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are good housekeeping procedures and reminders posted in appropriate locations?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are vehicle maintenance activities kept indoors and do not tend to "creep" out the front door of the maintenance shop?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are containers for chemical substances and for temporary storage of wastes labeled?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is vehicle and equipment washing done in a designated area so that the wash water can be discharged to the sanitary or process wastewater sewer?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are regular housekeeping practices carried out?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is there a spill prevention and response team?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are appropriate spill containment and cleanup materials kept on-site and in convenient locations?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are cleanup procedures for spills followed regularly and correctly?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are used absorbent materials removed and disposed of in a timely manner?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are personnel regularly trained in the use of spill control materials?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is exposed piping and process equipment regularly inspected and/or tested to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are drainage ditches or the areas around the outfall(s) free of erosion?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are unpaved outdoor areas protected from water or wind erosion?  |

Any items checked "No" require consideration in the selection of BMPs.

N/A = Not Applicable.

