

Chapter 4.0 SOURCE CONTROLS

Summary of Chapter 4.0

This chapter presents storm and sanitary source controls required for site uses and characteristics that generate, or have the potential to generate, specific pollutants of concern.

- 4.1 Introduction and Applicability
- 4.2 Fuel Dispensing Facilities and Surrounding Traffic Areas
- 4.3 Above-Ground Storage of Liquid Materials
- 4.4 Solid Waste Storage Areas, Containers, and Trash Compactors
- 4.5 Exterior Storage of Bulk Materials
- 4.6 Material Transfer Areas/ Loading Docks
- 4.7 Equipment and/or Vehicle Washing Facilities
- 4.8 Stormwater and Groundwater Management For Development On Land With Suspected or Known Contamination
- 4.9 Covered Vehicle Parking Areas
- 4.10 Forms and Reference Materials:

Signage Examples
Source Control Installations Form
Special Requests Form

To Use This Chapter:

- 1) Determine if the project has any of the characteristics or site uses listed in **Section 4.1.1**.
- 2) If so, go to the applicable section for that characteristic or site use and follow the requirements to design source controls for the project.
- 3) The site use may require a **Source Control Installations and/or a Special Requests form** to be submitted with the permit application.

4.1 INTRODUCTION AND APPLICABILITY

Some site characteristics and uses may generate specific pollutants of concern or levels of pollution that are not addressed solely through implementation of the pollution reduction measures identified in Chapter 2.0. 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, toxic hydrocarbons, heavy metals, toxic compounds, solvents, abnormal pH levels, nutrients, organics, bacteria, chemicals, and

suspended solids. This chapter presents source controls for managing these pollutants at their source.

Stormwater discharge benchmarks for pollutants exist in NPDES industrial stormwater general permits issued by the State of Oregon for facilities with industrial activities that are exposed to rainfall and stormwater runoff. The state also has water quality standards listed in Oregon Administrative Rules (OAR) 340 Division 041 for discharges to surface waters.

City Code 17.39 lists prohibited discharges to the City's storm sewer system. The City used the state standards and industrial stormwater NPDES benchmarks in developing the manual's listed source controls so stormwater discharges can better meet those criteria. Section 4.1.1 lists the site uses and characteristics that are subject to the requirements of this chapter and will therefore be subject to BES Source Control review. Sections 4.2 through 4.9 then provide detailed information about the required source controls.

These source controls apply to all projects with the defined uses or characteristics listed in [Section 4.1.1](#) including: new development, redevelopment, tenant improvements or those existing sites proposing new off-site discharges. With tenant improvements, only those areas of a structure or activity area that are being disturbed under the permit are required to make the structural changes identified in this chapter. With new off-site discharges only those proposed areas draining off-site will be subject to these regulations.

The requirements of this chapter are in addition to the applicable destination/disposal, pollution reduction, and flow control requirements identified in Chapter 1.0. Development sites discharging to combined sewers are required to provide pollution reduction and flow control for stormwater in accordance with the standards outlined in [Chapter 1.0](#), and on-site storm and sanitary flows shall remain separated until the connection point off-site.

For all structural source controls, a [Source Control Installations Form](#), located at the end of this chapter, shall be submitted as part of the building permit application packet. Applicants may propose alternatives to the source controls identified in this chapter. In that case, the applicant shall complete the [Special Requests Form](#), located at the end of this chapter. Proposal of an alternative source control or alternative design element will require an additional review process and may delay issuance of related building or public works permits.

Note: Developments citing special circumstances (see [Chapter 1.0, Section 1.11](#)) are not exempt from the source control requirements of this chapter.

4.1.1 Site Uses and Characteristics That Trigger Source Controls

Projects with the following site uses and characteristics are subject to the requirements of this chapter:

- Fuel Dispensing Facilities and Surrounding Traffic Areas ([Section 4.2](#))
- Above-Ground Storage of Liquid Materials ([Section 4.3](#))
- Solid Waste Storage Areas, Containers, and Trash Compactors ([Section 4.4](#))
- Exterior Storage of Bulk Materials ([Section 4.5](#))
- Material Transfer Areas/Loading Docks ([Section 4.6](#))
- Equipment and/or Vehicle Washing Facilities ([Section 4.7](#))
- Stormwater and Groundwater Management For Development On Land With Suspected or Known Contamination ([Section 4.8](#))
- Covered Vehicle Parking Areas ([Section 4.9](#))

Detailed descriptions of these site uses and characteristics can be found in each applicable section. Definitions of terms used in Sections 4.2 through 4.9 are provided in [Section 1.3](#).

Applicants are required to address all of the site characteristics and uses listed in Sections 4.2 through 4.9. For example, if a development includes both a fuel dispensing area and a vehicle washing facility, the source controls in both Sections 4.2 and 4.7 will apply.

4.1.2 Goals and Objectives for Source Control

The specific source control requirements are based on the following goals and objectives:

- 1) Prevent stormwater pollution by eliminating pathways that may introduce pollutants into stormwater.
- 2) Protect soil, groundwater, and surface water by capturing acute releases and reducing chronic contamination of the environment.
- 3) Segregate stormwater and wastewater flows to minimize additions to the sanitary and combined sewer systems.
- 4) Direct wastewater discharges and areas with the potential for relatively consistent wastewater discharges (such as vehicle washing facilities) to the sanitary or combined sewer system.
- 5) Direct areas that have the potential for acute releases or accidental spills, and are not expected to regularly receive flow or require water use (such as covered fuel islands or covered containment areas) to an approved method of containment or disposal.
- 6) Safely contain spills on-site, avoiding preventable discharges to sanitary or combined sewers, surface water bodies, or underground injection control structures (UICs).
- 7) Emphasize structural controls over operational procedures. Structural controls are not operator dependent and are considered to provide more permanent and reliable source control. Any proposals for operation-based source controls need to describe the long-term viability of the maintenance program.

