CHAPTER 10 – SOURCE CONTROL

Chapter Organization

10.1 PURPOSE

This chapter of the Central Oregon Stormwater Manual concentrates on prevention of water-quality impacts from potential pollutant sources. It was developed to assist owners, businesses and project proponents (developers, for example) in selecting appropriate Best Management Practices (BMPs) to control toxic and conventional pollutants in stormwater generated from urban sources.

Water pollutants are generally defined as hazardous or toxic substances that are either water soluble or transportable, or that are liquids under normal conditions. The site characteristics and uses in this chapter have been identified as potential sources for chronic loadings or acute releases of pollutants such as oil and grease, hydrocarbons, heavy metals, toxic compounds, solvents, abnormal pH levels, nutrients, organics, bacteria, chemicals, and suspended solids.

The main source control BMPs are structures or practices that prevent pollutants from entering stormwater through physical separation and/or management of activities that produce pollutants.

10.1.1 GOALS AND OBJECTIVES OF SOURCE CONTROL

The goal of source control is to prevent pollutants from entering stormwater in the first place. This goal is met when the following objectives are accomplished:

- Prevent stormwater pollution by eliminating pathways that may introduce pollutants into stormwater;
- Protect soil, groundwater, and surface water by capturing acute releases and reducing chronic contamination of the environment;
- Direct contaminated non-stormwater discharges (such as flows from vehicle washing facilities) to an approved sanitary system or authorized pre-treatment system;
- Safely contain spills onsite, avoiding preventable discharges to groundwater or surface water bodies; and
- Emphasize structural controls over operational procedures. Structural controls are considered to provide more permanent and reliable source control because they are not operator dependant. Any proposals for operation-based source controls need to describe and assure the long-term viability of the maintenance program.

10.2 APPLICABILITY

As of March 2007, the City of Bend is the only NPDES Phase II permitted community in Central Oregon. All commercial and industrial projects located within NPDES Phase II permitted jurisdictions are required to implement applicable source controls. However, whether or not a community is permitted under the NPDES Phase II regulations, does not

relieve the project proponent from his/her duties to prevent pollutant release into stormwater.

The pollutant sources and source control BMPs outlined in this chapter have been adapted from the Portland Bureau of Environmental Services *Stormwater Management Manual* (2004).

The requirements of this chapter are in addition to the applicable water quality treatment, flow control, and erosion and sediment control measures outlined in previous chapters of this manual. Conformance with this chapter's requirements does not relieve the applicant from other local, state, or federal regulatory or permit requirements.

10.2.1 SITE USES THAT REQUIRE SOURCE CONTROL

All new developments, redevelopments, or tenant improvements, proposing the following site uses and characteristics are subject to source control and must implement the BMPs outlined in Section 10.3:

- Fuel dispensing facilities;
- Above ground storage of liquid materials;
- Soils waste storage areas, containers, and trash compactors;
- Exterior storage of bulk materials;
- Material transfer areas/loading docks;
- Equipment and/or vehicle washing facilities;
- Covered vehicle parking areas;
- Vehicle and equipment maintenance areas;
- Landscaped areas with pools, spas, or fountain discharges; and
- Food service equipment cleaning areas.

Only those areas of a structure or project site that are being modified or disturbed with the proposed construction are required to make the structural changes identified in this manual. Detailed descriptions of these site uses and characteristics can be found in each applicable section below. This chapter also includes a brief discussion of the added guidelines for development on land with suspected or known contamination.

10.3 STRUCTURAL BMPS FOR COMMON SITE USES

The following sections outline the structural BMPs for seven common site uses. Applicants are required to address all of the site characteristics and uses on their site. For example, if a development includes both a fuel dispensing area and a vehicle washing facility, the source controls in Sections 10.3.2 and 10.3.7 will apply.

10.3.1 BASIC REQUIREMENTS

The following basic requirements apply to all site uses covered in this section.

Spill Response Supplies

Spill response supplies such as absorbent material and protective clothing must be available at all potential spill areas. Spill response supplies must be clearly marked and located near the activity areas. Supplies must be readily accessible to employees, but safe from vandalism. More than one spill response kit may be necessary to accommodate larger activity areas. Employees should be familiar with the site's operations and maintenance plan and/or proper spill cleanup procedures.

Signage

Informational signage is required for some site uses and activities that have the potential to contaminate stormwater. Signage requirements for specific activities are noted in Sections 10.3.2 through 10.3.8. Signage addresses good housekeeping rules and provides emergency response measures in case of an accidental spill.

When signage is required, it shall conform to the following guidelines:

- Signs shall be plainly visible from all activity areas. More than one sign may be needed to accommodate larger activity areas;
- Signs shall be water resistant;
- Signs shall include the following information:
  - Safety precautions,
  - Spill response procedures (i.e. "Turn the valve located at…"), and
  - Emergency contact telephone numbers
- Signs may need to be in more than one language to effectively communicate with employees and delivery personnel; and
- All onsite storm drain inlets shall be clearly marked, "No Dumping, Drains to [Groundwater/River/Stream]" or equivalent using marking methods approved by the local jurisdiction.

