CHAPTER 9
Wastewater and Stormwater

This chapter discusses:

- *Two types of potentially polluted discharges that can be found at government fuel facilities—stormwater and industrial wastewater*
- *Federal National Pollutant Discharge Elimination System (NPDES) regulations for stormwater and industrial wastewater*
- *Appropriate management practices for controlling industrial wastewater*

9.1 Managing Wastewater

Most wastewater at fuel facilities comes from tank bottoms and tank-cleaning operations. **Tank-bottom wastewater** comes from fuel storage tanks and may be generated when:

- Fuel is contaminated with water.
- Water vapor condenses on the inside walls of a storage tank.
- Precipitation leaks into a tank from poorly fitted floating-roof seals and poorly maintained water drain lines.

Tank-cleaning wastewater comes from the periodic cleaning of tanks and associated piping.

9.1.1 Regulatory Background—NPDES Program

The **Clean Water Act (CWA)** is the federal statute that addresses water pollution in the U.S. The U.S. Environmental Protection Agency (EPA) and state and local agencies administer numerous programs under the CWA, including NPDES permitting. The NPDES program (Section 402) was established to control discharges from industrial sources in an effort to restore and maintain the nation's water quality. Developed under the authority of the 1987 amendments to the CWA, the NPDES program includes regulations governing two types of wastewater discharges, indirect and direct discharges.

- **Indirect Discharges** to **publicly owned treatment works (POTW)** or wastewater-processing facilities owned by a state or municipality, usually through sewer systems
- **Direct Discharges** directly into surface water (streams, rivers, lakes) typically through a pipe or ditch

Indirect sources discharge wastewater to a POTW, which in turn discharges into the receiving water body. Most POTW regulate indirect discharges through sewer use ordinances that give the municipality the power to issue and enforce industrial discharge permits. To meet discharge limits, the industrial facility must often provide some treatment of wastewater prior to discharge to the sewer system. Industrial and commercial indirect discharges are addressed by the National Pretreatment Program.

The Law Says

- *You need an NPDES permit if you discharge wastewater or stormwater from a point source into navigable waters (40 CFR 122 Subpart A).*
- *NPDES permits are usually good for 5 years and limit pollutants (such as oil and grease), total suspended solids, and pH (40 CFR 122.46 and 122.1(b)).*
- *The Energy Independence and Security Act of 2007 (EISA) (Section 438) established strict stormwater runoff requirements for federal development and redevelopment projects. This includes using green infrastructure and low-impact development practices.*
- *Construction projects that disturb 1 acre or more of land must obtain stormwater permits. This is typically done by applying for coverage under a construction general permit (40 CFR 122.26(b)(14) and (15)).*
- *Many local agencies and municipalities have stormwater regulations that may impose additional requirements.*

The NPDES program requires a permit for any municipal or industrial (non-municipal) direct **point source** discharging directly into surface waters of the U.S. A point source is a known, defined source of a release of water, such as a pipe, ditch, channel, conduit, or well. Most of the regulations pertaining to NPDES permits are presented in Title 40 of the *Code of Federal Regulations,* Parts 122–124 (40 CFR 122–124).

9.1.2 NPDES Discharge Permits

NPDES discharge permits contain several key elements:

- **Effluent** limitations
- Monitoring and reporting requirements
- Schedules of compliance

The primary purpose of an NPDES permit is to set either numeric or narrative **effluent limitations** for industrial or domestic wastewater discharges and stormwater from industrial activities and construction activities. An NPDES permit is issued by EPA or an NPDES-authorized state or local water quality control agency for a maximum of 5 years, but shorter time periods are common. The permit limits pollutants (such as oil and grease), **total suspended solids (TSS)**, and extremes of **pH**. The permitting authority may also develop technology-based or water quality-based effluent limits.

When the limits are set for your facility's NPDES permit, you must meet those limits or face penalties. You may have to monitor for compliance by taking periodic samples and conducting visual inspections. You also may have to submit test results that show compliance. Refer to *Chapter 12, Routine Reporting* for more information on wastewater monitoring and agency reporting requirements.

When a new facility is constructed or a new discharge is generated at an existing facility, the NPDES permit may include a schedule to allow a reasonable opportunity to meet the specified requirement.

9.1.2.1 Types of NPDES Permits

The two basic types of NPDES permits issued are individual and general permits.

Individual Permits

Don't Forget...

Most permit renewal applications are to be submitted to the agency at least 180 days before the existing permit expires.

Individual permits are issued to a single permittee for discharges from outfalls identified at the facility. The permit is specifically tailored to an individual facility, and the permitting authority develops the permit based on information provided in the facility's permit application. In addition to wastewater and industrial process water discharges, individual permits can cover stormwater discharged to a receiving stream. A permit application for individual permits is required to be submitted to the permitting agency at least 180 days before the existing permit expires or prior to the date a new discharge will begin.

A watershed-based permit may be considered instead of an individual permit. Rather than addressing individual pollutants on a discharge-by-discharge basis, a watershed-based permit encompasses all pollution sources within a hydrologically defined drainage basin or designated watershed. The ultimate goal of this

effort is to work with multiple stakeholders and dischargers to develop and issue NPDES permits that better protect an entire watershed.

General Permits

General permits cover multiple facilities within a specific category. They're more cost-effective for permitting agencies because of the large number of facilities that can be covered by a single permit. If you're in certain industries or have a certain type of wastewater discharge and meet the eligibility requirements outlined in the permit, you may obtain general permit coverage if your state has NPDES authority and has a program for issuing general permits. To apply for coverage under a general permit, a discharger must submit a Notice of Intent (NOI) and meet the requirements of the permit.

