

4.0 Material and Waste Controls

4.1 Chemical Management

Material and Waste Control

Description: Chemical management addresses the potential for stormwater to be polluted with chemical materials and wastes that are used or stored on a construction site. The objective of chemical management is to minimize the potential of stormwater contamination by construction chemicals through appropriate recognition, handling, storage, and disposal practices.

<p style="text-align: center;"><u>KEY CONSIDERATIONS</u></p> <p>DESIGN CRITERIA:</p> <ul style="list-style-type: none"> • Designate a person responsible for chemical management • Minimize the amount of chemicals and waste stored onsite • Provide secondary containment that's 110 percent of the largest container in the containment • Label all containers • Prohibit the discharge of washout water • Train workers in proper procedures • Provide timely removal of waste materials <p>LIMITATIONS:</p> <ul style="list-style-type: none"> • Not intended to address site-assessment and pre-existing contamination • Does not address demolition activities and potential pre-existing materials, such as lead and asbestos • Does not address contaminated soils • Does not address spill and leak response procedures • Does not address chemicals associated with vehicle and equipment management <p>MAINTENANCE REQUIREMENTS:</p> <ul style="list-style-type: none"> • Inspect regularly • Check for proper storage and evidence of leaks and spills • Make sure all containers are labeled • Check waste containers and dispose of the waste when 90 percent full • Verify procedures are being followed • Train new employees and regularly re-train all employees 	<p style="text-align: center;"><u>APPLICATIONS</u></p> <p>Perimeter Control</p> <p>Slope Protection</p> <p>Sediment Barrier</p> <p>Channel Protection</p> <p>Temporary Stabilization</p> <p>Final Stabilization</p> <div style="border: 1px solid black; padding: 2px; margin: 2px 0;"> <p>Waste Management</p> </div> <div style="border: 1px solid black; padding: 2px; margin: 2px 0;"> <p>Housekeeping Practices</p> </div>
<p style="text-align: center;"><u>TARGETED POLLUTANTS</u></p> <ul style="list-style-type: none"> <input type="radio"/> Sediment <input checked="" type="radio"/> Nutrients & Toxic Materials <input checked="" type="radio"/> Oil & Grease <input type="radio"/> Floatable Materials <input checked="" type="radio"/> Other Construction Wastes 	<p style="text-align: center;"><u>IMPLEMENTATION CONSIDERATIONS</u></p> <ul style="list-style-type: none"> <input type="radio"/> Capital Costs <input type="radio"/> Maintenance <input checked="" type="radio"/> Training <input type="radio"/> Suitability for Slopes > 5% <p>Other Considerations:</p> <ul style="list-style-type: none"> • <i>TCEQ regulations for hazardous waste</i>

4.1.1 Primary Use

These management practices, along with applicable OSHA, EPA, and TCEQ requirements, are implemented at construction sites to prevent chemicals, hazardous materials, and their wastes from becoming stormwater pollutants.

4.1.2 Applications

Chemical management is applicable on all construction sites where chemicals and hazardous materials are stored or used and could result in pollutants being discharged with stormwater. Many chemicals, such as paints, grease, concrete curing compounds, and pesticide are present at most construction sites. Chemical management is most effective when used in conjunction with controls in [Section 4.8 Spill and Leak Response Procedures](#).

Management of vehicle and equipment maintenance chemicals is applicable to all construction activities. These chemicals are the most common ones on construction sites; plus, there are specific stormwater permit requirements for vehicle and equipment maintenance. For these reasons, the management of chemicals associated with vehicles and equipment are found in [Section 4.10 Vehicle and Equipment Maintenance](#).

Chemical management techniques are based on proper recognition, handling, and disposal practices by construction workers and supervisors. Key elements are education and modification of workers' behavior and provisions for safe storage and disposal. Cooperation and vigilance is required on the part of supervisors and workers to ensure that the procedures are followed.

The following list (not all inclusive) gives examples of targeted chemicals:

- Paints
- Solvents
- Stains
- Wood preservatives
- Cutting oils
- Greases
- Roofing tar
- Pesticides, herbicides, & fertilizers
- Concrete curing compound

It is not the intent of chemical management to supersede or replace normal site assessment and remediation procedures. Significant spills and/or contamination warrant immediate response by trained professionals. Chemical management shall be applied in combination with criteria in [Section 4.8 Spill and Leak Response Procedures](#).