Cover

Some site uses require that the area be covered with a permanent canopy, roof, or awning, so precipitation cannot come in contact with the activity area. This creates a hydraulic isolation of the activity area. Cover requirements for specific activities are noted in Sections 10.3.2 through 10.3.8. When cover is required, it shall meet the following requirements:

- Rainfall shall be directed from the cover to an appropriate stormwater disposal point, avoiding contact with the activity area, wherever possible.
- Covers 10 feet high or less shall have a minimum overhang of 3 feet on each side. The overhang shall be measured relative to the perimeter of the hydraulically isolated activity area.

- Covers higher than 10 feet shall have a minimum overhang of 5 feet on each side. The overhang shall be measured relative to the perimeter of the hydraulically isolated activity area.

Building Plumbing

Proper drainage of water used within or as part of a building is important for preventing pollutants from contaminating stormwater. The following drainage areas may not discharge to the storm drain system:

- Interior floor drains;
- Fire sprinkler test water;
- Boiler drain lines; and
- Air compressor or air conditioner condensate drain lines.

The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

Stormwater and Wastewater Discharge Permits

Some facilities may be required to obtain a State of Oregon NPDES industrial stormwater permit before discharging to a storm sewer system or to waters of the state. Applicants may also be required to obtain an industrial wastewater permit or other approval before being allowed to discharge to the sanitary sewer system. Facilities subject to these requirements are generally commercial or industrial. Typical discharges include process wastewater, cooling water, or other discharges generated by some of the sources in this chapter that drain to a sewer system (storm, sanitary, or combined). For more information, contact the sanitary sewer authority and reference the industrial pretreatment program.

If a permit is required, the industrial permit application process will be independent of the building permit application or development review process. While industrial permitting may not be applicable at the time of building permit submittal, changes in regulations could trigger industrial permitting requirements in the future.

Oregon DEQ Underground Injection Control (UIC) Regulations

The Oregon DEQ identifies drywells, drill holes, sumps, and infiltration trenches as "Class V Injection Wells" under the federal UIC Program. Because the UIC Program states that these types of wells may have a direct impact on groundwater, registration and rule-authorization or permitting with DEQ is required. Site uses that are classified as high risk under this chapter are generally not allowed to use UICs for stormwater disposal. Consult DEQ guidelines (https://www.deq.state.or.us) for additional information.

Other Local, State and Federal Regulations

The requirements presented in this chapter do not exclude or replace the requirements of other applicable codes or regulations, such as the hazardous substances storage requirements of articles 79 and 80 of the Oregon State Fire Code; the spill prevention control and containment (SPCC) regulations of 40 CFR 112 (EPA); the Resource

Conservation and Recovery Act (RCRA); or any other applicable local, state, or federal regulations or permit requirements.

10.3.2 FUEL DISPENSING FACILITIES

The requirements in this section apply to all development where vehicles, equipment, or tanks are refueled on the premises; whether a large-sized gas station, a single-pump maintenance yard, or a small-sized fuel tank. A fuel dispensing facility is defined as the area where fuel is transferred from bulk storage tanks to vehicles, equipment, and/or mobile containers (including fuel islands, above- or below-ground fuel tanks, fuel pumps, and the surrounding pad).

Exceptions

Propane tanks are exempt from these requirements.

Existing fueling areas are not required to install source controls identified in this section if the scope of work is limited to:

- A new canopy installation over an existing fuel pad that is not being upgraded; or
- An underground tank replacement for compliance with state regulations; or
- The replacement of a fuel pump on an existing fuel pad that is not being upgraded.

If any improvements are made to the fueling activity area and/or pad, such as regrading or surface replacement, retrofits are required to comply with all fueling activity source controls identified in this chapter.

Cover

The fuel dispensing area shall be covered with a permanent canopy, roof, or awning as described in the Basic Requirements in Section 10.3.1. In addition to the basic cover requirements in section 10.3.1, the cover should extend at least one foot beyond the length at which the hose and nozzle assembly of each fuel dispenser may be operated.

The requirement to cover the fuel dispensing area can be waived by the local jurisdiction if the fuel dispensing area is generally used to service oversized equipment (e.g., cranes) that cannot maneuver under a roof or canopy.

Pavement

A paved fueling pad of concrete or other equivalent smooth impervious surface shall be placed under and around the fueling activity area. Sizing of the paved area shall be adequate to cover the activity area, including placement and number of the vehicles or pieces of equipment to be fueled by each pump. Fuel pumps shall be located a minimum of 7 feet from the edge of the paved fueling pad.