9.1.3 Managing Tank-bottom and Tank-cleaning Wastewaters

Prior to disposal or discharge of tank-bottom or tank-cleaning wastewater, you're required to document that the wastewater is *not* a hazardous waste. Under EPA's hazardous waste program, created by the Resource Conservation and Recovery Act (RCRA), a petroleum product is not classified as a hazardous waste until it is discarded. However, a wastewater or sludge (which are wastes by definition) may be considered RCRA hazardous if it tests "toxic" under RCRA regulations.

Components in petroleum products, such as benzene and lead, are identified in 40 CFR 261 as RCRA hazardous wastes and can cause petroleum-contaminated waters to test positive for RCRA toxicity characteristics. Also, the fuel system icing inhibitor (FSII) additive accumulates in tank-bottom waters, and can produce a RCRA hazardous waste. Although it is used in small concentrations to remove water droplets in jet turbine fuels JP–4, JP–5, and JP–8, FSII can accumulate by as much as 30% in volume at the bottom of a tank. FSII's high specific gravity causes it to move downward in the tank while gathering water with small amounts of benzene and other water-soluble parts of fuel.

To see if you have a hazardous waste that requires special handling, you must have samples of your tank-bottom and tank-cleaning wastewaters tested using the **Toxicity Characteristic Leaching Procedure (TCLP)**. This laboratory test analyzes wastes for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals according to 40 CFR 261 (see *Chapter 7, Hazardous and Recycled Waste*).

9.1.3.1 Disposal Methods

How you manage your wastewater is site-specific and depends on:

- How much wastewater you have
- On-site treatment capability
- The availability and treatment capabilities of local POTW and commercial wastewater treatment plants
- Whether your waste is RCRA non-hazardous or hazardous
- What the local, state, and federal regulations allow

Don't Forget...

Testing of tank-cleaning wastewaters and tank-bottom waste is necessary to determine its proper management and disposal. Additives like icing inhibitors or components in petroleum like benzene and metals can make these materials a hazardous waste.

In general, these are good management methods:

- *Reduce volume of wastewater* – Reduce the volume of wastewater by preventing water from getting into your tanks. To do this, use storage tank geodesic domes, tight floating-roof seals, or roof water drainage lines that keep your tanks clean and leakproof. Also, use equipment and procedures that minimize the volume of water needed to clean tanks.
- *Reduce volume of contaminants* – Reduce the volume of contaminants in your wastewater by using pretreatment processes on-site, such as distillation or gravity-feed **oil/water separators**.

It is also a good practice to document your procedures for cleanout, waste testing, management, and disposal in your site plans, such as an operation and maintenance (O&M) plan or a waste management plan.

9.1.3.2 Oil/Water Separators

Oil/water separators can be an economical way to pretreat wastewater if properly maintained. These are flow-through tanks or structures, as illustrated in *Exhibit 9–1*, that use gravity and provide sufficient hydraulic retention time to allow oil to rise to the surface. The oil layer separates from the water and then can be removed by skimmers, pumps, or other methods. The wastewater outlet is located below the oil level so that water leaving the separator is free of the oil that accumulates at the top of the unit. The inlet is often fitted with diffusion baffles to reduce turbulent flow that might prevent effective separation of the oil and might resuspend settled pollutants. Oil/water separators can be installed aboveground or underground. Buried oil/water separators may meet the definition of an underground storage tank. Refer to *Chapter 3, Underground Storage Tanks* and check your state and local agency regulations.

Did You Know?

Oil/water separators are regulated under the Spill Prevention, Control and Countermeasure (SPCC) regulations and may be regulated by the underground storage tank (UST) regulations depending on your state's requirements.

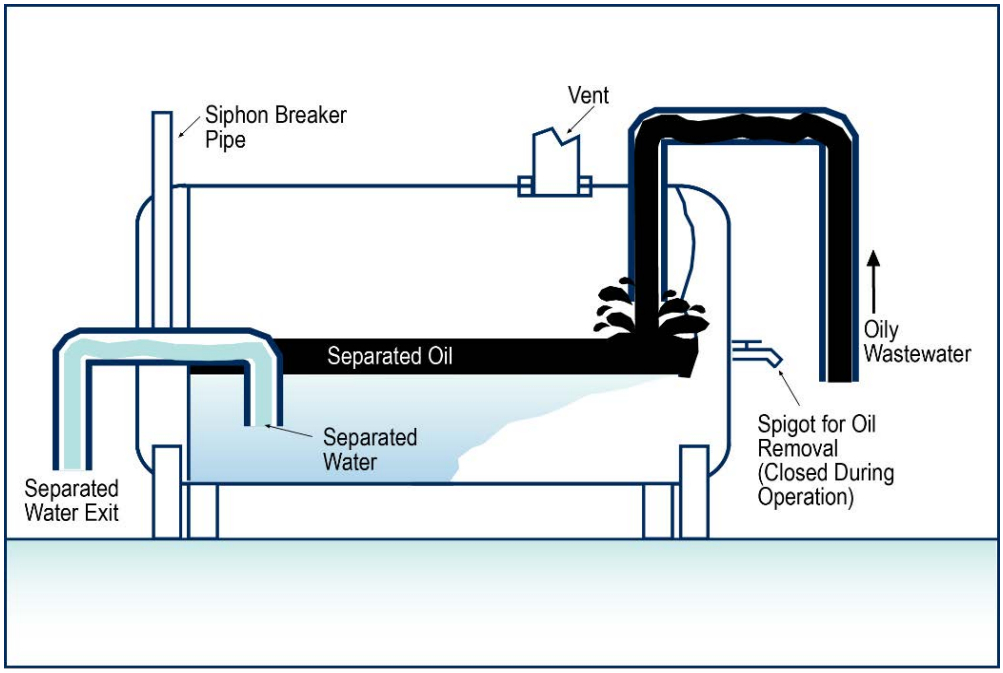
Regular maintenance is essential for effective operation. For instance, the accumulated oil or fuel must be removed and reprocessed, recycled, or disposed of on a regular schedule. In addition, if sludge builds up in the bottom of the separator, it becomes less effective because solids have less time to settle. A lack of regular sludge cleanouts can lead to the resuspension of collected sediments. If the removed oil, tank-bottom sludge, or tank-cleaning wastewater is hazardous, you may have to send it to a RCRA-permitted hazardous waste treatment, storage, and disposal facility (TSDRF). If you choose to treat it on-site, you may have to follow RCRA's complex TSDRF regulations. Refer to *Chapter 7, Hazardous and Recycled Waste* for more information.