4.1.3 Signage Requirements

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

All signage shall conform to the requirements described in the following box. Signage requirements for specific activities are noted in applicable sections, and spill signage examples can be found at the end of this chapter.

Signs shall be located and plainly visible from all activity areas. More than one sign may be needed to accommodate larger activity areas. Signs shall be water-resistant. They shall include the following information:

- Safety precautions
- Immediate spill response procedures – for example: “Turn the valve located at...” or “Use absorbent materials”
- Emergency contact(s) and telephone number(s) – for example: “Call 911” and “City of Portland (BES) Spill Response Number 503-823-7180”

Signs may need to be in more than one language if required to effectively communicate with employees and delivery personnel.

Any applicable spill response supplies need to be clearly marked and located where the signage is posted and near the high-risk activity area. More than one spill response kit may be necessary to accommodate larger activity areas.

4.1.4 Request for Alternative Method of Source Control

Applicants may request an alternative method of source control by notifying BES’s Source Control Division in writing, specifying the reason for the request and supporting it with technical and factual data. The **Special Requests Form**, located at the end of this chapter, shall be used to request the alternative. All requests shall be given directly to the BES Source Control plans examiner reviewing the plans.

The BES Source Control plans examiner will check the submitted form and supporting information for completeness and forward the request to his or her supervisor for review and decision. The applicant should expect to be contacted within five (5) working days, unless additional documentation is needed.

If the request cannot be satisfied with this process, the tier one appeal process as described in **Appendix A** may be implemented by the applicant.

4.1.5 Additional Requirements

Conformance with this chapter’s requirements does not relieve the applicant of other applicable local, state, or federal regulatory or permit requirements. This chapter is intended to complement any additional requirements, and is not expected to conflict with, exclude, or replace those requirements. In case of a conflict, the most stringent local, state, or federal regulations generally apply. Any conflict will be resolved by a

City review representative in consultation with appropriate agencies. Some of the more common additional requirements that may apply are summarized below.

SPILL RESPONSE SUPPLIES

The City expects spill response supplies, such as absorbent material and protective clothing, to be available at all potential spill areas. Employees should be familiar with the site's operations and maintenance plan and/or proper spill cleanup procedures.

STORMWATER AND WASTEWATER DISCHARGE PERMITS

Some facilities may be required to obtain a State of Oregon NPDES industrial stormwater permit before discharging to the City's separated storm sewer system or to waters of the state. Applicants may also be required to obtain an industrial wastewater permit for discharges 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 City sewer system (storm, sanitary, or combined). (Contact BES's Industrial Source Control Division at 503-823-7122 for a list of current sanitary sewer discharge limits.)

An evaluation will be done during the building permit review process to determine if an industrial discharge permit is required. If a permit is required, the industrial permit application process will be independent of the building permit review/issuance process. However, building permit applications may have to be revised to accommodate industrial permitting compliance requirements (e.g., sampling points, pretreatment facilities). Please note that if industrial permitting is not 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 Department of Environmental Quality (DEQ) identifies drywells, sumps, and piped soakage trenches as "Class V Injection Wells" under the federal Underground Injection Control (UIC) Program. Because the UIC Program states that these types of wells may have a direct impact on groundwater, registration 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. See [Section 1.4.4](#) for additional information.

Additional City of Portland and DEQ permit requirements may apply. Contact BES's Industrial Source Control Division at 503-823-7122 for additional information about

stormwater or wastewater discharges to City-owned sanitary, stormwater, or combined sewer systems.

COLUMBIA SOUTH SHORE WELLHEAD PROTECTION PROGRAM

Storage, use, and transportation of hazardous/toxic materials in designated groundwater resource protection areas are regulated under the Water Bureau's *Columbia South Shore Well Field Wellhead Protection Area Reference Manual* (June 25, 2003).

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.

4.2 FUEL DISPENSING FACILITIES AND SURROUNDING TRAFFIC AREAS

4.2.1 Applicability

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). Propane tanks are exempt from these requirements.

4.2.2 Requirements

1) COVER

The fuel dispensing area shall be covered with a permanent canopy, roof, or awning so precipitation cannot come in contact with the fueling activity area. Rainfall shall be directed from the cover to a stormwater disposal point that meets all applicable code requirements.

- **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 fueling activity area it is to cover.
- **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 fueling activity area it is to cover.

2) PAVEMENT

A paved fueling pad of asphalt or concrete shall be placed under and around the fueling activity area and shall meet all applicable building code requirements. 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 fueling pad.

3) 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 City sanitary sewer or authorized pretreatment facility.

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.

4) 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 4.1.3](#).

5) SPILL CONTROL MANHOLE

A spill control manhole shall be installed on the discharge line of the fueling pad (before the domestic waste line tie-in). The tee 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. The manhole shall be located on private property. For more information about spill control manholes, see [Exhibit 2-26](#).

6) SHUT-OFF VALVES

Shut off valves are required to protect City 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.

A) Shut-off valves are required for any of the following situations:

- Site or activity areas are exposed to corrosives or oxidizers that can harm conveyance system components (such as, but not limited to, battery acid).
- Substances (such as, but not limited to, oil and grease) that do not settle or remain in one location, and are capable of being dissolved in or float on water. These substances can spread rapidly into downstream conveyance and disposal systems, causing widespread impacts and difficult cleanup situations.
- Substances that are known to infiltrate through soils and contaminate groundwater.

B) Traffic pathways that surround fueling pads are considered high-use/high-risk areas and will require a valve on the storm drainage system. Valves installed on storm drainage systems shall be installed downstream of all applicable private stormwater quality facilities to accommodate spill containment. These valves shall be left open to facilitate stormwater flows during normal conditions, and immediately closed in the event of a spill.

- C) **Fueling pads require a valve downstream of the spill control manhole.** Valves installed on sanitary sewer systems shall be installed before the domestic waste line tie-in. 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.

Shut-off valves shall be located on private property and downstream of the exposed area's collection system. All valves shall be installed and maintained as per manufacturers recommendations. For more information about shut-off valves and associated valve boxes, contact the City's Commercial Plumbing Department at 503-823-7302.