Drainage

The paved area beneath the cover shall be hydraulically isolated through grading, berms, or drains. This will prevent uncontaminated stormwater from running onto the

area and carrying pollutants away. Drainage from the hydraulically isolated area shall be directed to an approved sanitary sewer system or disposed of according to local state and federal waste disposal guidelines.

Surrounding runoff shall be directed away from the hydraulically isolated fueling pad to a stormwater disposal point that meets all stormwater management requirements of this manual and other applicable code requirements.

Signage

Signage shall be provided at the fuel dispensing area and shall be plainly visible from all fueling activity areas. Detailed signage information is located in Section 10.3.1.

Spill Control Manhole

A spill control manhole shall be installed on the discharge line of the fueling pad. The manhole shall be located on private property upstream of the connection to the approved sanitary sewer system. Spill control manholes consist of a simple underground manhole with a "T" outlet designed to trap small spills. Oil rises to the surface and can be periodically removed.

The T section shall extend 18 inches below the outlet elevation and 60 cubic feet of dead storage volume shall be provided below the outlet elevation for storage of oil, grease, and solids. A typical spill control manhole detail is provided in Figure 10-1. A maintenance plan consistent with Chapter 12 shall also be prepared for the site.

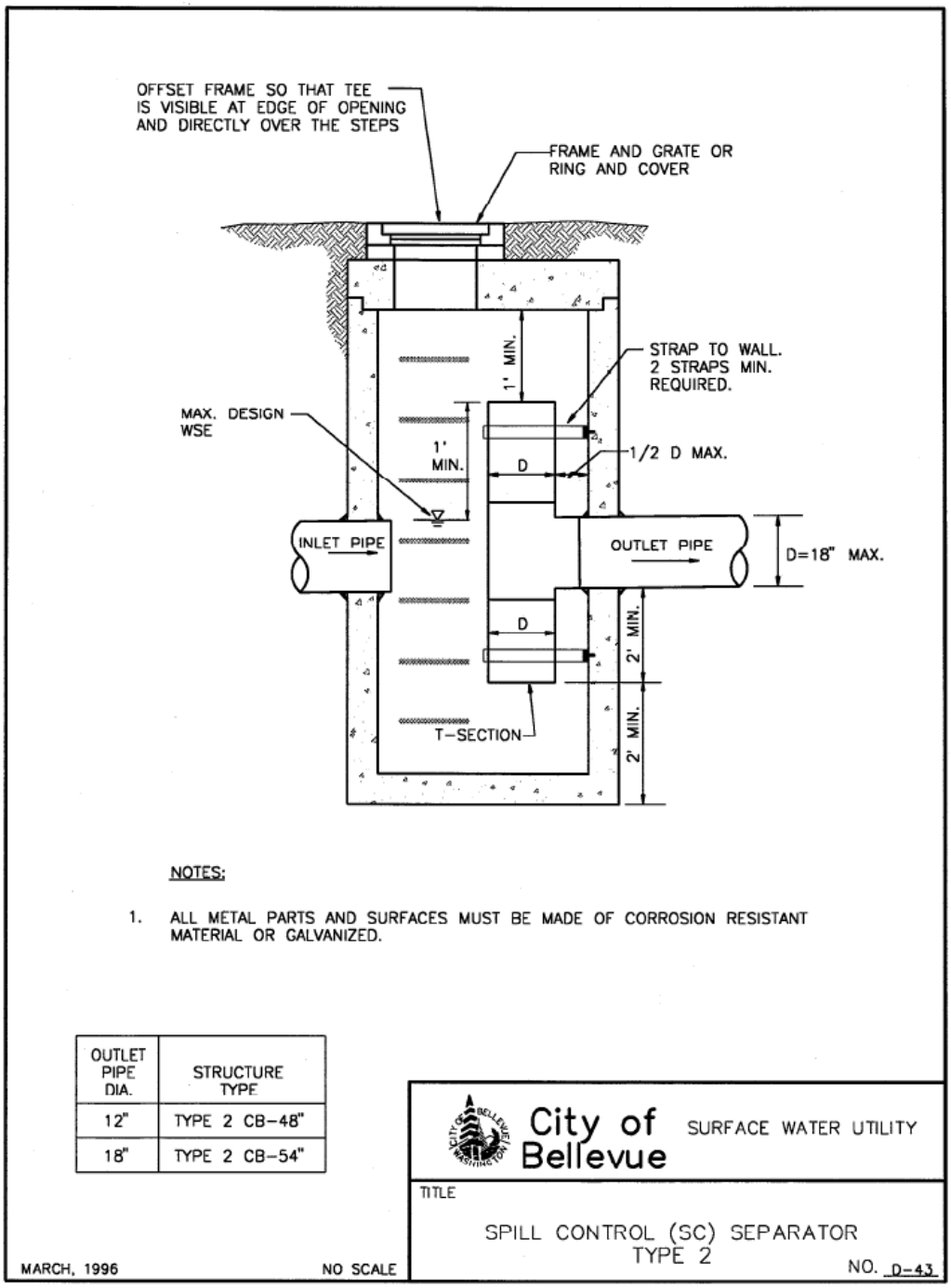

Figure 10-1 Spill Control Manhole

Shut-off Valves

Shut off valves are required to protect surface waters or onsite infiltration facilities from spill risks from chemicals and other constituents that provide a danger for widespread contamination, system damages, or risk to the public health. All valves shall be installed and maintained per the manufacturer's recommendations.

