PUBLIC WORKS FACILITY
STORMWATER POLLUTION PREVENTION PLAN

Prepared for:

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PROJECT CERTIFICATION

This Public Works Facility Stormwater Pollution Prevention Plan has been prepared by, or under the direction of, the following registered professional engineer, licensed in accordance with the laws of the State of Washington to practice in the State of Washington.

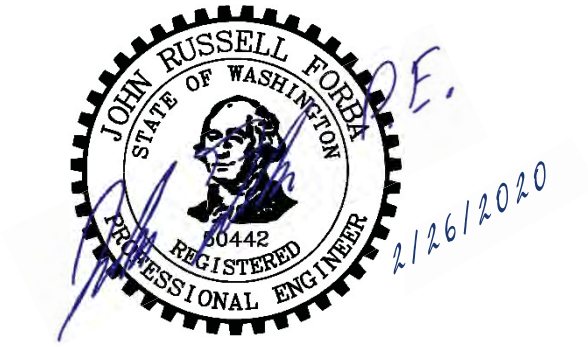

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TABLE OF CONTENTS

SECTION # TITLE **PAGE #**

SECTION # TITLE **PAGE #**

APPENDICES

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

BMP	Best Management Practice
CB	Catch Basin
CMP	Corrugated Metal Pipe
CWA	Clean Water Act
EPA	Environmental Protection Agency
MH	Manhole
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
Phase II Permit	Department of Ecology's Western Washington Phase II Municipal Stormwater Permit
SWPPP	Stormwater Pollution Prevention Plan
DOE	Washington State Department of Ecology

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SECTION 1
INTRODUCTION

This document is the Stormwater Pollution Prevention Plan (SWPPP) developed for the City of Brier Public Works Facility located in the northeast corner of Brier Park at 22750 Poplar Way, Brier, WA 98036.
This facility falls under the jurisdiction of the City of Brier Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) Phase 2 Permit, March 31, 2019.

1.1 ORGANIZATION OF THE STORMWATER POLLUTION PREVENTION PLAN

Section 1 of this SWPPP provides information regarding stormwater regulations, the requirements of the 2019 NPDES Phase II permit, review and revision of the SWPPP, and availability of the SWPPP as a public document. Section 2 discusses the operation and activities conducted at the Facility. This section also briefly describes the site drainage patterns and where runoff is discharged once it leaves the site. Section 3 provides a general discussion of Best Management Practices (BMPs) and identifies those BMPs that are implemented throughout the Facility.

1.2 STORMWATER REGULATORY FRAMEWORK

In 1972 the Federal Water Pollution Control Act (known as the Clean Water Act) was amended to effectively prohibit discharge of pollutants to “waters of the United States” from any point source unless the discharge is in compliance with an NPDES Permit. The United States Environmental Protection Agency (EPA) has delegated administration of the NPDES Program within Washington State to the Washington State Department of Ecology (DOE). The 1987 amendments of the Clean Water Act added Section 402(p), which established the framework for regulating discharges of pollutants via stormwater from industrial activities and MS4s. Section 402(p) required the EPA to develop permitting regulations for stormwater discharges from MS4s and from industrial facilities, including construction sites.

This SWPPP applies to the City of Brier Public Works Facility located at 22750 Poplar Way, Brier, WA 98012. This SWPPP identifies actions that Facility staff will take to comply with the terms and conditions of the Phase II Permit. This SWPPP is required to be developed for the Facility under the City’s Phase II Permit by February 16, 2010, in accordance with permit condition S5.C.5.h.

1.3 REVIEW AND REVISION OF THE STORMWATER POLLUTION PREVENTION PLAN

The SWPPP will be reviewed at least annually to determine if any revision is necessary to reflect changes in the Facility or changes in the activities conducted that:

- may significantly increase the quantities of pollutants in stormwater runoff;
- cause a new area of the Facility to be exposed to stormwater or authorized non-stormwater discharges; or
- start-up of an activity that would introduce a new pollutant source at the Facility.

In determining if revision of the SWPPP is necessary, the Public Works Supervisor will review the Annual Facility/Activity Stormwater Assessment, which is described in Section 4.

SECTION 2
FACILITY ASSESSMENT

2.1 OVERVIEW OF FACILITY AND OPERATIONS

The City's Public Works Facility is located in the northeast corner of Brier Park at 22750 Poplar Way, Brier, WA 98036. There are four structures on the site, the maintenance shop, two open air sheds and the canopy over the fuel island.