7) ADDITIONAL REQUIREMENTS

- A) A **Source Control Installations Form**, located in Section 4.10, shall be submitted as part of the building permit application to facilitate tracking of spill control manhole and shut-off valve installations.
- B) **Installation, alterations, or removal of above-ground fuel tanks larger than 55 gallons, and any related equipment**, are subject to additional permitting requirements by the Portland Fire Marshall's Office. For technical questions and permitting, call the Fire Marshall's Office Permit Center at 503-823-3712, or visit the center at 1300 SE Gideon, Portland, Oregon 97202.
- C) **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 City sanitary sewer system for disposal. If no City sanitary sewer is available, drainage shall be directed to a temporary holding facility for proper disposal and 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 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. The valves shall be installed downstream of the drainage system of the primary containment area and kept closed. 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.

D) **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, call DEQ's Northwest Region main office at 503-229-5263 and ask for the Underground Storage Tank Permitting Department.

8) EXCEPTIONS

- A) **The requirement to cover the fuel dispensing area** can be appealed if the fuel dispensing area is generally used to service oversized equipment (e.g., cranes) that cannot maneuver under a roof or canopy. A **Special Requests form**, located in Section 4.10, shall be submitted as part of the building permit application to evaluate exception qualifications.
- B) **Propane tanks** are exempt from the requirements of this section.
- C) **Existing fueling areas** are not required to install source controls identified in this section if the scope of work is limited to the following:
1. A new canopy installation over an existing fuel pad that is not being upgraded.
 2. An underground tank replacement for compliance with state regulations.
 3. 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.

4.3 ABOVE-GROUND STORAGE OF LIQUID MATERIALS

4.3.1 Applicability

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 quantities of 50 gallons or more. This includes both permanent storage and temporary storage areas. Underground storage tanks or installations requiring a water pollution control facility (WPCF) permit are exempt from these requirements, but must go through DEQ's WPCF permit process.

4.3.2 Requirements

1) 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 receiving 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.

Quantity thresholds of products that are generally exempt from these spill containment measures are:

- Janitorial and cleaning supplies of less than 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. This does not include cleaners or solvents used for cleaning machinery or motor vehicle and machine parts.
- Office and stationary supplies less than 100 pounds net weight. These supplies shall be packaged for consumer use in containers sized less than 5 gallons in size or 30 pounds in weight.

2) COVER

Storage containers (other than tanks) shall be completely covered so rainfall cannot come in contact with them. Runoff shall be directed from the cover to a stormwater disposal point that meets all applicable code requirements.

- **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.

3) PAVEMENT

A paved storage area is required unless otherwise approved by BES's Industrial Source Control Division staff. The storage area shall be paved with asphalt or concrete and shall meet all applicable building code requirements. Sizing of the paved areas shall be adequate to cover the area intended for storage. The applicant shall clearly identify any requested alternative method by submitting a [Special Requests Form](#), located at the end of this chapter.

4) DRAINAGE

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

Covered storage areas: 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 City sanitary sewer or authorized pretreatment facility.

Uncovered storage areas with containment: Water will accumulate in uncovered storage areas during and after rain. Any *contaminated* water cannot simply be drained from the area. It must be collected, inspected, and possibly tested at the expense of the property owner before proper disposal can be determined. Frequent draining may be required during the wet season, which may prove costly. Some type of monitoring may also be needed to determine the characteristics and level of contamination of the stormwater.

All discharges to the sanitary sewer shall be considered batch discharges and shall require approval and pretreatment prior to discharge. Pretreatment requirements shall be set as part of the discharge approval process, based on the types and quantities of material to be discharged. A discharge evaluation shall be performed before connection to a sanitary sewer. Testing may be required to establish characteristics of the wastewater or contaminated stormwater and to verify that local discharge limits are not exceeded. For batch discharge applications, call BES's Industrial Source Control Division at 503-823-5320.

5) 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 4.1.3](#).

6) ADDITIONAL REQUIREMENTS

A) A [Source Control Installations Form](#), located in Section 4.10, shall be submitted as part of the building permit application to facilitate tracking of containment and shut-off valve installations.

B) **Covered storage areas:** A shut-off valve may be required for the covered storage area if the applicant elects to install drainage facilities to an approved City sanitary sewer. BES will make this determination based on the type of material stored and the proposed system receiving the discharge.

Uncovered storage areas: A shut-off valve shall be installed in the storage area so excess stormwater can be drained out of the activity area and directed either to the storm drainage facilities (*if clean*) or into the City sanitary sewer or authorized pretreatment facility (*if contaminated*). Except when excess stormwater is being discharged, the valve shall always be kept closed so any spills within the activity area can be effectively contained.

C) **Storage of hazardous materials** located in designated groundwater resource protection areas is subject to additional requirements, as identified in the Water Bureau's *Columbia South Shore Well Field Wellhead Protection Area Reference Manual* (June 25, 2003).

D) **Tank farms** shall follow the criteria established for bulk fuel terminals in [Section 4.2](#). Exceptions may be granted, based on the product being stored. Requests for an exception will require an additional review process and may delay issuance of related building permits.

E) **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 City permit requirements, or state and federal laws pertaining to water quality. Contact the Portland Fire Bureau (503-823-7366) and/or BES's Industrial Source Control Division (503-823-7122) for further information and requirements.

4.4 SOLID WASTE STORAGE AREAS, CONTAINERS, AND TRASH COMPACTORS

4.4.1 Applicability

The requirements in this section apply to all commercial and industrial development with facilities that store solid wastes (both food and non-food wastes). A solid waste storage area is a place where solid waste containers are collectively stored. Solid waste containers include 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.

This section applies to multi-family residential sites of three or more units if a shared trash collection area is proposed. However, 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.

4.4.2 Requirements

The following design requirements apply for approval of solid waste storage and handling activity areas in the City of Portland. The text below clarifies each requirement.

