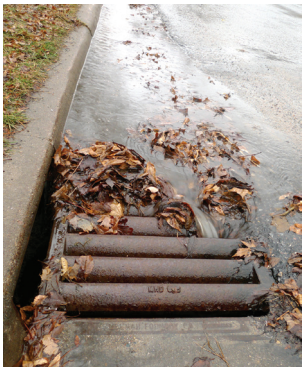
Best Management Practices for Preventing Stormwater Pollution as a Result of Equipment Washing



Stormwater drainage systems are complex and essential networks that prevent water from flooding our cities and roads. This system redirects water to rivers and lakes, where it is reintroduced to the environment.

Because of this, it is essential that the stormwater running back into these ecosystems remains uncontaminated and unpolluted. Federal and State regulations prohibit pollutant discharges to bodies of water and require that local governments implement stormwater compliance programs that protect water quality. This is primarily enforced through a document known as a Stormwater Pollution Prevention Plan (SWPPP).

This white paper deals with one of the most critical aspects of that document, the prevention of stormwater contamination in processes related to equipment washing. This includes the washing process, as well as the containment and treatment of wash water. The guidelines presented will help your company stay compliant with stormwater regulations.

WHAT IS SWPPP

Municipal, industrial and commercial facilities, such as construction sites,military bases and shipping centers, that produce and need to dispose of wastewater fall under the regulation of the Clean Water Act. Often times, that wastewater comes in the form of contaminated stormwater that can potentially pollute water sources.

For a company to gain approval to operate and to manage equipment and materials that could potentially contaminate stormwater, they must obtain a NPDES permit, and an important requirement of that type of permit is the development of a Stormwater Pollution Prevention Plan (SWPPP).

A properly constructed SWPPP accomplishes three things. First, it identifies any potential sources of pollution that could contaminate runoff from the regulated site. Second, the report should describe how those pollutants will be reduced or eliminated so that stormwater will be unaffected. Finally, a good report ensures that a work site understands it's environmental responsibilities and will work to meet the conditions of its NPDES permit. A SWPPP should be obtained by the project "Operator" who will possess operational control over a project.

PREVENTING POLLUTION FROM HAPPENING

All of the procedures described in this section should be thoroughly documented and described in the SWPPP, and plans for their use should also be outlined. Any action taken to prevent pollution should be listed and these actions should directly correspond to each potential source of pollution. For example, if a small drain that led to a local river was located next to an area in which particulate matter was being washed off of trucks. Your project's SWPPP should explain both that this hazard existed, and explain how the drain was temporarily sealed.

Structural control measures like drain covers are sometimes necessary to prevent polluted water from entering the stormwater drainage system. However, whenever possible, steps should be taken to contain pollutants and prevent them from even threatening the drainage system. A number of simple precautions can be taken, such as properly maintaining equipment to minimize the risk of spills. However, more complex measures often need to be taken.

A common source of drainage pollution is contaminated wash water. Used wash water contains high concentrations of solvents, oil, chemicals, and metals and washing over driveways and maintenance pads often allows pollutants to enter storm drains, and washing over porous surfaces can contaminate ground waters. Washing in a containment system where the wash water can be collected and recycled or disposed of properly is the environmentally compliant alternative to these hazards.

Permanent filtration and containment systems can require additional permits to install. However, some systems are conveniently non-permanent. These systems can offer oil and toxic chemical separation capabilities. However, this separation process may produce hazardous waste and chemicals are removed and placed into a more concentrated state. This should be accounted for, and SWPPP disposal procedures should be adjusted as needed. These prefabricated washout containers that dispose of waste solids are EPA-recommended as reliable ways to keep protect the stormwater system from pollutants.

Washing systems with containment and treatment capabilities are particularly important if your worksite has large equipment and vehicles that need washing. Washing this equipment will result in large amounts of dirty wash water, and implementation of a water reuse and treatment system is the EPA recommended way to deal with this large volume. This method saves money on water bills, sewer connection charges and promotes water conservation. These wash systems can remove dissolved phosphates, metals, oil sediment and other pollutants.