The wastewater in an oil/water separator is usually discharged to a municipal sewer line and local POTW. If sanitary sewer lines are unavailable, you may need to store this wastewater and transport it by truck to a treatment facility. Check with state and local authorities and local wastewater treatment plants to see what they allow. When operating an oil/water separator, excess water flow can force wastewater through it too fast to allow separation, resulting in oil and other contaminants passing to the sewer. Therefore, oil/water separators should *not* be used to treat stormwater runoff unless they're designed for this purpose.

For best operation, oil/water separators can be fitted with sensing units that indicate when the compartments need to be cleaned. Only oily wastewater

should be sent to an oil/water separator. Antifreeze, degreasers, and detergents will emulsify oil into small droplets so the oil doesn't float to the surface.

EXHIBIT 9–1
Typical Oil/Water Separator



9.1.3.3 Illegal Practices

Never discharge tank-bottom, tank-cleaning, or other process water to a receiving stream, storm sewer, or drainage ditch without a properly issued NPDES permit that allows discharge of this type of wastewater. Unpermitted discharges that eventually make their way into stormwater discharges threaten human health and the environment. For example, if FSII-contaminated tank-bottom waters are released into waterways, the rapid biodegradation by microorganisms can kill fish by severely depleting oxygen in the waterway. If you obtained an NPDES permit to discharge tank-bottom and/or tank-cleaning wastewater, strictly follow regulatory limits for the concentration of fuel in the wastewater discharge. Finally, never dilute a hazardous waste to make it non-hazardous. This is illegal and punishable. See 40 CFR 268.3 for more information.

9.2 Managing Stormwater

Stormwater is the precipitation runoff from roofs, roads, containment dikes around aboveground storage tanks (ASTs), and other exposed areas. Pollutants may dissolve, become suspended, and/or float on the surface of the runoff. The polluted runoff may be discharged into receiving waters, such as lakes or streams. Stormwater discharges from fuel facilities may include these pollutants:

- Petroleum hydrocarbons
- Sediments and solids
- Fertilizers and pesticides
- FSII and other dissolved fuel additives

9.2.1 Regulatory Background Stormwater Permits

On November 16, 1990, EPA issued final rules establishing the NPDES permit application requirements for stormwater discharges associated with industrial activities. Industrial activity is defined in 40 CFR 122.26(b)(14). It includes petroleum bulk stations and terminals with North American Industry Classification System (NAICS) Code 42271 (equivalent to the Standard Industrial Classification [SIC] Code 5171). Industrial facilities required to apply for a stormwater permit may either:

- Submit an individual permit application, or
- Seek coverage under a general permit.

Note that although the stormwater program is mainly regulated by the NPDES program described below, other federal, state, and/or local regulations may have stormwater management requirements. For example federal SPCC rules (see *Chapter 4, Aboveground Storage Tanks and Containers*) say that stormwater cannot be drained from diked areas around ASTs until the stormwater has been inspected to make sure that no oil or pollutants are present and its discharge from the containment area is documented (40 CFR 112.8(c)(3)).

Most states are authorized to manage the stormwater NPDES permitting program. Therefore, the vast majority of facilities will need to obtain NPDES permit coverage through their state agency (see *Appendix E* for state agency contact information).

9.2.1.1 Individual Permits

For stormwater discharges, most states prefer issuing general permits, as this allows them to permit many facilities cost effectively and with quicker turnaround times. However, authorized NPDES state agencies and EPA (for unauthorized states, districts, and territories) still require individual permits for facilities that do not meet the criteria for general permits as set forth in the NPDES regulations. For example, EPA or the authorized state permitting agency may decide that a general permit does not adequately protect a facility because of the past compliance history of the facility, its location near an ecologically sensitive area, or because an authorized state agency has more stringent requirements than those specified in the EPA NPDES regulations.

Individual permits require a facility to meet detailed application requirements that are specific to your facility and industrial activity. The application process is usually long and requires the collection of representative stormwater samples and monthly, quarterly, and/or annual sampling and reporting from each of your facility's outfalls.

9.2.1.2 Multi-Sector General Permits

For facilities located in areas where EPA is the permitting authority, coverage is available under the EPA **Multi-Sector General Permit (MSGP)** for stormwater discharges (see *Exhibit 9–2*). The MSGP has specific requirements for most industrial activities, including fuel facilities. Most state agencies also offer general permits, similar to the MSGP, for stormwater management from certain activities and industrial categories.

The MSGP for industrial activities includes general requirements for most industrial categories. In addition to the general requirements, including development and implementation of Stormwater Pollution Prevention Plans (SWPPPs) and effluent limitations, there are tailored requirements for each industrial activity type. The MSGP regulations identify stormwater discharge requirements for different categories defined as "sectors" based on a facility's industrial activity. Two of these sectors (Sector P – Land Transportation and Sector S – Air Transportation Facilities) may apply to DLA Energy and are described in the following section.

9.2.2 NPDES Stormwater Permits at Fuel Facilities

Stormwater discharges from land and air transportation activities are often eligible for coverage under the EPA NPDES MSGP (or state equivalent), including fuel terminals with vehicle maintenance shops, equipment-cleaning operations, and/or airport deicing operations. Further, only the parts of these facilities that engage in these activities are required to authorize their stormwater discharges, such as the areas that are involved in vehicle maintenance, fueling stations, equipment cleaning, and/or deicing (see 40 CFR 122.26 (b)(14)(viii)). However, authorized states may have requirements that are stricter than the EPA NPDES MSGP requirements, so always check with the appropriate environmental agency for your site's specific requirements.