ACTIVITY/ USE	REQUIREMENTS			
	(1) Cover	(2) Pavement	(3) Isolation	(4) Drainage
Multi-family (with shared trash areas)	X	X	X	X*
Commercial	X	X	X	X
Industrial	X	X	X	X
Compactors (regardless of use)		X	X	X
Can and bottle return stations	X	X	X	X

* If gravity service to the sanitary sewer lines cannot be obtained, a special request can be made to direct the drainage from the hydraulically isolated activity area to the development's stormwater pollution reduction facility. This applies only to multi-family uses. For more information, refer to **Additional Requirements** below.

1) COVER

A permanent canopy, roof, or awning shall be provided to cover the solid waste storage activity area and shall be constructed to cover the activity area so rainfall cannot come in contact with the waste materials being stored. The cover shall be sized relative to the

perimeter of the hydraulically isolated activity area it is to cover. Runoff shall be directed from the cover to a stormwater disposal point that meets all applicable code requirements.

2) PAVEMENT

A paved waste storage area is required when a structural cover or trash compactor is used. The area shall be paved with asphalt or concrete 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.

3) ISOLATION

Hydraulic isolation shall be provided for the solid waste storage activity area and shall be designed to prevent uncontaminated stormwater runoff from entering the area and carrying pollutants away. Runoff occurring outside the hydraulically isolated area shall be directed to a stormwater disposal point that meets all applicable code requirements. This 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.

4) DRAINAGE

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

Non-gravity Option

Activity areas that do not have gravity sanitary sewer service may be allowed to install a pressurized system. With these types of installations, the following items shall be provided at the time of building permit application:

- 1) Verification or evidence that gravity service cannot be obtained.
- 2) Details of an electronic sump pump system equipped with a float switch.
- 3) A completed Discharge Authorization (DAR) form.

Pressurized system installations are considered “permanent equipment” and deemed the property owner’s liability in the event of system failure or if the property becomes vacated.

The Bureau of Development Services (BDS) Commercial Plumbing Division will review all sump pump or sewage ejector installations for compliance with the Uniform Plumbing Code and Oregon State Plumbing Specialty Code. The BES Source Control Division will review for compliance with this chapter of the *Stormwater Management Manual*.

5) ADDITIONAL REQUIREMENTS

Multi-family developments with shared trash areas may be allowed an alternative to the sanitary drain for the hydraulically isolated solid waste storage area. This activity area may be allowed to drain to the site's privately owned and operated stormwater pollution reduction facility if gravity service to the sanitary sewer pipe of the development cannot be obtained. For the alternative to be considered, information showing that gravity service cannot be obtained and a completed **Special Requests Form** shall be submitted. All other requirements previously outlined for multi-family uses shall apply.

4.5 EXTERIOR STORAGE OF BULK MATERIALS

4.5.1 Applicability

The requirements of this section apply to developments that stockpile or store materials in outdoor containers that may erode or have negative stormwater impacts. The materials are separated into three categories, based on risk assessments for each material stored: high-risk, low-risk, and exempt. These include, but are not limited to, the following general types of materials:

High-Risk Materials	Low-Risk Materials	Exempt Materials
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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).

4.5.2 Requirements

1) 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 to prevent stormwater contact and minimize the quantity of rainfall entering the storage area. Runoff shall be directed from the cover to a stormwater disposal point that meets all applicable code requirements.

- **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.

2) 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.

3) 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.

If materials are erodible, a structural containment barrier shall be placed on at least three sides of every stockpile. The barrier shall be tall enough to prevent run-on of uncontaminated stormwater into the storage area and migration of the stored materials as a result of being blown or washed away. 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. The applicant shall clearly identify the method of containment on the building plans.

For **high-risk** material storage areas, the paved area beneath the structural cover shall be hydraulically isolated through grading, structural containment berms or walls, or perimeter drains to prevent uncontaminated stormwater from running onto the area and carrying pollutants away. 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 City sanitary sewer or authorized pretreatment facility.

4) ADDITIONAL REQUIREMENTS

- A) A **Source Control Installations Form**, located in Section 4.10, shall be submitted as part of the building permit application to facilitate tracking of containment, sampling manholes, and shut-off valve installations.
- B) **Storage of pesticides and fertilizers** may need to comply with specific regulations outlined by DEQ. For answers to technical questions, call DEQ's Northwest Region main office at 503-229-5263.
- C) A **sampling manhole** or other suitable stormwater monitoring access point may be required to monitor stormwater runoff from the storage area. This may apply to certain types of storage activities and materials or if an alternative source control is proposed. This requirement complies with City Code Chapter 17.39.080, which requires appropriate stormwater disposal. BES Source Control staff will review for applicability of this requirement.
- D) **Signage** shall be provided at the storage area if hazardous materials or other materials of concern are stored. Signage shall be located so it is plainly visible from all storage activity areas. More than one sign may be needed to accommodate large storage areas. Detailed information and examples are provided in Section 4.1.3.
- E) A **shut-off valve** may be required for the structurally covered storage area if the applicant elects to install drainage facilities to an approved City sanitary sewer. BES will make this determination based on the type of material stored and the proposed system receiving the discharge.
- F) **Storage of hazardous materials** that are toxic, carcinogenic, or halogenated solvents (within designated groundwater protection areas) are subject to additional requirements, as identified in the Water Bureau's *Columbia South Shore Well Field Wellhead Protection Area Reference Manual* (June 25, 2003).

4.6 MATERIAL TRANSFER AREAS/LOADING DOCKS

4.6.1 Applicability

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).

Two standard types of material transfer areas associated with buildings are:

- 1) Loading/unloading facilities with docks
- 2) Large bay doors without docks

The requirements apply to all material transfer areas, including loading/unloading docks, bay doors, 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 may not apply to areas that are used only for mid-sized to small-sized passenger vehicles and 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. Contact BES's Industrial Source Control Division at 503-823-7122 for help in determining if requirements apply.

