

Storm Water Management: Discharges from Construction Activities

Introduction

Precipitation that enters a surface water body by flowing overland or through a storm water collection system is known as storm water or storm water runoff. If this storm water is exposed to a pollutant, the pollutant can be transported to a receiving waterway, often without any treatment. Unlike the wastewater infrastructure that is designed to collect water from our sinks, toilets, showers, and other processes for treatment prior to discharge, storm water typically discharges directly to lakes, rivers, and streams. Consequently, any pollutant in the storm water also reaches the receiving waterway. In fact, storm water runoff is now the largest contributor of contaminants to our Nation's waterways.

Pollutants typically found in storm water include sediment, oil, grease, nitrogen, phosphorus, litter, and other chemicals. These contaminants come from a variety of sources such as outdoor maintenance operations, material storage, trash collection, and construction sites. Since construction sites have many different types of storm water pollution, runoff from these sites can have a significant impact on water quality. As a result, construction sites are specifically regulated under the Clean Water Act and the implementing regulations. This fact sheet provides a brief overview of compliance requirements for storm water management at construction sites.

Regulatory Background

The Clean Water Act (CWA) provides the legal basis to control pollution of our Nation's waterways. The CWA's objectives are to restore and maintain the physical, chemical and biological properties of our Nation's waters. To achieve these objectives, discharge of pollution into our Nation's waterways is prohibited unless authorized by a permit. The Environmental Protection Agency (EPA), charged with developing and implementing a permit program, established the National Pollutant Discharge Elimination System (NPDES) that authorizes and regulates certain types of wastewater and storm water discharges.

The initial focus of the NPDES program was on point source discharge of industrial and domestic wastewater. The control of pollution from these sources had a positive impact on the quality of our nation's waterways, but did not meet the goals of the CWA. In 1987 Congress amended the CWA to include storm water discharges under the NPDES permitting program, and again the EPA was charged with turning the Congressional intent into implementing regulations. The EPA focused on two priority storm water pollution contributors, industrial areas and storm water collection systems. For discharges associated with industrial areas, the EPA identified eleven activity categories that must be covered under a NPDES permit associated with the industrial activity. The regulated industrial categories include discharges from transportation facilities, hazardous waste, treatment, or disposal facilities, landfills, **construction activity**, etc.

In response to the 1987 CWA amendments, the EPA developed a two-phase permitting program for storm water discharges. Phase I of the program addresses sources of runoff with the greatest potential negative impact on water quality. Under Phase I, storm water discharges from the eleven

categories of industrial activity are covered, including "large construction sites". Large construction activity is one that will disturb, or is part of a "common plan" that will cumulatively disturb, five or more acres of land. Phase II of the storm water program became effective in March 2003 and extended coverage to "small construction sites". A small construction activity is one that will disturb, or is part of a "common plan" that will cumulatively disturb, one or more acres of land. Projects cannot be separated to stay below the permitting requirement. One example would be where a road and utility project take place at the same time and in the same area. The road project will disturb .75 acres and the utility project will disturb .50 acres. While these projects individually will not require a permit, they will together break the one-acre threshold, thus the common plan of development will be regulated.

The second storm water pollution contributor that the EPA regulated under the NPDES permitting program is storm water discharges from storm sewer collection systems (commonly referred to as MS4). The criteria for obtaining NPDES permit coverage for MS4s is based on population serviced. Under Phase 1 of the storm water program, storm water collection systems that serviced more than 100,000 people were required to obtain permit coverage as an MS4 (i.e. Los Angeles). Under Phase 2 of the storm water program, storm sewer collection systems that serviced less than 100,000 and were within an urbanized area (determined by the Census Bureau) were required to obtain permit coverage. The NPDES permitting authority also has the ability to "designate" other storm water collection systems that must be permitted. Permittees under this program are required to implement 6 minimum control measures to minimize pollution within the storm sewer collection system. Two of the six minimum control measures directly relate to construction activities. MS4 permit holders are required to establish measures to minimize pollution from construction sites entering the storm sewer collection system. The second control measure requires the permit holder to establish measures to protect storm water post-construction such as Low Impact Development. If the construction project falls within an area covered by an MS4 permit, additional requirements may exist for that construction site. Review the MS4 permit and Storm Water Management Plan requirements to ensure compliance.