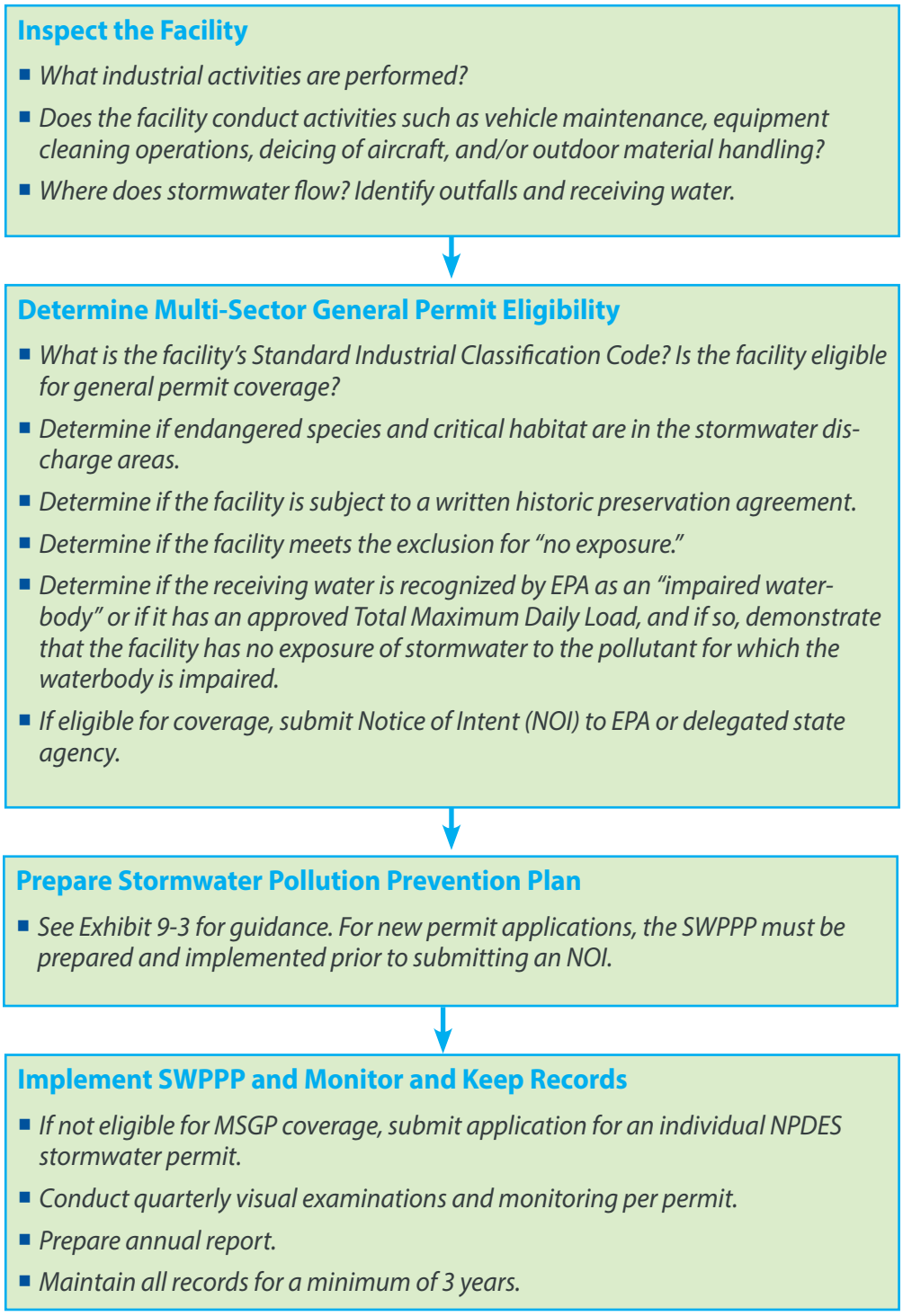
Land transportation facilities, including petroleum bulk stations and terminals (SIC 5171) and the U.S. Postal Service (SIC 4311) are covered under Sector P of the MSGP. Air transportation facilities with maintenance shops, equipment cleaning operations, and aircraft or runway deicing and anti-icing operations are covered under Sector S of the MSGP. This includes facilities generally classified by SIC Codes 4512–4581, such as airports, air terminals, airline carriers, and fueling companies.

If your facility is included under these two categories, you must obtain an MSGP or the equivalent state general industrial stormwater permit to authorize stormwater discharges from areas that perform the above-stated industrial activities. To obtain coverage, the facility in general must:

- Prepare and implement a SWPPP
- Establish a pollution prevention team who is responsible for stormwater pollution prevention at the facility
- Implement **best management practices (BMPs)** and good housekeeping measures
- Evaluate stormwater outfalls for the presence of non-stormwater discharges
- Perform quarterly inspections (monthly during deicing season for airport facilities)
- Conduct quarterly visual monitoring of stormwater at each outfall associated with an industrial activity
- Perform yearly training on topics, such as used oil and solvent management, fueling procedure, general good housekeeping practices, proper painting procedures, and used battery management
- Perform yearly monitoring and sampling if discharging a pollutant of concern to an impaired water body for which that body is impaired

- Submit an annual report and monitoring records to the EPA or state agency (see *Chapter 12, Routine Reporting* for more information)

EXHIBIT 9–2
NPDES Stormwater Permitting Process



In addition, airport facilities that use more than 100,000 gallons per year of glycol-based deicing agents or more than 100 tons per year of urea are required to collect and analyze samples of stormwater runoff. Airport facilities must implement controls to collect or contain contaminated melt water from collection areas used for disposal of contaminated snow. Facilities that generate

wastewaters associated with airfield pavement deicing may have to meet wastewater effluent limitations in accordance with 40 CFR 449.