4.6.2 Requirements

1) PAVEMENT

A paved material transfer area of asphalt or concrete shall be placed underneath and around the loading and unloading activity area and shall meet all applicable building code requirements. This will reduce the potential for soil contamination with potential impacts on groundwater, and will help control any acute or chronic release of materials present in these areas.

3) ISOLATION

Loading Docks

The first 3 feet of the paved area, measured from the building or dock face, shall be hydraulically isolated through grading, berms, or drains to prevent uncontaminated stormwater from running onto the area and carrying pollutants away.

Bay Doors and Other Interior Transfer Areas

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 or drains.

3) DRAINAGE

Loading Docks

Drainage from the hydraulically isolated area shall be directed to an approved City sanitary sewer or authorized pretreatment facility. 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.

Non-Gravity Option

Activity areas that cannot achieve gravity sanitary sewer service may be allowed to install a pressurized system. With these types of installations, the following items shall be provided at the time of building permit application:

- 1) Proof that gravity sanitary sewer service cannot be obtained.
- 2) Details of an electronic sump pump system equipped with a float switch.
- 3) A completed **Source Control Installations Form**.

Pressurized system installations are considered “permanent equipment” and deemed the property owner’s liability in the event of system failure or if the property becomes vacated.

The Bureau of Development Services (BDS) Commercial Plumbing Division will review all sump pump or sewage ejector installations for compliance with the Uniform Plumbing Code and Oregon State Plumbing Specialty Code. The BES Source Control Division will review for compliance with this chapter of the *Stormwater Management Manual*.

Bay Doors and Other Interior Transfer Areas

Because interior material transfer areas are not expected to accumulate precipitation, installation of floor drains is not required or recommended. 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 City sanitary sewer or authorized pretreatment facility.

4) SIGNAGE

Signage shall be provided at the material transfer area and shall be plainly visible from all surrounding activity areas. Detailed information and examples are located in [Section 4.1.3](#).

5) ADDITIONAL REQUIREMENTS

- A) A [Source Control Installations Form](#), located at the end of this chapter, shall be submitted as part of the building permit application to facilitate tracking of shut-off valve installations.
- B) **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 at the time of the building permit application, and shall be painted at the facility with a bright or fluorescent floor paint.
- C) A **shut-off valve** may be required for the sanitary drainage facilities of the material transfer area. BES 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 the City sewer system or on-site infiltration facilities from spills of chemicals and other constituents that may provide a danger of widespread contamination, system damage, or risk to public health.

Shut-off valves are required for any of the following situations:

- 1) Site activity areas that are exposed to corrosives or oxidizers that can harm conveyance system components (such as battery acid).
- 2) Substances (such as oil and grease) that do not settle or remain in one location, and are capable of being dissolved in or float on top of water. These substances can spread rapidly into downstream systems, causing widespread impacts and difficult clean-up situations.

- 3) Substances that are known to infiltrate through soils and contaminate groundwater.

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.

Prior to transfer activities of harmful substances, the valves shall be closed and reopened only after the transfer is complete. The shut-off valves must be located on private property and downstream of the exposed area's collection system.

All valves shall be installed and maintained in accordance with manufacturer specifications. For more information about shut-off valves and associated valve boxes, contact the Bureau of Development Services (BDS) Commercial Plumbing Department at 503-823-7302.

- C) **Transport and handling of hazardous materials** that are toxic, carcinogenic, or halogenated solvents (located in designated groundwater protection areas) are subject to additional requirements, as identified in the Water Bureau's *Columbia South Shore Well Field Wellhead Protection Area Reference Manual* (June 25, 2003).

5) EXCEPTIONS

Drainage: The requirement for drainage from the hydraulically isolated area of the loading dock to be directed to an approved City sanitary sewer or authorized pretreatment facility may be waived if BES determines there is no gravity sanitary service available and an appropriately sized, underground temporary storage structure (such as a catch basin with no outlet or dead-end sump) is provided. For the exception and alternative to be considered, information showing that gravity service cannot be obtained and a completed [Special Requests Form](#) shall be submitted.

4.7 EQUIPMENT AND/OR VEHICLE WASHING FACILITIES

4.7.1 Applicability

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

4.7.2 Requirements

1) COVER

The washing area shall be covered with a permanent canopy or roof so precipitation cannot come in contact with the washing activity area. Precipitation shall be directed from the cover to a stormwater disposal point that meets all applicable code requirements.

- **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 washing activity area it is to cover.
- **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 washing activity area it is to cover.

2) PAVEMENT

A paved wash pad of asphalt or concrete shall be placed under and around the washing activity area and shall meet all applicable building code requirements. Sizing of the paved area shall adequately cover the activity area, including the placement of the vehicle or piece of equipment to be cleaned.

3) 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. Drainage from the hydraulically isolated area shall be directed to an approved City 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.

4) OIL CONTROLS

All vehicle and equipment washing activities will be reviewed for needed oil controls to comply with the City's sanitary sewer discharge limits. The following design criteria are established for oil/water separators discharging to a sanitary sewer:

A) Washing Areas Protected with a Cover or Located Inside a Structure

- 1) Baffled oil/water separators and spill control (SC-type) separators shall not be allowed for use with equipment and/or vehicle washing applications. *Note: Activities and processes of a washing facility change over time, and the introduction of heat and surfactants may occur.*
2. Coalescing plate separators shall be designed to achieve 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.
 - a. Standard flow from a 5/8" hose is estimated to be 10 gpm.
 - b. For specially designed washing units, check the vendor specifications for maximum flow rates.
- 2) Any pumping devices shall be installed downstream of the separator to prevent oil emulsification.
- 3) Separator details must be shown on the building plans submitted at the time of building permit application and shall match manufacturer specifications and details, including the unit flow rate, effluent water quality, and maximum process flow rate.

