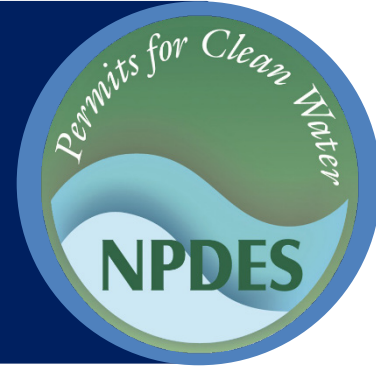




Stormwater Best Management Practice

Spill Prevention and Control Measures



Minimum Measure: Construction Site Stormwater Runoff Control
Subcategory: Good Housekeeping/Materials Management

Description

Liquid and solid products may enter the environment when they leak or spill from containers during use or transfer. These materials may then directly enter nearby storm drains or receiving waters, or stormwater may carry them there (WES, 2008). Federal requirements for the construction and development industry require that any stormwater discharge permit for construction sites include requirements to “minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures” (40 CFR §450.21(d)(3)). Most state Construction General Permits (CGPs) and EPA’s CGP require that stormwater pollution prevention plans (SWPPPs) identify measures to prevent, contain, clean up and dispose of material leaks or spills. Managers of small municipal separate storm sewer systems (MS4) should develop, implement and enforce a program to reduce stormwater pollutants from any construction activity within the MS4 that results in a land disturbance of greater than or equal to one acre, as well as any construction activity that is part of a larger common plan of development or sale that would disturb one acre or more. Managers should share these procedures with construction personnel as part of the program and examine those procedures when doing inspections/reviews.

Applicability

Spill prevention and control measures apply to construction sites that store or use materials such as pesticides, paints, cleaners, petroleum products, fertilizers, concrete wash, metals, solvents, soil stabilizers and binders, and contaminated groundwater. Construction staff should develop spill prevention and control measures for material storage areas, refueling stations (both mobile and stationary), material transfer locations, storm drain inlet and outlet locations, and waterways (WES, 2008). The spill prevention, control and countermeasure (SPCC) rule (40 CFR §112) covers every site with a total aboveground oil storage capacity greater than 1,320 gallons or a buried oil storage capacity greater than 42,000 gallons of petroleum



Skill kit at a construction site.

products. The SPCC rule requires every such site to prepare and implement an SPCC plan, which may differ from SWPPP requirements for spill prevention and control measures (U.S. EPA, 2007).

Siting and Design Considerations

As the name implies, spill prevention and control measures consist of pollution prevention measures and measures to control and minimize impact if a spill does occur. Prevention measures should be routinely implemented by construction staff while spill control measures are generally included within a spill plan such as an SPCC plan. All construction staff should be familiar with both prevention and control measures.

When developing spill prevention and control measures, construction staff should identify areas where spills are likely to occur, such as loading and unloading areas, storage and processing areas, places where dust or particulate matter is generated or handled, areas where

equipment maintenance and fueling occur, chemical storage areas, and areas designated for waste disposal. Construction staff should also evaluate the spill potential for stationary facilities—including manufacturing areas, warehouses, service stations, parking lots and access roads—during the project planning phase and re-evaluate that potential during each phase of construction. Designing projects to minimize or use the right amount of herbicides, fertilizers and petroleum-based fuels can also be an important way to reduce stormwater pollutants (PWD, 2018). If construction staff need any of these materials on-site, they should use them as quickly as possible upon delivery to minimize the risk of a spill.

The most successful spill prevention and control measures include both structural and operational controls. Routine prevention measures include (SPU, 2017a, 2017b; U.S. EPA, 2019):

- Recycling, reclaiming or reusing materials, thereby reducing the amount of process materials that are brought on-site.
- Installing leak detection devices, overflow controls and diversion berms.
- Installing inlet protection on storm drains.
- Performing preventative maintenance on storm tanks, valves, pumps, pipes and other equipment.
- Using material transfer procedures or filling procedures for tanks and other equipment that minimize spills.
- Substituting less toxic or non-toxic materials for toxic materials.
- Storing materials in covered areas and within adequate secondary containment structures.
- Leaving hazardous materials in original, labeled containers and keeping Safety Data Sheets on-site.
- Storing materials off the bare ground and away from vehicular traffic and drainage pathways.
- Maintaining a clearly labeled and prominently displayed spill kit that includes, at a minimum, absorbent pads, sorbent booms or socks, absorbent granular material, protective clothing (such as latex gloves and safety glasses), thick plastic garbage bags, and drain covers.
- Following good housekeeping practices at project sites, such as appropriately disposing of unwanted

or unused waste material and immediately cleaning up spills or debris.

In the event of a spill, it is critical that a plan and appropriate equipment be in place and responsible parties be identified to carry out control measures immediately. A spill plan, such as an SPCC plan, should include components such as (SPU, 2017a, 2017b; U.S. EPA, 2019):

- Identification of individuals responsible for implementing control measures as well as personnel to contact in case of a spill.
- Identification of spill response procedures for small, medium and worst-case discharges, as appropriate.
- Definition of safety measures for each kind of waste.
- Instructions for how to notify appropriate authorities, such as police and fire departments, hospitals, or municipal sewage treatment facilities, for assistance.
- Description of procedures approved by state and local governments for containing, diverting, isolating and cleaning up spills.
- Description of spill response equipment to use, including safety and cleanup equipment, location of spill kits, and proper disposal methods for used materials.

For any spill, construction staff should avoid the use of water for cleaning to prevent contaminated stormwater from reaching storm drains; dry spills can be swept up while wet spills can be contained and absorbed using the equipment included in standard spill kits.

Limitations

Training is necessary to ensure that all workers are aware of and knowledgeable about spill prevention and control measures. All staff on-site should receive training on spill prevention and control measures, including regular refresher training. Construction staff should make equipment and materials for cleanup readily accessible and mark them clearly so workers can follow procedures quickly and effectively.

Maintenance Considerations

Construction staff should update the spill prevention and control measures regularly to accommodate any changes to the site, procedures or responsible staff (this

may include a site diagram showing the locations of spill kits, drainage pathways and evacuation routes). They should regularly inspect areas where spills may occur to ensure that procedures are posted and cleanup equipment is readily available. They should also replace spill kit materials as soon as workers use them and ensure spill kits always remain easily accessible.

Effectiveness

Spill prevention and control measures can be highly effective at reducing the risk of surface and groundwater contamination; however, to ensure workers follow the procedures, construction staff should provide worker

training, appropriate materials and equipment for cleanup, and adequate staff time. If a spill occurs, prompt action is the most effective measure to limit environmental harm and cleanup costs.

Cost Considerations

Spill prevention and control measures can be inexpensive to implement; however, construction staff need adequate time and resources to properly handle and dispose of spills. Good housekeeping is the cheapest and most cost-effective way to control a spill. Once a spill has occurred, the cost of cleanup can be significant.

Additional Information

Additional information on related practices and the Phase II MS4 program can be found at EPA's National Menu of Best Management Practices (BMPs) for Stormwater website

References

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Water Environment Services (WES). (2008). *Erosion prevention and sediment control: Planning and design manual*.

Disclaimer

This fact sheet is intended to be used for informational purposes only. These examples and references are not intended to be comprehensive and do not preclude the use of other technically sound practices. State or local requirements may apply.