Actions for Regulated Sites

Operators of regulated construction sites, sites with one acre or more of land disturbance or a series of activities under a common plan of development that will cumulatively disturb more than one acre, are required to obtain NPDES storm water permit coverage for the construction project. The first step in obtaining permit coverage is determining the permit authority. Most states are authorized to implement the NPDES permit program within their state, so the state will be the permit authority. (See <http://cfpub.epa.gov/npdes/statestats.cfm> for listing of states with approved NPDES programs). Some states have further designated local municipalities as permitting authorities. Contact the installation's Storm Water Program Manager for assistance in determining the permit authority. It should also be noted that some state and local governments have separate soil and erosion control requirements for construction projects that may be different than storm water permit requirements.

Once the permit authority is determined, the operator of the construction site is responsible for obtaining permit coverage. There are two types of permits available, general and individual permits. Under a general permit, the regulatory agency develops a standard permit that applies to most situations and operators apply for coverage under that permit. The general permit is the most common type of permit used for construction activities. If the site has extremely unique

characteristics that do not meet the standards for which the general permit was created, then an individual permit must be obtained.

In areas where the EPA is the permit authority, the Federal Construction General Permit (CGP) is used for both small and large construction activities. Most other regulatory agencies have developed a similar general permit for construction activities. Some permitting authorities have special requirements and permits for small construction activities (sites that disturb more than one acre but less than 5 acres) and large construction activities (greater than 5 acres).

Applying for Coverage Under a General Permit

To apply for general permit coverage, the operator must complete a Notice of Intent (NOI) form (or equivalent used by the regulatory agency) and submit it in accordance with the permit requirements. The information provided in the NOI will be used to determine if a given construction project qualifies for coverage under a general permit. Under the Federal CGP, an operator must file a NOI if the entity meets either of the following definitions:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project, which is necessary to ensure compliance with a Storm Water Pollution Prevention Plan (SWPPP) for the site or other permit conditions (i.e., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

These definitions may require more than one entity to obtain a permit for a single project. Under the first definition, the installation will need to obtain permit coverage since they control the specifications and modifications as well as oversee the construction project. In cases where an outside party (contractor) is performing the construction project, that party would meet the second definition and be required to get their own permit coverage for the same project.

When dealing with MILCON projects, where the installation is using the Army Corps of Engineers or Navy Facilities Command as the construction agent, the construction agent will meet the definition under Item 1 and be required to obtain the permit. Some state and local regulatory agencies require the installation to also obtain the permit since they are the site owner, which means three permits could be issued for one MILCON project.

The NOI for a Federal CGP must be completed and submitted to the EPA no later than seven days prior to the start of construction. Other regulatory agencies may have different submittal requirements (i.e., Ohio requires NOI submission 21 days prior to construction start). The regulatory agency determines the approval method for permit coverage, which is typically explained in the permit. Under the Federal CGP, once the NOI is submitted, there is a seven day waiting period. If at the end of seven days, the EPA has not declined the NOI, permit coverage is granted. Some regulatory agencies require a formal approval letter from the regulatory agency prior to starting construction, while some agencies only require a 48 hour notification prior to starting construction activity. It is important to carefully review the permit to ensure that specific submission and approval requirements are met prior to starting construction. The construction activity CAN NOT start until authorized by coverage under the storm water permit

Who Must Sign the NOI

The signatory requirements for the NOI are spelled out in the permit. The Federal CGP requires one of the following individuals to sign the NOI:

1. For a corporation: By a responsible corporate officer, (President, Vice-President, etc);
2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively;
3. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official.

Under these definitions, installation commanders are required to sign the NOI. Installations must also ensure that construction contractors have the appropriate level of signature for permits. Signatory authority for a NOI cannot be delegated down to lower levels. Some states and local permitting authorities have slightly different signatory requirements and some do allow for delegation, but that is not typical.

Permit Compliance

Generally, storm water permits for construction sites require the permit holder to identify potential storm water pollutants on the site and how those pollutants will be managed to reduce or eliminate movement to a receiving water body. The measures taken at the site to protect the storm water are known as Best Management Practices (BMPs). The primary contaminant of concern at construction sites is sediment, however there are many other contaminants to be considered (e.g., fuel, paint, solvents, etc.). Permits typically require the development of a site specific SWPPP.