B) Washing Areas Exposed to Rainfall (by exception only)

- 1) Washing areas exposed to rainfall will be accepted by exception only. Stormwater volume charges will be applicable because the City will charge the owner stormwater volume charges for the stormwater discharged to separated sanitary sewer systems. The stormwater volume charges will be based on the impervious area and average rainfall, or by the installation of a discharge meter. The discharge will be charged at sanitary sewer volume rates (City Code Chapter 17.36.010 (A)(2)).
- 2) 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 ($Q=C*I*A$, $I=2.86''/hr$ for 10-year storm).

C) **On-site Wash Recycling Systems**

Wash recycling systems may be used for oil control as long as they can meet effluent discharge limits for the City's 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.

5) **EXCEPTIONS**

A) **Permanent Cover:** If a washing activity area is generally used to service oversized equipment that cannot maneuver under a roof or canopy (cranes, sail boats, etc.) an exception to the roof or canopy requirement will be granted. A **Special Requests form**, located in Section 4.10, shall be submitted as part of the building permit application to evaluate exception qualifications.

B) **Sanitary Sewer Connection:** If an evaporation unit is installed as part of a wash recycling system, an exception to the sanitary sewer connection will be granted. NOTE: The cover requirement cannot be waived for evaporation units because of the sizing and capacity limitations of the individual units. A **Special Requests form**, located in Section 4.10, shall be submitted as part of the building permit application to evaluate exception qualifications.

4.8 STORMWATER AND GROUNDWATER MANAGEMENT FOR DEVELOPMENT ON LAND WITH SUSPECTED OR KNOWN CONTAMINATION

4.8.1 Applicability

The requirements in this section apply to all development projects that disturb property at risk, suspected, or known to contain pollutants in the soil or groundwater. This includes development that is surrounded by properties found to have trace pollutants. These requirements will also be applied to any property that is seeking to make a new connection to a Public storm system (whether a public separated storm sewer or a public underground injection structure, such as a sump) from a property that is at risk, suspected, or known to contain pollutants in the soil or groundwater. To avoid confusion with references to water quality pollutant throughout this manual, this section refers to pollutants as **contaminants** and/or **contamination**.

Because of local, state, and federal regulations, special handling and management of site soils, groundwater, and surface drainage may be necessary. As a result of these regulations, sites with suspected or known contamination require a more detailed review process and may delay issuance of related building permits. Applicants are advised to contact source control staff early on in the plan design process (before plan submittal) if they are aware or suspect the site has contaminants or is adjacent to a contaminated site.

To research contaminant information, refer to DEQ's facility profiler database, which can be found at: <http://deq12.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.

All regulatory divisions or departments of DEQ referenced in this section can be reached by calling DEQ's Northwest Region Office at 503-229-5263.

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.

Contaminants have the potential to become entrained and transported through exposure to construction activities and post-construction design elements of a development. The requirements in this section apply to:

- Excavation and stockpiling of contaminated soils (soil management)
- Disposal or re-use facilities related to groundwater, foundation or footing drains, interior floor drains in basements or sub-grade structures, construction dewatering, and surface stormwater treatment and conveyance systems

4.8.2 Requirements

Stormwater and groundwater discharges from sites suspected of contamination, whether proposed as a temporary construction connection or as permanent connection to any public system, will require a special authorization from BES. After reviewing the proposal and a characterization of the contaminants from the site, BES Source Control Division may make one of the following decisions:

- Approve discharges with restrictions such as described in these pages or as is necessary given the nature of the discharge.
- Require the applicant to obtain an NPDES permit from DEQ for the anticipated discharge prior to connection.
- Require that the applicant become part of BES' Industrial Pre-treatment Program.
- Deny the request to use the City storm or sump system.
- Allow unrestricted connection to the city storm sewers, with a testing point for future monitoring.

Contaminants, media, and site conditions are unique to each parcel of land. Sites at risk for contamination shall therefore be reviewed on a case-by-case basis.

1) SOIL MANAGEMENT

Stockpiles of contaminated soils shall be covered with temporary plastic film or sheeting to prevent stormwater from coming into contact with them.

Stockpile perimeters shall have a containment barrier on all four sides of every stockpile to prevent stormwater run-on and material run-off. Barriers can consist of concrete curbing, silt fencing, or other berming material, depending on the activity, size, and resources available.

Areas under stockpiles of contaminated soils are not required to be paved. However, an impervious layer shall be placed beneath the stockpile to protect uncontaminated areas from potential leachate.

2) CONSTRUCTION DEWATERING

All construction dewatering discharges resulting from groundwater or precipitation (rainfall) will be evaluated for contamination before disposal methods can be approved.

Laboratory analysis reports will be required, as defined in this chapter.

A temporary sampling point may be necessary. The temporary sampling point will be agreed upon between the City staff member processing the batch discharge authorization and the applicant.

Source control requirements will be identified as part of the review process of the laboratory analysis reports and the building permit application. Source controls, sampling points, and the disposal point shall be identified on the erosion control plan of the building permit application.

If on-site infiltration is the proposed method for disposal, authorizations are required from the Bureau of Development Services (BDS) and the Land Quality Division of DEQ. Infiltration systems for construction dewatering shall be located and maintained on private property, outside the public rights-of-way.

If on-site (proposed as a privately owned and maintained facility) underground injection control structure (UIC) is the proposed method for disposal, authorizations are required from BDS and the Water Quality Division of DEQ. All UICs shall be located and maintained on private property, outside the public rights-of-way.

If a public sanitary system is the proposed method of disposal, authorizations are required from BES and will be allowed only if extensive pretreatment is implemented and the discharge is approved through the BES appeal process. All groundwater and surface water discharges to a sanitary sewer system shall meet local discharge limits and will be subject to discharge volume charges. Discharges will be charged at sanitary sewer volume rates, as stated in City Code, Chapter 17.36.010(A)(2).

If a public stormwater system (such as a public sump system or storm sewer) is the proposed method of disposal, evaluations of discharge to the City's storm or sump system will be based on whether discharges meet, or can be pretreated to meet, requirements of the City's NPDES or other state and federal regulations for the receiving system, either groundwater or surfacewater.