If your facility is subject to both Sector P and Sector S, you'll need to address the SWPPP and stormwater monitoring requirements for both sectors. Refer to your current permit and state requirements to identify your compliance tasks and due dates.

9.2.3 Stormwater Pollution Prevention Plan

The SWPPP is an information gathering tool for dischargers to document, among other things, how control measures will be selected, designed, installed, and implemented to comply with the individual or general permit effluent limitations and requirements. *Exhibit 9–3* provides an overview of the development of a site-specific SWPPP. Note that some states may refer to the SWPPP as an Erosion and Sediment Control Plan or a Best Management Practices Plan.

To develop a SWPPP, you must:

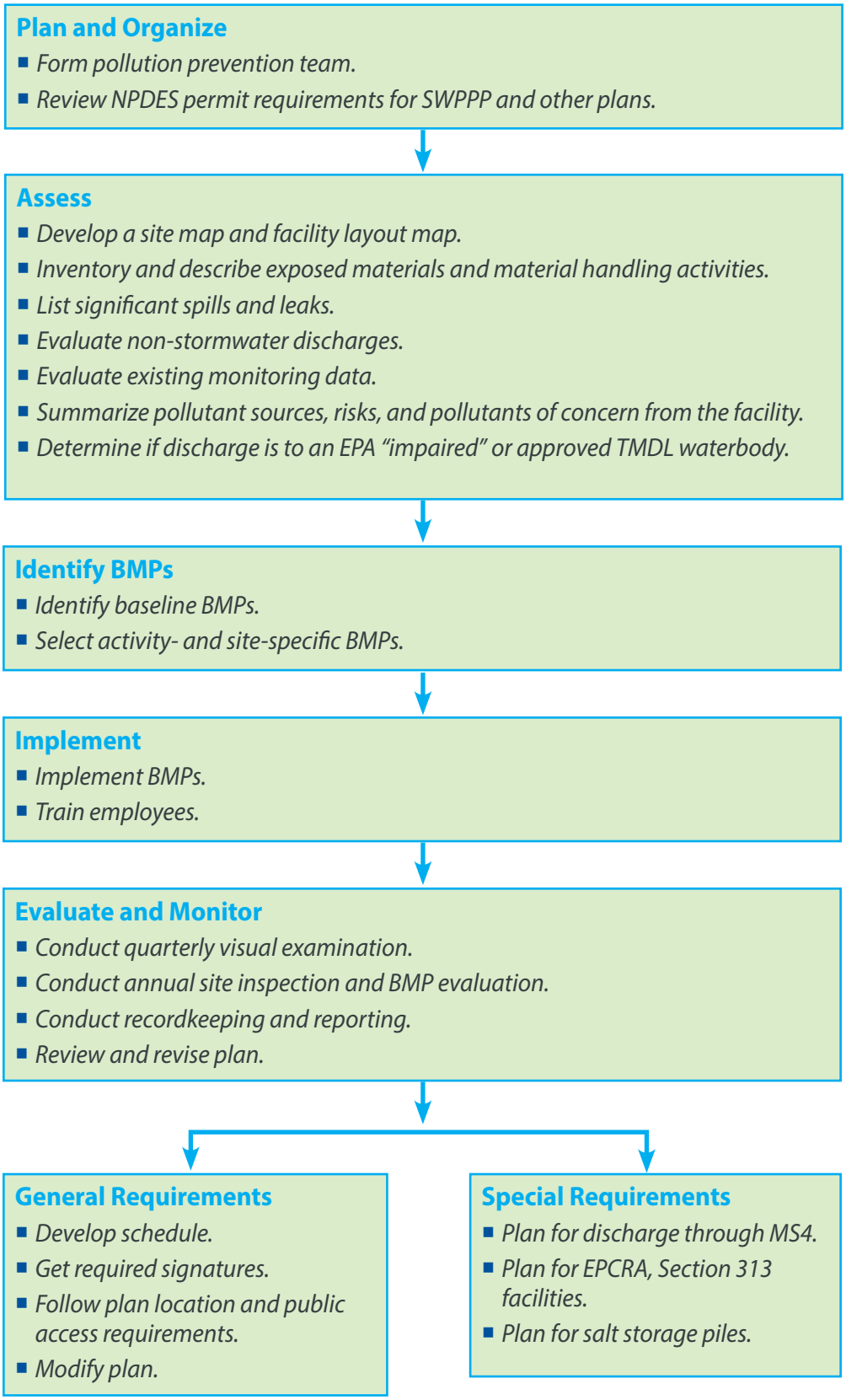
- Identify a stormwater pollution prevention team
- Assess potential stormwater pollution sources
- Determine drainage basins and outfalls associated with the permitted industrial activity stormwater discharge
- Determine the water body where the discharge ultimately is released and whether the water body has an EPA approved **Total Maximum Daily Load (TMDL)** or is "impaired"
- Select and use BMPs, including schedules of activities, prohibitions of practice, maintenance procedures, and other BMPs that prevent or reduce runoff pollution from your site
- Evaluate non-stormwater discharges
- Prepare detailed site maps and layouts
- Put the plan into effect
- Periodically evaluate and inspect the site to see if BMPs are being used

For help in preparing the plan, refer to *Chapter 1, Environmental and Emergency Response Planning*, the information below, and the documents referenced later in this chapter under *Section 9.5, For More Information*.

9.2.3.1 Pollution Prevention Team

The pollution prevention team is responsible for managing and revising the SWPPP. Their duties may entail assessing potential stormwater sources, updating the plan, collecting stormwater samples for analysis, conducting training, enforcing BMPs, inspecting outfalls, and recordkeeping. This team may consist of unit environmental coordinators, sample collectors, laboratory representatives, and other installation representatives if the DLA Energy facility is co-located at a base. *Appendix 9–1* provides some general guidelines that should be used for periodic stormwater monitoring requirements and an Inspection Record Form that can be used for stormwater sampling purposes.