Fueling pads require a valve downstream of the spill control manhole. These valves shall be kept closed, and opened only to allow incidental drainage activities that do not pose a threat or risk to the disposal point system. The valve shall be closed immediately after drainage activities are completed.

Traffic pathways that surround fueling pads are considered high-risk areas and will require a valve on the storm drainage system. Valves installed on storm drainage systems shall be installed on private property downstream of the exposed area's collection system and upstream of any infiltration facilities. These valves shall be left open to facilitate stormwater flows during normal conditions, and immediately closed in the event of a spill.

Bulk Fuel Terminals

Bulk fuel terminals, also known as tank farms, require the following:

- Secondary containment equal to 110 percent of the product's largest container or 10 percent of the total volume of product stored, whichever is larger.
- A separate containment area for all valves, pumps, and coupling areas, with sub-bermed areas either in front of or inside the main containment areas. These sub-bermed areas shall have rain shields and be directed to a temporary holding facility for proper disposal. This disposal may require a water pollution control facility (WPCF) permit from the Water Quality Division of DEQ.
- An impervious floor within all containment areas. Floors shall be sealed and maintained to prevent spills from contaminating the groundwater.
- Truck loading and off-loading areas. These areas shall follow cover, pavement, drainage, spill control, and shut-off valve requirements identified for fuel dispensing facilities.
- Shut-off valves installed for the drainage of the tank yard. Valves installed for the drainage of the truck pad and sub-bermed containment areas shall be installed on the sanitary waste line downstream of the spill control manhole.
- A batch discharge authorization before draining a containment area. This authorization will determine appropriate disposal methods, identify pretreatment requirements (if applicable), and authorize the discharge. Pretreatment may be required for oil and grease removal, and testing may be required to establish the specific characteristics of the discharge.

Additional Requirements

Fuel tank installations may be subject to additional requirements from the local jurisdiction, building department, fire department or other agency. Underground fuel tanks less than 4,000 gallons in size are subject to additional permitting requirements by DEQ, and tanks larger than 4,000 gallons are referred to the federal Environmental Protection Agency (EPA). For technical questions and permitting, contact DEQ's Underground Storage Tank Permitting Department. The applicant is responsible for obtaining proper permits and complying with all applicable codes.

10.3.3 ABOVE-GROUND STORAGE OF LIQUID MATERIALS

The requirements in this section apply to all development where there is any exterior storage of liquid chemicals, food products, waste oils, solvents, process wastewaters, or petroleum products in above-ground containers, in total quantities of 50 gallons or more. These requirements also apply to interior storage areas or process tanks that may overflow, spill or leak to the exterior. This includes both permanent storage and temporary storage areas. Underground storage tanks or installations requiring a WPCF permit are exempt from these requirements, but must go through DEQ's WPCF permit process.

Containment

Liquid materials shall be stored and contained in such a manner that if the container(s) is ruptured, the contents will not discharge, flow, or be washed into a stormwater system. A containment device and/or structure for accidental spills shall have enough capacity to capture a minimum of 110 percent of the product's largest container or 10 percent of the total volume of product stored, whichever is larger.

Double-walled containers are generally exempt from these spill containment requirements.

Janitorial cleaning and office supplies are generally exempt from spill containment measures provided the total quantity does not exceed 100 pounds net weight or 15 gallons net volume. These supplies shall be packaged for consumer use in containers of five gallons or less or having a net weight of less than 30 pounds per container. The exemption does not apply to cleaners or solvents used for cleaning machinery or motor vehicle machine parts.

Cover

Storage containers (other than tanks) shall be completely covered with a permanent canopy, roof, or awning as described in the Basic Requirements in Section 10.3.1.

Pavement

The storage area shall be paved with asphalt, concrete, or equivalent smooth impervious surface and shall meet all applicable building code requirements. Sizing of the paved areas shall be adequate to cover the area intended for storage.

Drainage

All paved storage areas shall be hydraulically isolated through grading, berms, or drains to prevent uncontaminated stormwater run-on to a storage area.

Significant amounts of precipitation are not expected to accumulate in covered storage areas, and drainage facilities are not required for the contained area beneath the cover. If the applicant elects to install drainage facilities, the drainage from the hydraulically isolated area shall be directed to an approved sanitary sewer or authorized pretreatment facility.