Discharges to a combined sewer system may be flow restricted and shall meet local discharge limits, as stated in City Code, Chapter 17.34, Administrative Rules. Water Quality rules will also be applicable.

If a receiving stream is the proposed method for disposal, authorizations are required from BDS, the U.S. Army Corp of Engineers, and both the Land Quality and Water Quality Divisions of DEQ.

For technical assistance on obtaining a batch discharge authorization for construction dewatering activities, contact the BES Industrial Source Control Division at 503-823-7122.

3) POST-CONSTRUCTION SURFACE DRAINAGE SYSTEMS

If on-site infiltration is the proposed method for disposal, authorizations are required from the Bureau of Development Services (BDS) and the Land Quality Division of DEQ. Private infiltration systems shall be located and maintained on private property, outside the public rights-of-way. If crossings of public rights-of-way are necessary, authorizations and permits are required from BES and Portland's Office of Transportation (PDOT).

If on-site underground injection control structure (UIC) is the proposed method for disposal, authorizations are required from BDS and the Water Quality Division of DEQ. Private UICs shall be located and maintained on private property, outside the public rights-of-way. If crossings of public rights-of-way are necessary, authorizations and permits are required from BES and PDOT.

If a receiving stream is the proposed method for disposal, authorizations are required from BDS, the Army Corp of Engineers, and both the Land Quality and Water Quality Divisions of DEQ.

If crossings of public rights-of-way are necessary, authorizations and permits are required from BES and PDOT.

If an off-site Public sewer system is the proposed method for disposal, authorization is required from BES. Evaluations for discharges from sites with suspected contamination will be based on the following:

- a) Surface drainage systems that are not exposed to industrial activities, contaminated soils, or subsurface discharges are not expected to contain contaminants and do not pose a threat to Public infrastructure. All discharges to a public sewer system will need an additional sewer connection permit.
- b) A permanent monitoring point may be required to ensure compliance with local discharge regulations. If monitoring is necessary, a permanent structure

(such as a sampling manhole or flow-through vault) shall be installed on the discharge line of the subsurface drainage system.

4) POST-CONSTRUCTION WATER RECLAIM OR RE-USE SYSTEMS

Water reclamation or re-use systems provide innovative ways to use natural resources and save money. However, using groundwater as a resource from sites at risk of contamination may require additional source controls and environmental compliance regulations, depending on the nature of the contaminants and the extent of the remediation that has been completed.

Authorizations for re-use systems are required from the Bureau of Development Services (BDS), BES, the Oregon Water Resources Department, and DEQ.

If surface drainage systems are the proposed resource, discharges are not expected to contain contaminants and do not pose a threat to City infrastructure. Review will verify that there is no interaction between groundwater and the surface.

Non-potable uses for plumbing fixtures and industrial equipment (e.g., cooling towers or boilers) will require the following:

- a) A discharge meter shall be installed on the outlet of the re-use system for sewer billing purposes.
- b) Industrial equipment bleed-offs or drain valves shall have discharges routed to the sanitary waste line of the facility.
- c) Overflows from the re-use system, prior to use, are not considered a wastewater and shall have discharges routed to the storm disposal system of the facility.

Irrigation systems may encourage transportation of contaminants and require authorization from the Land Quality Division of DEQ prior to installation.

If subsurface drainage systems are the proposed resource, discharges may contain contaminants and will be evaluated for contamination before disposal methods can be approved.

Non-potable uses for plumbing fixtures and industrial equipment (e.g., cooling towers or boilers) will require the following:

- a) A discharge meter shall be installed on the outlet of the re-use system for sewer billing purposes.

- b) Industrial equipment bleed-offs or drain valves shall have discharges routed to the sanitary waste line of the facility. Discharges shall meet local discharge limits, as stated in City Code, Chapter 17.34, Administrative Rules.
- c) Because overflows from the re-use system, prior to use, may contain contaminants, the requirements stated under **Post-Construction Subsurface Drainage Systems** apply.
- d) A permanent monitoring point may be required to ensure compliance with local discharge regulations. If monitoring is necessary, a permanent structure (such as a sampling manhole or flow-through vault) shall be installed on the discharge line of the subsurface drainage system.

Irrigation systems may encourage transportation of contaminants and require authorization from the Land Quality Division of DEQ prior to installation.

If groundwater is proposed for commercial or industrial uses of a development (e.g., non-potable uses or irrigation) authorization or a permit is required from the Oregon Water Resources Department (WRD) prior to use.

Minimum requirements that warrant a permit for industrial and commercial groundwater wells include, but are not limited to, irrigation of areas greater than ½ acre and use of more than 5,000 gallons per day of water. Unique groundwater reuse systems (anything other than a standard supply well installation) will be reviewed on a case-by-case basis to determine permitting requirements (if applicable).

For assistance in obtaining authorization for the use of groundwater, contact WRD's Multnomah County Water Master at 503-722-1410. For more information on water rights and groundwater regulations, see the WRD website at: www.wrd.state.or.us

5) POST CONSTRUCTION SUBSURFACE DRAINAGE SYSTEMS

In an area at risk for contamination, structures proposed below grade can greatly impact and add unexpected costs to the surface drainage systems, water reclaim or re-use systems, and subsurface drainage systems of a project.

All surface, subsurface and re-use systems will be evaluated for contamination risks before disposal and re-use methods can be approved.

If on-site infiltration is the proposed method for disposal, authorizations are required from the Bureau of Development Services (BDS) and the Land Quality Division of DEQ.

Private infiltration systems shall be located and maintained on private property, outside the public rights-of-way. If crossings of public rights-of-way are necessary, authorizations and permits are required from BES and Portland's Office of Transportation (PDOT).

If on-site subsurface injection is the proposed method for disposal, authorizations are required from BDS and the Water Quality Division of DEQ.

Private subsurface injection systems (Underground injection controls) shall be located and maintained on private property, outside the public rights-of-way. If crossings of public rights-of-way are necessary, authorizations and permits are required from BES and PDOT.