The SWPPP identifies site characteristics, sources of storm water pollutants, BMPs that will be implemented on site, inspection and maintenance requirements, and any other site activities required to meet the permit conditions. The SWPPP also specifies how the site is going to comply with the permit. Typically, permit compliance is measured by compliance with the SWPPP. If the SWPPP is not followed, the site is in violation of the permit and subject to Notices of Violation.

Contents of the Site-Specific SWPPP

The permit for the construction site will establish the minimum contents of the site specific SWPPP. The following provides a general outline of the SWPPP:

1. Site and Activity Description – Details the who, what, when and where information about the construction site including maps, sequence of activities, flow of storm water, and receiving water body.
2. Controls to Reduce Pollutants – Details the potential sources of pollutants on site and BMPs that used to control the pollutants. Since sediment is one of the contaminants of concern, this section will detail major grading and clearing activities as well as sediment and erosion controls to minimize sediment transport.

3. Maintenance of Controls (BMPs) – Explains how a site's BMPs will be operated and maintained. Examples would be silt fence repair or removing sediment collected in a sediment trap.
4. Documentation of eligibility related to Endangered Species Act (ESA) and Total Maximum Daily Loads (TMDLs) – Discusses how a project relates to the ESA and TMDLs. The SWPPP must document potential impacts of construction activities on endangered species and habitat as well as any mitigation measure that will be implemented. If the site discharges to a water body that has an established TMDL, certain provisions may be necessary to comply with the TMDL.
5. Inspections – Details how the site will meet permit required inspections including who will perform the inspection and frequency. If there are multiple permit holders, this section details inspection responsibilities.
6. Plan updates – Any changes or modifications to the plan based on changes to the project or changes to the plan based on inspection results.
7. Signature, Plan Review, and Making Plans Available – All SWPPP must be signed and certified, made available to the regulatory agency and the public, and available on-site. Unlike NOIs, SWPPPs and associated reports can be signed and certified by a duly authorized individual of the person who signed the NOI

Maintaining Compliance at the Site

Maintaining compliance at the construction site is accomplished in two ways: 1) by preparing a site specific SWPPP that meets all permit conditions; and 2) implementing this plan on-site. As discussed above, site inspections will be required under the permit. Inspections are used to ensure continued compliance with the SWPPP and permit conditions as well as identify areas that need maintenance/improvement on site. Inspections must include all areas with exposed soil, BMPs, site entrances/exits, storage areas exposed to storm water, and discharge locations. These inspections must assess the operation and effectiveness of the BMPs as well as evidence of contaminants being discharged to a receiving water body. Inspections must be documented since they are a permit and SWPPP condition.

A "qualified individual" must perform inspections. The term qualified individual can vary by regulatory jurisdiction. Under the Federal CGP, qualified individual means "a person knowledgeable in the principles and practices of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures." Some states such as Florida and Virginia have more restrictive requirements on inspectors. Some states require the inspectors to be certified. Ensure the individuals completing the required inspections meet the qualifications of the regulatory agency.

Project Completion

Once the construction activity has been completed, the site must be stabilized with vegetative cover, asphalt, etc. Final stabilization conditions will be defined in the permit. Once the site, or all

portions of the site for which the permit holder has control, meets the definition of "final stabilization," the operator (permit holder) must submit a Notice of Termination (NOT). Like the NOI in which the operator applies for permit coverage, the NOT ends permit coverage for the site. There are timelines and signatory requirements associated with filing the NOT, similar to the NOI, so review the regulatory requirement. Under the Federal Construction General Permit, the NOT must be filed within 30 days of final stabilization.

For additional information:

Contact your installation or Major Command Water Quality Manager.

WESS 031 Construction Site Stormwater Management Seminar

Air Force Institute of Technology Civil Engineer and Services School, available at
http://www.afit.edu/cess/course_des.cfm?p=WESS%20031

EPA's Stormwater Discharge from Construction Activities Website

Get permits, fact sheets, frequently asked questions, and BMP information: located at
<http://cfpub.epa.gov/npdes/stormwater/const.cfm>

Construction Industry Compliance Assurance Website

Get state permits, frequently asked questions, and BMP information: located at
<http://www.cicacenter.org/>