Signage

Signage shall be provided at the liquid storage area and shall be plainly visible from all surrounding activity areas. Detailed information is located in Section 10.3.1.

Additional Requirements

A shut-off valve may be required for the covered storage area if the applicant elects to install drainage facilities to an approved sanitary sewer. The local jurisdiction will make this determination based on the type of material stored and the proposed system receiving the discharge.

Storage of hazardous materials may be subject to additional requirements. Consult the local jurisdiction for additional guidelines.

Storage of reactive, ignitable, or flammable liquids shall comply with the Uniform Fire Code as adopted by the State of Oregon. Source controls presented in this section are intended to complement, not conflict with, current fire code requirements. None of these requirements shall exclude or supersede any other requirements in this manual, other local permit requirements, or state and federal laws pertaining to water quality.

Tank farms shall follow the criteria established for bulk fuel terminals in Section 10.3.2. Exceptions may be granted, based on the product being stored.

10.3.4 SOLID WASTE STORAGE AREAS, CONTAINERS, AND TRASH COMPACTORS

The requirements in this section apply to all commercial and industrial development with facilities that store solid wastes (both food and non-food wastes). This section also applies to multifamily residential sites of three or more units if a shared trash collection area is proposed. Solid waste containers include but are not limited to compactors, dumpsters, and garbage cans. Requirements of this section also apply to activity areas used to collect and store refuse or recyclable materials, such as can or bottle return stations and debris collection areas.

The requirements of this section do not apply to single-family homes or debris collection areas used for the temporary storage of wood pallets or cardboard.

Cover

A permanent canopy, roof, or awning shall be provided to cover the solid waste storage activity area meeting the requirements of Section 10.3.1. Cover measures are not required for compactor areas if they are part of a closed-loop system approved by the local jurisdiction.

The local jurisdiction may waive this cover requirement if the proposed storage area has a low potential to pollute stormwater and will be covered by an alternate method, such as a sealing lid.

Pavement

A paved waste storage area is required when a structural cover or trash compactor is used. The area shall be paved with asphalt, concrete, or equivalent smooth impervious surface and meet all applicable building code requirements. Sizing of the paved area shall adequately cover the activity area intended for refuse storage, or the trash compactor(s) and associated equipment.

Isolation

Hydraulic isolation shall be provided for the solid waste storage activity area to prevent uncontaminated stormwater runoff from entering the area and carrying pollutants away. Isolation can be achieved by reverse grading at the perimeter of an activity area, perimeter curbing or berming, or the use of area drains to collect and divert runoff. Runoff occurring outside the hydraulically isolated area shall be directed to a stormwater disposal point that meets all applicable code requirements.

Solid waste storage areas shall be located away from occupied buildings to discourage pests from entering the buildings. This helps eliminate the need and use of pesticides.

Drainage

Drainage shall be provided for the hydraulically isolated solid waste storage area and directed to an approved sanitary sewer, authorized pretreatment facility, or a dead-end vault. A dead-end vault is required for those areas that may be subject to refuse or suspected pollutants that pose a public risk if the structural integrity of the trash receptacle is damaged or if its contents are exposed to rainfall.

Additional Requirements

Multifamily developments with shared trash areas may be allowed to drain to the site's privately owned and operated water quality treatment facility if gravity service to the sanitary sewer system is not approved.

10.3.5 EXTERIOR STORAGE OF BULK MATERIALS

The requirements of this section apply to developments that stockpile or store materials (raw, waste, or finished) in outdoor containers or piles that may erode or have negative stormwater impacts. The materials are separated into three categories, based on risk assessments for each material stored. The general material types in each category are shown in Table 10-1.

TABLE 10-1
MATERIAL RISK CATEGORIES

High-Risk Materials	Low-Risk Materials	Exempt Materials
• Recycling materials with potential effluent • Corrosive materials (e.g., lead-acid batteries) • Storage and processing of food items • Chalk/gypsum products • Feedstock/grain • Material by-products with potential effluent • Fertilizer • Pesticides • Lime/lye/soda ash • Animal/human wastes	• Recycling materials without potential effluent • Scrap or salvage goods • Metal • Sawdust/bark chips • Sand/dirt/soil (including contaminated soil piles) • Material by-products without potential effluent • Unwashed gravel/rock • Compost • Asphalt	• Washed gravel/rock • Finished lumber • Rubber and plastic products (hoses, gaskets, pipe, etc.) • Clean concrete • Products (blocks, pipe, etc.) • Glass products (new, non-recycled) • Inert products

Materials with any of the following characteristics are exempt from the requirements of this section:

- Have no measurable solubility or mobility in water and no hazardous, toxic, or flammable properties.
- Exist in a gaseous form at ambient temperature.
- Are contained in a manner that prevents contact with stormwater (excluding pesticides and fertilizers).

Cover

Low-risk: Materials shall be covered with a temporary plastic film or sheeting at a minimum.