2.2 FACILITY DRAINAGE

The Public Works Facility is located in the northeast corner of Brier Park. The site generally slopes to the east, towards Poplar Way. The roof drain downspouts from each of these structures splash blocks onto the adjacent grade and sheet flows to the storm system. The shop building has two small asphalt berms that direct the sheet flow across the asphalt to the trench drain adjacent to the fuel island.

The fuel island is sloped to drain to the trench drain. The trench drain is piped to the catch basin located in the center of the concrete wash pad. From this point the water is conveyed to an open sediment pond. Water from the sediment pond is piped through a spill control oil/water separator in a type 2 catch basin prior to discharging into the roadside open ditch that flows southerly along Poplar Way. This system eventually drains into the ditch along Old Poplar Way and ultimately drains into Scriber Creek. See Figure 2-1 for the site drainage patterns.

2.3 DESCRIPTION OF PUBLIC WORKS FACILITY ACTIVITIES

2.3.1 City Vehicle Storage and Maintenance

Brier Public Works stores their vehicles and equipment at the public works facility. The vehicles include pickup trucks, riding lawn mowers, a back hoe, street sweeper and a vactor truck. Most of the vehicles and equipment are stored beneath the sheds and in the open air bays of the shop. General maintenance consisting of oil changes, brake replacement, etc., is completed onsite inside the maintenance bays The City does maintain antifreeze and new and waste motor oil onsite for use within City vehicles. Public Works staff park their personal vehicles on the north side of the facility. Occasionally a portion of the site is leased to franchise utility companies and their contractors in the area who store both light-duty vehicles as well as larger equipment such as boom and vactor trucks on the east side of the site south of the access gate.

2.3.2 Recycling and Waste Disposal

Public Works handles solid waste storage and disposal from public works operations, including landscaping and yard debris, street sweeping, as well as general trash from city

parks. General trash is stored in two 3 cubic yard (cy) trash dumpsters located at the northeast corner of the site and is picked up by Waste Management on a weekly basis.

Yard waste collected from Public Works operations (maintaining landscaping in parks and along streets) is stored in one of the stockpiles along the east perimeter of the site. The remaining stock piles on the east contain various materials from washed rock and quarry spalls to excavation spoils from work completed offsite through installation and maintenance of the storm, sewer, and street systems. Periodically these material bins are cleared out and waste material is disposed of at an offsite location. Additional stockpiles are located on the south side and on the west side of the yard. The south stock piles sit on a concrete pad and are lined with ecology blocks to contain the stockpile material. The materials stored here are the waste debris from the street sweeper and the vactor truck after it is decanted into the sanitary sewer system. Periodically this waste material is disposed of at an offsite location. The west stockpile is where sand is stored for use on the road system during snowfall and ice events. The stockpile is covered with a plastic tarp to prevent rainfall from contacting the sand.

