

US EPA Materials Management

Description

Responsible management of common chemicals, such as fertilizers, solvents, paints, cleaners, and automotive products, can significantly reduce polluted runoff (WEF and ASCE, 1998). Such products must be handled properly in all stages of development, use, and disposal. Materials management entails the selection of the individual product, the correct use and storage of the product, and the responsible disposal of associated waste(s).

Applicability

In many cases, industries can implement simple housekeeping practices in order to manage materials more effectively. Proper management reduces the likelihood of accidental spills or releases of hazardous materials during storm events. In addition, health and safety conditions at the facility will improve.

Some simple practices for managing materials are improving maintenance of industrial machinery, establishing material storage and inventory controls, improving routine cleaning and inspection of facilities where materials are stored or processed, maintaining organized workplaces, and educating employees about the benefits of the above practices (USEPA, 1992).

Maintenance Considerations

Maintenance associated with materials management should be designed to minimize the amounts of materials used and the wastes generated by industrial processes. Procedures for operation and maintenance can be easily integrated into an industry's management plan. Simple processes, such as routine cleaning of work spaces, proper collection and disposal of wastes, maintenance of machinery, regular inspections of equipment and facilities, and training employees to respond to spills or leaks, have significant effects on reducing the potential to pollute stormwater runoff.

Another consideration is regular material inventories [PDF - 109 KB - 4 pp]. Such inventories reduce the occurrence of overstocking hazardous materials, increase knowledge about what hazardous materials are present and how they are stored, and provide documentation of proper handling of hazardous materials. An inventory of hazardous materials present at a particular facility consists of three major steps (USEPA, 1992):

- Identify all hazardous and nonhazardous substances present at a facility. This can be accomplished by reviewing all purchase orders for the facility and walking through the facility itself. Compile a list of all chemicals present at a facility and obtain a Material Safety Data Sheet (MSDS) for each one.
- Label all containers with the name of the chemical, unit number, expiration date, handling instructions, and health or environmental hazards. Much of this information will be found on the MSDS. Often, insufficient labeling leads to improper handling or disposal of hazardous substances.
- Make special note on the inventory of hazardous chemicals that require special handling, storage, or disposal.

Cost Considerations

The major costs of these BMPs can be attributed to additional labor. Depending on the extent of the program, varying amounts of staff hours will be required for the necessary education of municipal employees, local businesses, and the public. In addition, posters and bulletin boards that encourage the proper management of materials should be displayed throughout the facility.



Secondary containment should be used to prevent materials from contaminating stormwater.

References

WEF and the ASCE. 1998. Urban Runoff Quality Management. WEF Manual of Practice No. 23 and ASCE Manual and Report on Engineering Practice No. 87. Water Environment Federation, Technical Practice Committee, Water Quality and Ecology Subcommittee, Alexandria, VA, and American Society of Civil Engineers, Urban Water Resources Research Council, Reston, VA.

USEPA. 1992. Stormwater Management for Industrial Activities. U.S. Environmental Protection Agency, Office of Water, Washington, DC.