High-risk: Materials shall be permanently covered with a canopy or roof meeting the requirements of Section 10.3.1.

Pavement

Low-risk: material storage areas are not required to be paved.

High-risk: material storage areas shall be paved beneath the structural cover. Sizing of the paved area shall adequately cover the activity area intended for storage.

Drainage

Low-risk: Material storage areas are typically allowed in areas served by standard stormwater management systems. However, all erodible materials being stored must be protected from rainfall with appropriate cover measures.

If materials are erodible, a structural containment barrier shall be placed on at least three sides of every stockpile to prevent run-on of uncontaminated stormwater into the storage area. If the area under the stockpile is paved, the barrier can be constructed of asphalt berms, concrete curbing, or retaining walls. If the area under the stockpile is unpaved, sunken retaining walls or ecology blocks can be used.

High-risk: Material storage areas shall be hydraulically isolated through grading, structural containment berms or walls, or perimeter drains to prevent uncontaminated stormwater from running onto the area. Drainage facilities are not required for the contained area beneath the cover. If the applicant elects to install drainage facilities, the drainage from the hydraulically isolated area shall be directed to an approved sanitary sewer or authorized pretreatment facility.

Additional Requirements

Storage of pesticides and fertilizers may need to comply with additional local, state, or federal regulations. Storage of hazardous materials may be subject to additional requirements. The project proponent is responsible for identifying and complying with the applicable regulations and obtaining any necessary permits.

Signage shall be provided at the storage area if hazardous materials or other materials of concern are stored. When required, signage shall meet the requirements in Section 10.3.1.

A shut-off valve may be required for the structurally covered storage area if the applicant elects to install drainage facilities to an approved sanitary sewer. The local jurisdiction will make this determination based on the type of material stored and the proposed system receiving the discharge.

10.3.6 MATERIAL TRANSFER AREAS/LOADING DOCKS

The requirements in this section apply to all developments proposing the installation of new material transfer areas, or structural alterations to existing material transfer areas (e.g., access ramp regrading, leveler installations). Facilities must be designed for the full range of materials that will be handled.

The requirements apply to all material transfer areas, including loading/unloading docks, large bay doors without docks, and any other building access point(s) with the following characteristics:

- The area is designed (size, width, etc.) to accommodate a truck or trailer being backed up to or into it, and
- The area is expected to be used specifically to receive or distribute materials to and from trucks or trailers.

The requirements do not apply to areas that are used only for mid-sized to small-sized passenger vehicles that are restricted (by lease agreements or other regulatory requirements) to storing, transporting, or using materials that are classified as domestic use. Examples of domestic uses include primary educational facilities (elementary, middle, or high school), buildings used for temporary storage (a lease agreement will need to be provided), and churches.

Pavement

The material transfer area and the area around the loading and unloading activity area shall be paved with asphalt, concrete, or equivalent smooth impervious surface to reduce the potential for soil contamination and potential impacts on groundwater.

Isolation

Loading Docks: The first three feet of the paved area, measured from the building or dock face, shall be covered (per the requirements of Section 10.3.1) and hydraulically isolated by grading, berms, or drains to prevent uncontaminated stormwater from running onto the area and carrying pollutants away.

Bay Doors and Other Interior Transfer Areas: Shall be designed so that stormwater runoff does not enter the building. This can be accomplished by grading, berms, or drains.

Drainage

Loading Docks: Drainage from the hydraulically isolated area shall be directed to an approved sanitary sewer, authorized pretreatment facility, or to an appropriately sized, underground temporary storage structure (such as a catch basin with no outlet or dead-end sump). The applicant must submit appropriate supporting information for approval by the local jurisdiction. Contact the local permitting agency or sanitary sewer agency for more information on necessary approvals and requirements.

Surrounding runoff and drainage from the access ramp shall be directed away from the hydraulically isolated area to a stormwater disposal point that meets all applicable requirements of this manual.

Bay Doors and Other Interior Transfer Areas: Installation of floor drains is not required or recommended for interior material transfer areas. It is preferable to handle these areas with a dry mop or absorbent material. If interior floor drains are installed, they shall be plumbed to an approved sanitary sewer or authorized pretreatment facility.

Signage

Signage shall be provided at the material transfer area and shall meet the requirements of Section 10.3.1.

Shut-off Valves

A shut-off valve may be required for the sanitary drainage facilities of the material transfer area. The local jurisdiction will make this determination, based on the type of material being transferred and the proposed system receiving the discharge.

Shut off valves are required to protect sewer systems or onsite infiltration facilities from spill risks from chemicals and other constituents that provide a danger for widespread contamination, system damages, or risk to the public health. All valves shall be installed and maintained per the manufacturer's recommendations.

Valves located in material transfer areas are typically left open to facilitate drainage during normal conditions, and immediately closed in the event of a spill.