Another pollution hazard that a SWPPP should address is the issue of erosion and sediment control. One common way that sediment is spread harmfully into the environment from a work site is through the phenomenon known as trackout. Trackout occurs when vehicles leaving job sites track mud and grime from the site out onto public roads. This sediment can mix with stormwater there and pollute waterways and ground water. Using wheel wash systems on any vehicles before they leave the worksite can prevent this.

In conserving the purity of naturally occurring stormwater runoff, spills and leaks are one of the greatest risk factors. They are the largest industrial sources of stormwater pollution. Because of this, each SWPPP must explain in great detail how toxic materials will be transported and contained. And each SWPPP must also list the equipment and procedures that will be used to contain and clean up toxic materials if a spill should take place. It is important for every employee to be familiar with these procedures, and classes should be held to familiarize them with the spill response plans. This is particularly important when using wash systems that separate contaminates from wash water, because these separated substances can be very toxic.

When there is a spill, it should be contained and cleaned up as quickly as possible, and this should be done as safely as possible. One of the pieces of technology for accomplishing this is a spill response trailer. These trailers contain large storage tanks and long hoses that can quickly and thoroughly recover spilled toxic liquids before they can pollute local bodies of water. In the event of a spill, every detail should be accurately documented in order to understand the extent of the event, study the event to prevent it in the future, and comply with any legal requirements.

TRAINING AND IMPLEMENTATION

The process of training employees in the requirements of the SWPPP begins by clearly delineating who is responsible for each aspect of plan. This is best accomplished by delegating the most important tasks to a stormwater pollution prevention team. However, this team must not be the only employees responsible for understanding how to prevent stormwater pollution. Every individual on staff should be trained in this regard, in fact many employees will be working very closely with the operations that generate wastes and they may be able to provide further pollution prevention recommendations.

It is also important to use testing to determine if the preventative measures are working effectively. This stormwater sampling data should be carefully recorded and studied. For each type of testing, these reports should list sample location, pollutant parameters tested for, and the name of the employee in charge of testing. Finally, sanctioned inspectors should be contacted to examine every SWPPP policy to determine if it is properly extensive, and to assess whether or not it has been implemented properly.

PROTECTING THE ENVIRONMENT

Polluted stormwater discharges from work sites can significantly damage surrounding rivers, lakes, costal waters and ground waters. Storm drain systems flow directly into creeks and rivers, where chemicals, heavy metals, and other pollutants can contaminate drinking water sources. If not properly regulated as outlined above, used wash water can directly contribute to this contamination.

Along with the chemical pollution of stormwater, the erosion and displacement of sediment at work sites is another environmental hazard that an effective equipment washing procedure will combat. When soil is exposed and unstabilized, it can be tracked out onto roadways where it will be washed into the stormwater system. This can pollute waterways and clog fish gills, prevent aquatic plants from receiving sunlight and as a result, damage ecosystems. Every SWPPP should ensure that there is a washing procedure to prevent this harmful "trackout."

RIVEER ENVIRONMENTAL

As this document has explained, an effective SWPPP requires a comprehensive and detailed system for stopping wastewater pollution of stormwater. That system should involve methods meant to conserve water, remove pollutants, contain wastewater, and respond to toxic spills. Riveer Environmental offers washing technologies to address those system requirements.

EPA guidelines state that prefabricated washout containers that dispose of waste solids and liquids are a reliable method of preventing leaks and spills of wash water. Those guidelines also state that non-stormwater discharges should be reduced or eliminated completely.

Riveer filtration systems collect dirty wash water, remove suspended solids, heavy metals, chemicals, microbes and other contaminates from that water, and then reuse that purified water. Wash water use is cut drastically, and the water this is used is filtered to totally eliminate the risk of pollution. These filtration systems ensure that your company is an environmentally compliant organization.

Riveer also offers wheel wash systems to eliminate trackout and spill response trailers to collect hazardous liquids in the event of a spill or accident. The pumping system in this equipment can recover 1000 gallons of oil, water, coolant, and/or chemicals in 25 minutes or less.

For more information on Riveer systems, visit: www.Riveer.com

DISCLAIMER: Please note that this document is meant to be used for informational and guidance purposes and is not all-inclusive. This document may be used as a reference tool, but due to the changing stormwater regulations that vary from region-to-region, official laws and statutes should be consulted before submitting an official SWPPP.

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