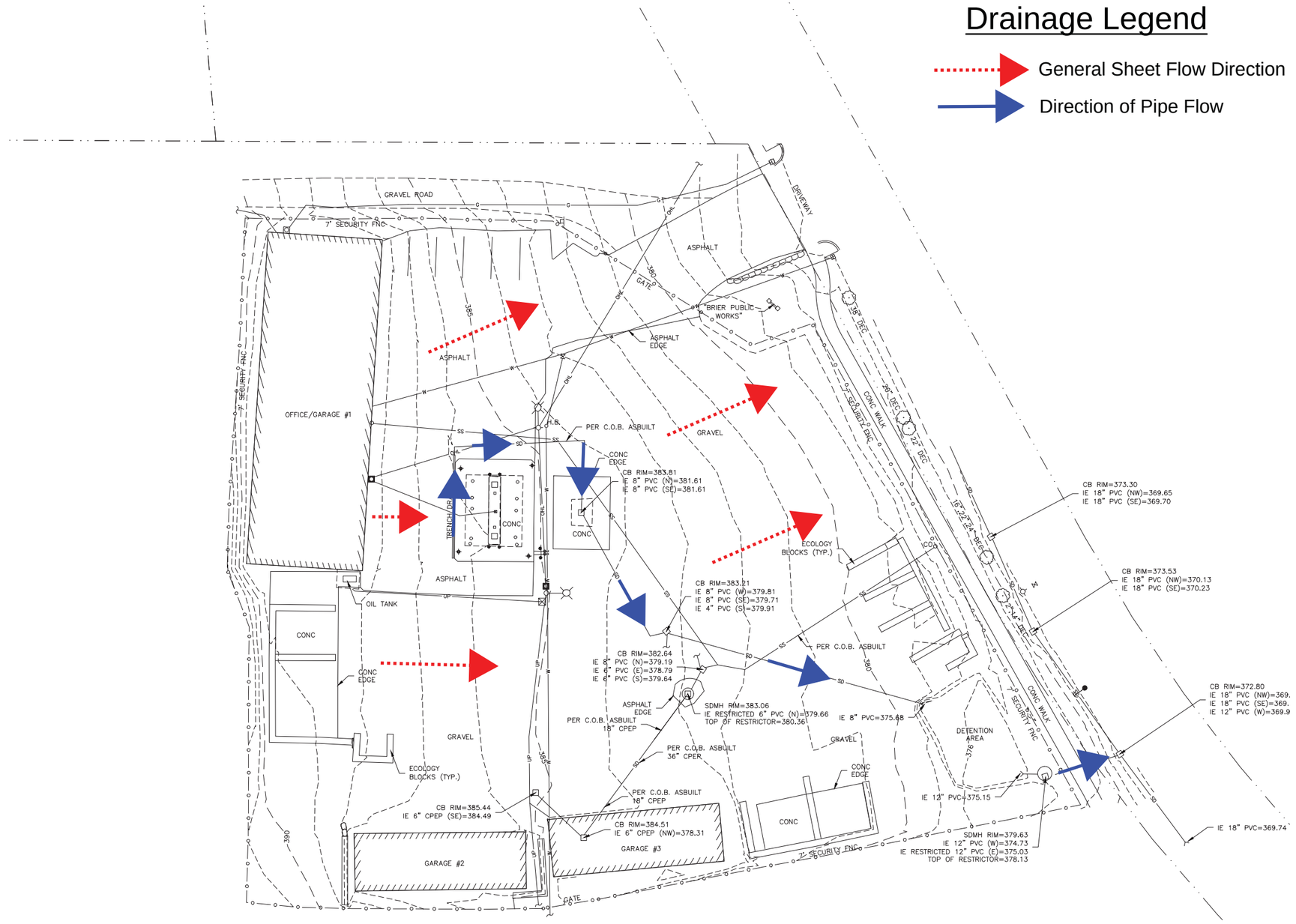
2.3.3 Liquid Material Storage

The majority of liquid stored at the Facility is stored inside the shop. Fluid types include small amounts of fuel (one-, two-, and five-gallon containers), oil, antifreeze, and cleaners. The fuel is stored in a vented storage locker. Spills are cleaned up immediately using a spill kit with absorbing diapers and kitty-litter-like material. The one exception is a 100-gallon waste oil container that is stored on the south side of the shop building; however, this waste oil container has not been used in years. Currently the tank is covered and surrounded by cinder blocks.

Drainage Legend

General Sheet Flow Direction

Direction of Pipe Flow



LEGEND

- WATER VALVE
- HYDRANT
- FDC
- POST INDICATOR VALVE
- WATER BLOW OFF
- WATER METER
- IRR. CONTROL VALVE
- MANHOLES (SS/SD)
- CB
- POWER TRANSFORMER
- POWER/COMM. VAULT
- WATER/UTILITY VAULT
- POWER MANHOLE
- COMM. MANHOLE
- WATER MANHOLE
- POWER METER
- SURFACE JUNCTION BOX
- SUBSURFACE JUNCTION BOX
- POWER/UTILITY POLE
- POWER/UTILITY POLE W/DROP
- ANCHOR POLE
- GUY ANCHOR
- TRAFFIC SIGNAL POLE
- STREET LIGHT
- LUMINAIRE(DOUBLE)
- LUMINAIRE(SINGLE)
- GAS RELEASE
- AREA LIGHT
- GAS METER
- GAS VALVE
- SIGN
- MAILBOX
- NEWS PAPER BOX
- TRASH CAN
- ROCKERY
- SPOT ELEVATION
- SIZE & TYPE (CONIFEROUS TREE)
- SIZE & TYPE (DECIDUOUS TREE)
- MAGNETIC NAIL W/ WASHER
- REBAR AND CAP (SET)
- REBAR AND CAP (FOUND)
- TACK AND LEAD
- HUB AND TACK
- CASED MONUMENT
- SURFACE MONUMENT