Additional Requirements

Bay doors and other interior transfer areas shall provide a 10-foot "no obstruction zone" beyond the entrance within the building. This will allow the transfer of materials to occur with the truck or trailer end placed at least 5 feet inside the building, with an additional staging area of 5 feet beyond that. The "no obstruction" zone shall be clearly identified on the building plan and shall be painted with a bright or fluorescent floor paint.

Transport and handling of hazardous materials that are toxic, carcinogenic, or halogenated solvents may be subject to additional requirements. Consult the local jurisdiction for additional guidelines.

10.3.7 EQUIPMENT AND/OR VEHICLE WASHING FACILITIES

The requirements in this section apply to all development with a designated equipment and/or vehicle washing area. Washing methods may include hand washing, pressure washing, steam cleaning or others. This includes smaller activity areas, such as wheel-washing stations. Single-family and duplex residential sites are exempt.

Cover

The washing area shall be covered with a permanent canopy or roof meeting the requirements of Section 10.3.1.

The requirement to cover the washing area can be waived by the local jurisdiction if the area is generally used to service oversized equipment (e.g., cranes) that cannot maneuver under a roof or canopy. When wash areas are exposed to rainfall, oil/water separators shall be installed with a high-flow bypass to route flows greater than the operational rate around the unit, unless the operational rate exceeds the flow rate generated by a 10-year storm, as calculated with the Rational Method (See Chapter 5).

Pavement

A paved wash pad of asphalt, concrete, or equivalent smooth impervious surface shall be placed under and around the washing activity area and shall adequately cover the activity area, including the placement of the vehicle or piece of equipment to be cleaned.

Drainage

The paved area beneath the cover shall be hydraulically isolated through grading, berms, or drains to prevent uncontaminated stormwater from running onto the area and carrying pollutants away. Wash facilities shall be designed so that wash water stays within the hydraulically isolated area. Drainage from the hydraulically isolated area shall be directed to an approved sanitary sewer or authorized pretreatment facility. Surrounding runoff shall be directed away from the hydraulically isolated washing pad to a stormwater disposal point that meets all applicable requirements of this manual.

Proponents are encouraged to install water wash filtration and recirculation systems to aid in water conservation and reuse. If an evaporation unit is installed as part of a wash recycling system, an exception to the sanitary sewer connection may be granted.

Oil and Sediment Controls

All vehicle and equipment washing activities will be reviewed for needed oil and sediment controls to comply with the sanitary sewer discharge limits. Activities and processes of a washing facility change over time, and the introduction of heat and surfactants may occur, both of which affect oil separator effectiveness. Baffled oil/water separators and spill control (SC-type) separators shall not be allowed for use with equipment and/or vehicle washing applications. The following design criteria are established for oil/water separators discharging from a covered wash area to an approved sanitary sewer:

- Coalescing plate separators shall be designed to achieve less than 100-ppm non-polar oil and grease in the effluent from the peak flow generated by the washing activity. Testing information must be submitted by the manufacturer of the unit that supports the 100-ppm effluent standard at the calculated flow rate;
    - Standard flow from a 5/8” hose is estimated to be 10 gpm.
    - For specially designed washing units, check the vendor specifications for maximum flow rates.
- Any pumping devices shall be installed downstream of the separator to prevent oil emulsification;
- Separator details shall match manufacturer specifications and details, including the unit flow rate, effluent water quality, and maximum process flow rate; and
- If the discharge to the sanitary sewer may contain solids that are heavier than water that could cause a blockage in the collection system, a trapped catch basin or sedimentation manhole shall be installed upstream of the oil/water separator.

Wash recycling systems may be used for oil control as long as they can meet effluent discharge limits for the sanitary sewer system. A detail of the wash recycling system and vendor specifications identifying effluent efficiencies shall be submitted as part of the building plans at the time of building permit application.

10.3.8 COVERED VEHICLE PARKING AREAS

The requirements in this section apply to all development with a covered vehicle parking area, except single-family and duplex residential sites. Existing parking structures are not required to retrofit unless the structure is being redeveloped to add 10 or more new parking spaces or 2,000 or more square feet of impervious surface. New parking structures are required to meet these requirements.

Single-level covers (canopies, overhangs, and carports) are exempt from the requirements of this section.

Drainage

Top Floor Drainage of a Multi-Level Parking Structure: Stormwater runoff from the top floor shall be directed to a stormwater disposal point that meets all water quality requirements of this manual and any other applicable code requirements.

Lower Floor Drainage of a Multi-Level Parking Structure: Significant amounts of precipitation are not expected to accumulate in covered vehicle parking areas, and drainage facilities are not required for the lower floors. If the applicant elects to install drainage facilities, the drainage from the lower floors shall be directed to an authorized pretreatment facility before draining to an approved sanitary sewer system.