EXHIBIT 9–3
Industrial Stormwater Pollution Prevention Plan Development and Implementation



BMP = Best Management Practice
MS4 = Municipal Separate Storm Sewer System
EPCRA = Emergency Planning and Community Right to Know Act of 1986

9.2.3.2 Stormwater Discharges

Development and implementation of BMPs should be used to reduce potential stormwater pollution and minimize the amount of pollutants discharged into stormwater. Non-structural BMPs are practices that are inexpensive, relatively simple, and applicable to a wide variety of facilities and activities. Appropriate BMPs for fuel facilities include:

- *Good housekeeping* – Maintain a clean and orderly work environment to reduce the possibility of accidental spills caused by mishandling equipment and materials.
- *Preventive maintenance* – Regularly inspect and maintain stormwater management devices, such as catch basins and oil/water separators. Inspect, test, and maintain equipment and systems to avoid conditions that could cause breakdowns or failures and result in pollutant discharges to surface waters.
- *Visual inspection* – Perform routine visual inspections of your facility to uncover conditions that could cause breakdowns or failures. Keep records of your inspections.
- *Spill prevention and response* – Identify where spills can occur and possible drainage points. Plan procedures for cleaning up spills, and identify spill cleanup equipment.
- *Sediment and erosion control* – Start a sweeping program to remove sediment and dirt from paved areas and vehicle parking areas.
- *Management of runoff* – Divert, infiltrate, or reuse stormwater runoff. Techniques include vegetative swales (depressions of land), reuse of collected stormwater (for example, as an irrigation source), inlet controls (for example, oil/water separators), and infiltration devices.
- *Employee training* – Use training programs to educate personnel about techniques that reduce discharges of pollutants to surface waters. Include such training topics as spill prevention and response, good housekeeping, and material management practices.
- *Recordkeeping and reporting* – Document spills or other discharges, quality of stormwater discharges, and inspection and maintenance activities.

9.2.3.3 Non-stormwater Discharges

Certain non-stormwater discharges (NSWDs) may be authorized by the storm-water permits as long as the non-stormwater component of the discharge does not contain pollutants that would contaminate the stormwater discharges from the site or have a reasonable potential to cause or contribute to a water quality violation. The following are examples of NSWDs that are often authorized for discharge by the permit:

- Discharges from firefighting activities
- Fire hydrant flushing
- Potable water sources, including water line flushing
- Irrigation drainage

- Lawn watering
- Uncontaminated air conditioning or compressor condensate
- Springs
- Uncontaminated groundwater, foundation, or footing drain flows
- Exterior building washdown water that does not contain detergents or other chemicals used in conjunction with the cleaning activities

As part of the annual report, the facility operator must prepare an annual Dry Weather Discharge certification that certifies all permitted outfalls have been investigated during a period of dry weather and no discharges were observed. If a discharge is observed, the investigator must determine the source and whether the discharge is an authorized NSWD. The certification should detail the following information:

- Potential significant sources of non-stormwater at the site
- Description of results of any test and/or evaluation for the presence of NSWDs
- Evaluation criteria or testing method
- Date of testing and/or evaluation
- On-site drainage points directly observed during the test

9.2.3.4 Detailed Site Maps

You'll also need to prepare a detailed site map (a topographic map may be a useful base map) as part of the SWPPP. The components of the site map should include:

- Arrows showing the direction of stormwater flow at the facility
- Waterways, outfalls, ponds, ditches, wetlands, and an outline of the drainage areas for each permitted outfall
- Surrounding off-site waterbodies and which water body(ies) ultimately receive the discharge and whether the segment of that water body(ies) is defined by EPA as "impaired" or has an approved TMDL
- If applicable, show if discharge is to a municipal separate storm sewer system (MS4), the name of the MS4, and the waterbody where the MS4 ultimately discharges
- Location of all authorized NSWD
- Locations of all stormwater controls, such as detention ponds, secondary containment structures, and other permanent devices that reduce the amount of pollutants that can enter the waterways from the stormwater
- Earthen **berms** and steep slopes identifying them as places where erosion could occur
- Buildings, paved areas, fueling stations, and vehicle service areas
- Material storage areas and outdoor equipment storage areas
- Fueling stations, loading and unloading areas, liquid storage tanks, trash collection areas, and oil/water separators or other equipment used to treat water

- Areas where there have been significant spills
- Location of spill cleanup materials and equipment
- Haul routes or access roads

9.2.4 Stormwater Permit "No Exposure" Exemption

On December 8, 1999, EPA finalized regulations that covered small municipality stormwater discharges and addressed several issues of concern with the original stormwater regulations that were finalized in 1990. The regulation is referred to as the Phase II Storm Water Regulation. While most of the regulation addresses municipalities, it contains two items of interest to fuel terminals. This includes a change in the size of disturbed area undergoing construction that requires a stormwater construction permit, from 5 acres to 1 acre (discussed below) and an exemption from stormwater permitting if no materials are exposed to stormwater.