4.1.3 Design Criteria

- Construction plan notes shall require controls for all chemicals, hazardous materials, and their wastes that are potentially exposed to precipitation or stormwater runoff.
- Show the location of chemical and hazardous waste storage and secondary containment on the drawings, or require the contractor to add this information.
- The contractor should be required to designate a site superintendent, foreman, safety officer, or other senior person who is onsite daily to be responsible for implementing chemical management.
- Specify use of the least hazardous chemical to perform a task when alternatives are available. To the extent possible, do not use chemicals that are classified as hazardous materials or that will generate

a hazardous waste. A hazardous material is any compound, mixture, solution, or substance containing a chemical listed on the EPA's *Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act* (EPA 550-B-01-003, October 2001), available at:

<http://www.epa.gov/ceppo/pubs/title3.pdf>

Chemical and Hazardous Material Storage

- As much as possible, minimize the exposure of building materials, building products, landscape materials, fertilizers, pesticides, herbicides, detergents, and other materials to precipitation and stormwater runoff.
- Chemicals and hazardous materials shall be stored in their original, manufacturers' containers, inside a shelter that prevents contact with rainfall and runoff.
- The amount of chemicals and hazardous materials stored onsite shall be minimized and limited to the materials necessary for the current phase of construction.
- Material Safety and Data Sheets (MSDSs) shall be available for all chemicals used or stored onsite.
- Chemical and hazardous materials shall be stored a minimum of 50 feet away from inlets, swales, drainage ways, channels, and other waters, if the site configuration provides sufficient space to do so. In no case shall material and waste sources be closer than 20 feet from inlets, swales, drainage ways, channels, and other waters.
- Use secondary containment controls for all hazardous materials. Containment shall be a minimum size of 110 percent of the largest chemical container stored within the containment.
- If an earthen pit or berm is used for secondary containment, it shall be lined with plastic or other material that is compatible with the chemical being stored.
- Chemical and hazardous material storage shall be in accordance with Federal and State of Texas regulations and with the municipality's fire codes.
- Storage locations shall have appropriate placards for emergency responders.
- Containers shall be kept closed except when materials are added or removed.
- Chemicals shall be dispensed using drip pans or within a lined, bermed area or using other spill/overflow protection measures.

Washout Procedures

- Many chemicals (e.g. stucco, paint, form release oils, curing compounds) used during construction may require washing of applicators or containers after use. The discharge of this wash water is prohibited.
- Wash water shall be collected in containers, labeled, and classified for correct waste disposal.
- A licensed waste hauler shall be used for wash water.

Chemical and Hazardous Waste Handling

- Ensure that adequate waste storage volume is available.
- Ensure that waste collection containers are conveniently located and compatible with the waste chemicals.
- Waste containers shall have lids and be emptied or hauled for disposal when they are 90 percent full or more frequently.
- Segregate potentially hazardous waste from non-hazardous construction waste and debris.

- Do not mix different chemical wastes. First, dangerous reactions may result. Second, all of the waste will be classified as the most hazardous waste in the container and will increase disposal costs.
- Clearly label all chemical and hazardous waste containers to identify which wastes are to be placed in each container.
- Based on information in the Material Safety Data Sheet, ensure that proper spill containment material is available onsite and maintained near the storage area.
- Do not allow potentially hazardous waste to be stored on the site for more than 90 days.
- Enforce hazardous waste handling and disposal procedures.

Disposal Procedures

- Regularly schedule waste removal to minimize onsite storage.
- Use only licensed waste haulers.
- For special and hazardous wastes, use licensed hazardous waste transporter that can classify, manifest and transport the special or hazardous wastes for disposal.
- Where possible, send wastes such as used oil to a recycler instead of a disposal facility.
- No chemical waste shall be buried, burned or otherwise disposed of onsite.

Education

- Instruct workers on safe chemical storage and disposal procedures.
- Instruct workers in identification of chemical pollutants and proper methods to contain them during storage and use.
- Educate workers of potential dangers to humans and the environment from chemical pollutants.
- Educate all workers on chemical storage and disposal procedures.
- Have regular meetings to discuss and reinforce identification, handling and disposal procedures (incorporate in regular safety seminars).
- Establish a program to train new employees.

Quality Control

- Designated personnel shall monitor onsite chemical storage, use, and disposal procedures.
- Educate and if necessary, discipline workers who violate procedures.
- Retain trip reports and manifests that document the recycling or disposal location for all chemical, special, and hazardous wastes that all hauled from the site.

4.1.4 *Design Guidance and Specifications*

National guidance for response procedures are established by the Environmental Protection Agency (EPA) in the Code of Federal Regulations (CFR). Specific sections addressing spills are governed by:

- 40 CFR Part 261 Identification and Listing of Hazardous Waste.
- 40 CFR Part 262 Standards Applicable to Generators of Hazardous Waste.
- 40 CFR Part 263 Standards Applicable to Transporters of Hazardous Waste.
- 49 CFR Parts 171-178 of the Transportation Hazardous Materials Regulations.

Guidance for storing, labeling, and managing hazardous waste in the State of Texas are established by the Texas Commission on Environmental Quality (TCEQ) in the Texas Administrative Code Title 30, Chapter 335, Industrial Solid Waste and Municipal Hazardous Waste.

No specification for chemical management measures is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.1.5 Inspection and Maintenance Requirements

Chemical management measures should be inspected regularly (at least as often as required by the TPDES Construction General Permit) for proper storage and evidence of leaks or spills. Check that all chemicals, hazardous materials, and wastes are properly stored and labeled. If not stored properly, take corrective action, and reinforce procedures through re-education of employees.

If leaks or spills have occurred, check that proper clean up and reporting procedures have been followed. If procedures have not been followed, take corrective action. Check that all employees have been trained in spill and leak procedures as detailed in [Section 4.8 Spill and Leak Response Procedure](#).