If a receiving stream is the proposed method for disposal, authorizations are required from BDS, the U.S. Army Corp of Engineers, and both the Land Quality and Water Quality Divisions of DEQ. If crossings of public rights-of-way are necessary to obtain access to an approved discharge point of a receiving stream, authorizations and permits are required from BES and PDOT.

If a Public sewer system is the proposed method for disposal, authorization is still required from BES. A permanent monitoring point may also be required to ensure compliance with local discharge regulations.

6) LABORATORY ANALYSIS REPORTS

Laboratory analysis reports are required to identify the characteristics and levels of contamination in the soils and groundwater of a site.

An additional review process will be applied to these laboratory reports to determine regulatory authority and requirements. Testing and analysis are highly recommended prior to submitting building permit applications. DEQ permitting and/or review may be required if contaminants are found and the levels of contamination appear to exceed the City's local discharge regulations. This may delay issuance of related building permits.

Laboratory analysis reports shall include the following information:

- a) Analysis reports shall identify the elevation of the seasonal water table and identify the depth of any perched water aquifers.

- b) Analysis reports shall identify the method of laboratory testing, the detection level and analytical method for detection, and the depth of any found contaminants in the soils.
- c) Minimum test parameters for baseline contaminants shall include metals (arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, and zinc), TPH (total petroleum hydrocarbons), and BTEX (benzene, toluene, ethyl benzene and xylene).
- d) Test parameters may be required to include other contaminants identified through historical data, research, and environmental assessments (as recommended under Section 4.8.1).
- e) If post-construction subsurface drainage or dewatering systems are proposed to discharge to a City sump system, test parameters will be required to include parameters identified in the federal Safe Drinking Water Act. Discharges to any public UIC must meet the standards listed for each parameter. The parameters and standards regulated by the federal Safe Drinking Water Act can be found on the internet at: www.epa.gov/safewater/mcl.html#mcls

7) ADDITIONAL REQUIREMENTS

All structural controls in this section require a Source Control Installations form, located at the end of this chapter. Typical controls that would need a DAR form include containment areas, shut-off valves, and oil/water separators. If an applicant requests an alternative or exception to any of the source controls identified in this section, the applicant shall complete the **Special Requests form**, located at the end of this Chapter. These types of requests require an additional review process and may delay issuance of related building or public works permits.

4.9 COVERED VEHICLE PARKING AREAS

4.9.1 Applicability

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. New parking structures are required to meet these requirements.

4.9.2 Requirements

1) 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 approved City sanitary sewer.

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.

EXCEPTIONS

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

4.10 FORMS AND REFERENCE MATERIALS

Signage Examples:



Spill sign samples recommend PMS 185 red and black on white



SOURCE CONTROL INSTALLATIONS

This form is required for structural source controls that address site characteristics and facility uses at risk for source point pollutant releases that are regulated or prohibited by local, state, and federal regulations. This form will be utilized for tracking and inspection purposes.

Existing facilities proposing a new connection to a Public Storm or Sanitary system, with the characteristics and uses identified in Chapter 4 of the City's Stormwater Management Manual, will be subject to the same structural source controls as new development, redevelopment, and tenant improvements.

(Please Print)

FACILITY INFORMATION

Facility Name (if applicable): _____

Facility Address or Location: _____

Type of business/facility: _____

Facility Contact or Owner: _____ Phone No.: _____

APPLICANT INFORMATION

Applicant's Name: _____ Phone No.: _____

Applicant's Mailing Address: _____

STRUCTURAL SOURCE CONTROLS (*check all that apply*)

Building Permit No. (if applicable): _____

- | | |
|--|--|
| <input type="checkbox"/> Oil/Water Separator | <input type="checkbox"/> Containment Area |
| <input type="checkbox"/> Shut-off Valve on Storm Drainage Line | <input type="checkbox"/> Wall Valve for Containment Area |
| <input type="checkbox"/> Shut-off Valve on Sanitary Waste Line | <input type="checkbox"/> Spill Control Manhole |
| <input type="checkbox"/> Collection Device w/ No Outlet | <input type="checkbox"/> Sampling Structure |
| <input type="checkbox"/> Discharge Meter | <input type="checkbox"/> Other: _____ |

The following items need to accompany this form:

- A detail or vendor specification for each proposed source control, and
- A site plan of the facility/property clearly identifying the location of each structural source control in reference to a permanent structure, to help assist the Source Control Division in field verification. (*A hand-drawn sketch, not to scale, is acceptable as long as it is legible.*)

City Comments:

SPECIAL REQUESTS

for Source Controls

This form is required if you are requesting alternatives to standard structural source controls, removal or abandonment of existing source controls, exception qualifications per Chapter 4 of the City's Stormwater Management Manual, or other special requests you would like reviewed by the Source Control Division.

Special requests will require an additional review process and may delay issuance of related building permits. If this request cannot be satisfied by the Special Requests process through the Source Control Division, the tier one appeal process, as described in **Appendix A** of the Stormwater Management Manual, may be implemented by the applicant.

(Please Print)

FACILITY INFORMATION

Facility Name (if applicable): _____

Facility Address or Location: _____

Type of business/facility: _____

Facility Contact or Owner: _____ Phone No.: _____

APPLICANT INFORMATION

Applicant's Name: _____ Phone No.: _____

Applicant's Mailing Address: _____

SPECIAL REQUEST

Building Permit No. (if applicable): _____

Request for an alternative source control method

Request to remove or abandon existing structural source control(s)

Request for review of EXCEPTION qualifications.

Other: _____

The following items need to accompany this form:

- A detail or vendor specification for each alternative source control, and
- A site plan of the facility/property clearly identifying the location on the site that will be impacted by this special request. Existing and proposed utilities may need to be shown to ensure regulatory compliance with local, state and federal regulations. (*A hand-drawn sketch, not to scale, is acceptable as long as it is legible.*)

Page 1 of 2

(SPECIAL REQUESTS FORM CONT.)