You may be eligible for an exemption from a stormwater permit if no materials are exposed to stormwater (see 40 CFR 122.26 (g)). Under the conditional no exposure exclusion, operators of industrial facilities have the opportunity to certify to a condition of "no exposure" if their industrial materials and operations are not exposed to stormwater. The regulation states that a stormwater permit is *not* needed if:

- Any using, storing, or cleaning of machinery or equipment or materials that come from the using, storing, or cleaning of machinery or equipment are under cover and not exposed to stormwater.
- Any spills or leaks are cleaned up and no material is left on the ground or washed in stormwater inlets.
- There are no materials exposed to stormwater from past industrial activity.
- Any material handling equipment is stored in a shelter unless they are properly maintained (that is, no oil leaks).
- Any loading and unloading activities are conducted under a roof or in such a manner that the materials cannot be spilled on the ground.
- Any materials or products stored outdoors are covered, and exposure to stormwater does not result in the discharge of pollutants.
- A shelter covers open, deteriorated, or leaking storage drums, barrels, tanks, and similar containers.
- Waste materials, such as trash, are in covered, non-leaking containers (for example, dumpsters).
- There is no application of process water to the facility grounds unless it is covered by an NPDES permit.
- There is no visible deposit of materials from roof stacks and/or vents that is not allowed by a permit (such as an air quality control permit) and the material is not evident in the stormwater flow.

If your site meets the requirements for "no exposure," a form needs to be completed and submitted to EPA or the authorized state agency. As long as the condition of "no exposure" exists at a certified facility, the operator is excluded from industrial stormwater permit requirements, provided that the operator resubmits

the form every 5 years and the conditions at the site still meet the requirements. If conditions at your site change so that materials are exposed to stormwater, then a permit must be obtained. Always check with the permitting authority in your state and/or speak to an appropriate environmental representative about whether your site qualifies for the "no exposure" exemption.

9.2.5 Construction Site Stormwater Runoff Management

It has become evident over time that stormwater and sediment runoff from construction sites have contributed to water pollution.

Did You Know?

In a short time, construction activity can contribute more sediment to streams than can be deposited by natural causes over several decades. EPA has identified erosion as the single largest cause of impaired water quality in rivers.

Most states administer stormwater permitting requirements for construction sites that have land-disturbing activities affecting 1 acre or more. However, some states, as well as regional and local agencies, require stormwater management for construction projects disturbing less than 1 acre. "Disturbance" refers to exposed soil resulting from activities such as clearing, grading, and excavation. Construction activities can include road building, construction of buildings or tank farms, and demolition. Construction affecting less than 1 acre may be regulated if it is part of a larger, phased project with a planned disturbance of equal to or greater than 1 acre. In other words, you are not able to parcel or phase your construction activities into pieces each less than 1 acre to avoid regulation of your stormwater discharges.

Operators of regulated construction sites are required to develop and implement a SWPPP and to obtain permit coverage from an authorized state agency or from EPA if the state is not authorized by EPA to issue NPDES permits for stormwater discharges associated with construction activities.

Construction General Permits (CGPs) outline a set of provisions that construction operators must follow to comply with the requirements of the NPDES stormwater regulations. The CGP generally covers any site that is 1 acre or larger, including smaller sites that are part of a larger project. To apply for coverage under this general permit, an operator must meet the requirements of the CGP, submit a completed NOI form to EPA or the delegated state or local agency, prepare and implement a SWPPP, and implement BMPs at the site to minimize pollutants (mainly sediments) in the stormwater runoff from the site. The NOI requests a variety of information, including latitude and longitude of the construction activity and information related to the Endangered Species Act (ESA) and the National Historic Preservation Act. A SWPPP that identifies BMPs to minimize pollutant runoff is also required. Finally, a Notice of Termination (NOT) form is submitted to EPA or delegated agency at the completion of construction when disturbed soils are stabilized (that is, vegetated or paved) and temporary erosion and sediment control measures have been removed. Contact your state or local permitting authority to obtain its regulations or ordinances addressing erosion and sediment controls.

BMPs for construction activities consist of, but are not limited to:

- Dust controls with water, geotextile mats, or seeding
- Silt fences and gravel or stone filter berms or rip rap
- Mulching with hay, wood chips, straw, or gravel

- Grading, sloping, and terracing land
- Preserving natural vegetation where feasible
- Sequencing construction activities
- Limiting construction entrances and exits
- Constructing diversion structures (for example, retaining walls, dams, channels, or retention ponds)

9.3 Stormwater Runoff Requirements for Federal Agencies

Section 438 of the Energy Independence and Security Act instructs federal agencies to use the next generation of stormwater management practices instead of conventional approaches to control runoff. This involves site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property for any project with a footprint that exceeds 5,000 square feet. Predevelopment hydrology is the combination of runoff, infiltration, and **evapotranspiration** rates and volumes that typically existed on a site before human-induced land disturbance occurred (for example, construction of infrastructure on undeveloped land such as meadows or forests). Federal agencies can comply with Section 438 by using a variety of stormwater management practices referred to as **green infrastructure** or **low impact development practice**, including for example reducing impervious surfaces, using vegetative gardens, porous pavements, green roofs, infiltration tree planters and pocket wetlands, or rainwater cisterns to capture and reuse stormwater.

9.4 State Requirements

State Requirements

In many cases, the NPDES program has been delegated by EPA to the state water quality agency, with EPA retaining oversight authority. As of July 2018, all but three states (Massachusetts, New Hampshire, and New Mexico), the District of Columbia, and six territories (American Samoa, Guam, Johnston Atoll, Midway Island, Northern Mariana Islands, and Puerto Rico) have been authorized by EPA to implement their own NPDES permitting program. Regional EPA and state contacts for NPDES permits are listed in *Appendix E*.

If your state has an EPA-authorized NPDES program, you deal directly with the state agency when applying for or renewing an NPDES permit. In some states, the permitting authority is delegated down to the regional level. For specific requirements, always check with your local, state, or regional agencies.

- NPDES permits in California are issued by nine regional water quality control boards.
- In California, oil/water separators are fixed treatment units and have special regulations for operating.
- The states where EPA has NPDES permitting authority for construction activities needing stormwater permits are Massachusetts, New Hampshire, New Mexico, the District of Columbia, and six territories. All other states have their own permitting programs and requirements.

