

SC-30 Outdoor Loading and Unloading

Description

The loading and unloading of materials usually occurs outdoors on docks or terminals. If materials are spilled, leak, or are lost during those activities, they may collect in the soil or on other surfaces and have the potential to be carried away by wind or stormwater runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move the materials. Implementation of the following protocols will prevent or reduce the discharge of pollutants to stormwater from outdoor loading and unloading of materials.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and best management practice (BMP) implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of material to rainfall whenever possible.
- Prevent stormwater run-on.
- Check equipment regularly for leaks.



Good Housekeeping

- Develop an operations plan that provides procedures for loading and unloading activities.
- Conduct loading and unloading activities in dry weather if possible.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Substitute Products

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered

Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance and Record Keeping	✓



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- ❑ Cover designated loading/unloading areas to reduce exposure of materials to rain.
- ❑ Consider placing a seal or door skirt between delivery vehicles and a building to prevent exposure of the materials to rain.
- ❑ Design loading and unloading areas to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading and unloading areas.
- ❑ Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks when feasible.
- ❑ Load and unload only in designated loading areas.
- ❑ Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip-collected materials must be disposed of properly.
- ❑ Pave loading areas with concrete instead of asphalt.
- ❑ Avoid placing storm drains inlets in the area.
- ❑ Grade and/or berm the loading and unloading area with drainage to a sump; regularly remove materials accumulated in the sump.



Spill and Leak Response and Prevention

- ❑ Keep your spill prevention, control, and countermeasure (SPCC) plan up to date or have an emergency spill cleanup plan readily available, as applicable.
- ❑ Contain leaks during transfer of liquid materials.
- ❑ Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all employees.
- ❑ Ensure that employees are familiar with the site's SPCC plan and proper spill cleanup procedures.
- ❑ Use drip pans or comparable devices when transferring oils, solvents, and paints.



Material Handling and Waste Management

- ❑ “Spot clean” leaks and drips routinely to prevent runoff of spillage.
- ❑ Do not pour liquid wastes into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.
- ❑ Do not put used or leftover cleaning solutions, solvents, or automotive fluids in the storm drain or sanitary sewer.

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- ❑ Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.
- ❑ Promptly transfer used fluids to the proper waste or recycling drums. Do not leave drip pans or other open containers lying around.
- ❑ Minimize the possibility of stormwater pollution from outside waste receptacles by doing at least one of the following:
 - ✓ Use only watertight waste receptacles and keep the lids closed.
 - ✓ Grade and pave the waste receptacle area to prevent run-on of stormwater.
 - ✓ Install a roof over the waste receptacle area.
 - ✓ Install a low containment berm around the waste receptacle area.
 - ✓ Use and maintain drip pans under waste receptacles.
- ❑ Post “No littering” signs.
- ❑ Perform work area cleanup and dry sweep after daily operations.



Employee Training Program

- ❑ Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- ❑ Have employees trained in spill containment and cleanup present during loading and unloading.
- ❑ Train employees in proper handling techniques during liquid transfers to avoid spills.
- ❑ Make sure forklift operators are properly trained on loading and unloading procedures.



Quality Assurance and Record Keeping

- ❑ Keep accurate maintenance logs that document activities performed, quantities of materials removed, and improvement actions taken.
- ❑ Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and what method was used to dispose of it.
- ❑ Establish procedures to complete logs and file them in the central office.
- ❑ Keep accurate logs of daily cleanup operations.

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Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing, and time limitations that preclude implementation of BMPs. Provided below are typical limitations and recommended work-arounds.

- Space and time limitations might preclude all transfers from being performed indoors or under cover.
 - ✓ Designate specific areas for outdoor loading and unloading.
 - ✓ Require employees to understand and follow spill and leak prevention BMPs.
- It may not be possible to conduct transfers only during dry weather.
 - ✓ Limit exposure of materials and equipment to rainfall to the maximum extent practicable.
 - ✓ Require employees to understand and follow spill and leak prevention BMPs.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

Many facilities already have indoor or covered areas for loading and unloading activities and will require no additional capital expenditures.

If outdoor activities are required, construction of berms or other means to retain spills and leaks may require appropriate constructed systems for containment. These containment areas may require significant new capital investment.

Capital investments will likely be required at some sites if cover and containment facilities are inadequate and can vary significantly depending upon site conditions.

Maintenance

Most of the operations and maintenance (O&M) activities associated with implementing this BMP are integrally linked to routine operations as previously described. Therefore, additional O&M is not required.

- Conduct regular inspections and make repairs and improvements as necessary.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area. Do not wash with water.

Supplemental Information

Loading and Unloading of Liquids

- Loading and unloading of liquids should occur in a manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer

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or treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to aboveground and underground storage tanks, the following procedures should be used:
 - ✓ The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
 - ✓ The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.
 - ✓ The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.

- For transfer from rail cars to storage tanks that must occur outdoors, use the following procedures:
 - ✓ Place drip pans at locations where spillage may occur such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.
 - ✓ Drip pan systems should be installed between the rails to collect spillage from the tank cars.

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References and Resources

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