Adjacent, Uncovered Portions of the Site: The surrounding uncovered portions of the site shall be designed so stormwater does not enter the covered parking areas. This can be accomplished through grading or drains.

10.3.9 VEHICLE AND EQUIPMENT MAINTENANCE AREAS

Wherever possible, vehicle and equipment maintenance shall be performed indoors in a designated area. Developments that will include exterior vehicle and equipment maintenance activities shall install the following source controls.

Cover

The maintenance area shall be covered with a permanent canopy or roof meeting the requirements of section 10.3.1.

Drainage

The maintenance area shall be hydraulically isolated through grading, berms, or drains to prevent uncontaminated stormwater run-on to the area.

Vehicle service facilities shall not contain floor drains unless the floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer, for which an industrial waste discharge permit has been obtained. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

Tanks, containers or sinks used for parts cleaning or rinsing shall not be connected to the storm drain system. Tanks, containers, or sinks used for such purposes may only be connected to that sanitary sewer system if allowed by an industrial waste discharge

permit. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

Containment

Secondary containment shall be provided for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.

10.3.10 LANDSCAPED AREAS INCLUDING POOLS, SPAS, OR FOUNTAIN DISCHARGES

Landscaping shall be designed to minimize irrigation and runoff (e.g., through correctly sized and types of irrigation systems and controllers, such as SMART controller technology using evapotranspiration data). Landscaping is encouraged to be designed to promote surface infiltration where appropriate, and minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.

Pool (including swimming pools, hot tubs, spas and fountains) discharge drains shall not be connected directly to the storm drain system. When draining is necessary, a hose or other temporary system shall be directed into a sanitary sewer clean out, if allowed. The clean out shall be installed in a readily accessible area. The applicant shall contact the local permitting authority and sanitary district with jurisdiction for specific connection and discharge requirements.

10.3.11 FOOD SERVICE EQUIPMENT CLEANING AREAS

Food service facilities, including restaurants and grocery stores, shall have a sink or other area that is connected to a grease interceptor prior to discharging to the sanitary sewer system for cleaning floor mats, containers, restaurant hoods, and equipment, and for disposal of mop water. The cleaning area shall be located indoors and shall be large enough to clean the largest mat or piece of equipment to be cleaned.

10.4 OPERATIONAL BMPS FOR COMMON SITE USES

The following sections outline the operational BMPs for four common site uses. Applicants are required to address all of the site characteristics and uses on their site. For example, if a development includes both a fuel dispensing area and paved sidewalks, the operational source controls in both Sections 10.4.1 and 10.4.4 would apply. Operational source controls do not replace the structural source control requirements outlined in Section 10.3.

10.4.1 PAVED SIDEWALKS AND PARKING LOTS

Parking lots and sidewalks shall be swept regularly to control litter and debris accumulation. If pressure washing is used, the resulting debris shall be trapped and collected prior to entering the storm drain system. Wash water containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer, upon approval, and shall not be discharged to a storm drain. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific discharge and connection requirements.

10.4.2 PRIVATE STREETS

The owner(s) of private streets and storm drains shall prepare and implement a plan for street sweeping of paved private roads and routine cleaning of all storm drain inlets.

10.4.3 VEHICLE OR EQUIPMENT REPAIR AND MAINTENANCE

Vehicle fluids, hazardous materials, or rinse water from parts cleaning operations shall not be disposed of or permitted to be disposed of either directly or indirectly into storm drains by any person.

Vehicle fluid removal shall be performed in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.

No person shall leave drip pans or other open containers containing vehicle fluid unattended, unless such containers are in use or in an area of secondary containment.

Employees shall be trained in the proper handling and disposal of fluids and other pollutants.

10.4.4 FUELING AREAS

The property owner shall routinely dry sweep the fueling area. Employees shall be trained in the proper handling and disposal of fuel and other pollutants.

10.5 DEVELOPMENT ON LAND WITH SUSPECTED OR KNOWN CONTAMINATION

Development projects that disturb property at risk, suspected, or known to contain pollutants in the soil or groundwater are subject to additional requirements. Because of local, state, and federal regulations, special handling and management of site soils, groundwater, and surface drainage may be necessary. Sites with suspected or known contamination may require a more detailed review process.

To research contaminant information, refer to DEQ's facility profiler database, which can be found at: http://www.deq.state.or.us

If records indicate that a No Further Action (NFA) or Record of Decision (ROD) exists for your site, you must contact DEQ prior to pre- and post-construction activities to ensure conditions of record are not violated. For technical questions related to site contamination and clean-up, contact the Land Quality Division of DEQ.

Even if a site is not included in DEQ's tracking database, this does not mean that contamination may not be present. At a minimum, if a site has a history of commercial or industrial use, a Phase I site assessment should be performed prior to design. Applicants are advised to contact local regulating agencies and DEQ early in the plan design process if they are aware or suspect the site has contaminants or is adjacent to a contaminated site.