- Some states refer to SWPPPs by other names or require additional plans to accompany the SWPPP. For instance, California, Florida, Illinois, New York, South Carolina, Virginia, and Washington require a SWPPP. Alabama requires a Stormwater Best Management Practices Plan for industrial activities and a Construction Best Management Practices Plan for construction activities. Be sure to understand what plans are required in the state where your facility is located.
- Some states require Erosion and Sediment Control Plans for construction activities. These states may require that the plan be developed and stamped by a Professional Engineer (PE), such North Carolina and Oregon.
- In Florida, the state's Department of Environmental Protection has NPDES permitting authority for construction and industrial activities. A SWPPP is required prior to receiving a Construction General Permit or Multi-Sector Generic Permit. BMPs are required to be identified within the SWPPP. For more information on Florida's NPDES requirements, visit *https://floridadep.gov/Water/Stormwater* .
- In South Carolina, the Department of Health and Environmental Control manages the state's NPDES program. South Carolina requires that a SWPPP be prepared for coverage under the Construction General Permit and requires BMPs for Erosion and Sediment Control. For more information on South Carolina's NPDES Requirements, visit *https://www.scdhec.gov/environment/water-quality/stormwater*.

9.5 For More Information

For More Information

For Information On…	See…
NPDES Agencies	
EPA Office of Wastewater Management	*www.epa.gov/owm*
EPA's Stormwater Program	*www.epa.gov/npdes/npdes-stormwater-program*
Documents and References	
National Menu of Stormwater Best Management Practices	*www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater*
Construction Site Stormwater Runoff Control	*www3.epa.gov/npdes/pubs/fact2-6.pdf*
Downloadable information on the NPDES program	*www.epa.gov/npdes/npdes-technical-resources*
Impaired Waters and Total Maximum Daily Loads	*http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/index.cfm*
Green Infrastructure and Low Impact Development	*www.epa.gov/green-infrastructure*
Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act	*www.epa.gov/greeningepa/documents/ www.epa.gov/sites/production/files/2015-08/documents/epa_swm_guidance.pdf*

9.6 Action Items

Action Items

Item	Date Started	Date Completed	N/A	Comment(s)
Obtain permits for stormwater, oil/water separators, and otherwastewater discharges from your state, federal, or local environmental agency.			☐	
Prepare and *implement* a SWPPP to ensure that stormwater does not come into contact with sources of contamination.			☐	
Form a stormwater pollution prevention team.			☐	
Train your personnel in stormwater pollution prevention, wastewater sampling, and agency reporting.			☐	
Identify and remove non-allowable NSWD from stormwater outfalls.			☐	
Routinely sample and analyze your stormwater for pollutants, as required by your permit.			☐	
Perform quarterly outfall and BMP inspection and document findings in your annual report as required by your permit.			☐	
Update your SWPPP and the site map when there are changes in BMPs, sediment and erosion control measures, outdoor materials management, and stormwater regulations.			☐	
Routinely sample and *analyze* your wastewater for pollutants, as required by your permit.			☐	
Maintain detailed sampling records, including dates, locations, who sampled, who analyzed, and the analytical method(s) used to test your samples.			☐	
Routinely report your monitoring results to federal, state, and local regulatory agencies, as required by your permit.			☐	

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Appendix 9–1 Stormwater Sample Collection Form

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Appendix 9-1: Stormwater Sample Collection Form

This appendix presents general guidelines for collecting and analyzing stormwater samples. You can also use the Inspection Record Form (below) to document your sampling and inspection events.

- Wait a minimum of 72 hours after the previous rainfall event (greater than 0.1 inch of rainfall accumulation). This requirement is waived when the previous storm within this time frame did not produce a discharge greater than 0.1 inch.
- If no qualifying storm event resulted in runoff from the facility during the quarter, visual monitoring is excused. Documentation must be included in the monitoring records to indicate that no qualifying storm event occurred during that quarter.
- Take a sample at each stormwater outfall.
- Collect a grab sample within the first 30 minutes of observed stormwater discharge if possible but no later than 1 hour from initial discharge.
- Verify that the sample is for a defined rainfall event (minimum accumulation of 0.1 inch in rain gauge or from local rain data).
- Use a clean, clear glass jar for sample collection.
- Take the sample from the horizontal and vertical center of the channel.
- Complete an Inspection Record Form for each outfall.
- Maintain the completed Inspection Record Form with the SWPPP.
- Initiate follow-up actions and revise the Inspection Record Form, if necessary. Additional requirements for analytical laboratory sampling:
- Sector S facilities that use more than 100,000 gallons per year of glycol-based deicing agents or more than 100 tons per year of urea are required to collect and analyze samples of stormwater runoff. Complete additional information toward end of form.

Inspection Record Form				
Facility:				
Outfall location:				
Date:	Q1	Q2	Q3	Q4 (circle)
Person Collecting Sample:				
Start Time of Stormwater Discharge:				
Time Sample Collected:				
Total Rainfall Amount (minimum of 0.1 inch for representative event):				
Attach documentation of rainfall event.				
Signature:				

Parameter	Objectionable Conditions Noted
Color (none, yellow, brown, green, gray, other)	
Odor (none, sewage, sulfide, oil, gas, rancid, other)	
Clarity (clear, semiclear, murky)	
Floating solids (solids floating on top of sample)	
Settled solids (soils that settle to bottom of sample)	
Suspended solids (solids suspended in sample)	
Foam	
Oil (none, sheen present)	
Scum	
Turbidity (none, cloudy, opaque)	
Materials associated with domestic or municipal sewage or industrial waste	
Other objectionable conditions: vegetation, deposits, stains, structural damage	
Notes:	
This section to be completed by Sector S facilities requiring laboratory analyses	
Containers submitted for analysis (type and number):	
Laboratory:	
Analyses requested:	
Attach lab results to the end of this form.	
Follow-up	
Follow-up Actions Completed:	
Date of Follow-up Actions:	
Signature for Follow-up Actions:	
Note: Completed inspection record forms should be maintained on file with the SWPPP.	