- CENTER LINES
- PROPERTY LINES
- RIGHT-OF-WAY LINES
- SUBDIVISION LINES
- QUARTER SECTION LINE
- SIXTEENTH SECTION LINE
- HISTORICAL LINES
- EASEMENT LINES
- LOT LINES
- DITCH LINE
- W — WATER LINE
- SS — SANITARY SEWER LINE
- SD — STORM DRAIN LINE
- G — GAS LINE
- UP — UNDERGROUND POWER LINES
- COM — UNDERGROUND COMMUNICATION LINES
- OHL — OVERHEAD UTILITY LINES
- OHW — HIGH WATER LINE
- WL — WETLAND BOUNDARY LINE
- CHAIN LINK FENCE
- WIRE FENCE
- WOOD FENCE
- EDGE OF VEGETATION/HEDGE LINE

UTILITY PROVIDERS:

(ALDWOD01) ALDERWOOD WTR & WASTEWTR

(BRIER01) CITY OF BRIER PUBLIC WORKS

(CC7721) COMCAST CABLE

(GTE01) FRONTIER COMMUNICATIONS NW INC CONTACT NAME

(PUGG09) PUGET SOUND ENERGY GAS
CONTACT NAME : LANNY NESMITH
CONTACT PHONE: 4254562202
CONTACT EMAIL:
CONTACT URL :

(SNOPUD05) SNOHOMISH PUD #1 ELEC

HORIZONTAL DATUM

HORIZONTAL DATUM: NAD 83/2011, WASHINGTON COORDINATE SYSTEM NORTH ZONE. BASED ON GPS MEASUREMENTS UTILIZING THE VIRTUAL REFERENCE NETWORK.

ALL DISTANCES SHOWN ARE GROUND DISTANCES UNLESS OTHERWISE NOTED.

THE LOCATION AND DESCRIPTION OF ALL SURVEY MARKERS SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS TAKEN IN FEBRUARY, 2020, UNLESS OTHERWISE INDICATED.

WORK PERFORMED IN CONJUNCTION WITH THIS SURVEY UTILIZED THE FOLLOWING EQUIPMENT AND PROCEDURES: (A) 1" TRIMBLE S7 SERIES ELECTRONIC TOTAL STATION, MAINTAINED TO THE MANUFACTURER'S SPECIFICATIONS PER W.A.C. 332-130-100. (B) FIELD TRAVERSE, EXCEEDING REQUIREMENTS SET FORTH IN W.A.C. 332-130-090. (C) LEASE SQUARE ADJUSTMENT USING StarNet VERSION 9.0 EXCEEDING REQUIREMENTS PER W.A.C. 332-130-080.

THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS.

THIS TOPOGRAPHIC SURVEY DRAWING ACCURATELY PRESENTS SURFACE FEATURES LOCATED DURING THE COURSE OF THIS SURVEY. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED SOLELY UPON INFORMATION PROVIDED BY OTHERS AND PACE ENGINEERS, INC. DOES NOT ACCEPT RESPONSIBILITY OR ASSUME LIABILITY FOR THEIR ACCURACY OR COMPLETENESS. CONTRACTOR/ENGINEERS SHALL VERIFY EXACT SIZE AND LOCATION PRIOR TO CONSTRUCTION.
CALL FOR LOCATE: UTILITY LOCATION SERVICE: 811

PORTION OF: SW 1/4, SW 1/4, SECTION 26 , T. 27 N., R. 04 E., W.M.

PRELIMINARY

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USER NAME: JOHN FORGA
XREF FILES:
PLOT TIME: 2/20/2020 9:09 AM

CALC	
CAD	DRS
PM	JS

SYM	REVISION	DATE	BY	APP'D

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Civil | Structural | Planning | Survey
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MAINTENANCE FACILITY

DATE	2-13-2020
SCALE	1" = 20'
SURVEY TEAM	ES/DJ
FIELD BOOK	741D
DWG:	20230.01-SRV.DWG

Figure 2-1 Site Drainage Patterns

PROJECT NO. **20230.01**

SHEET 1 OF 1

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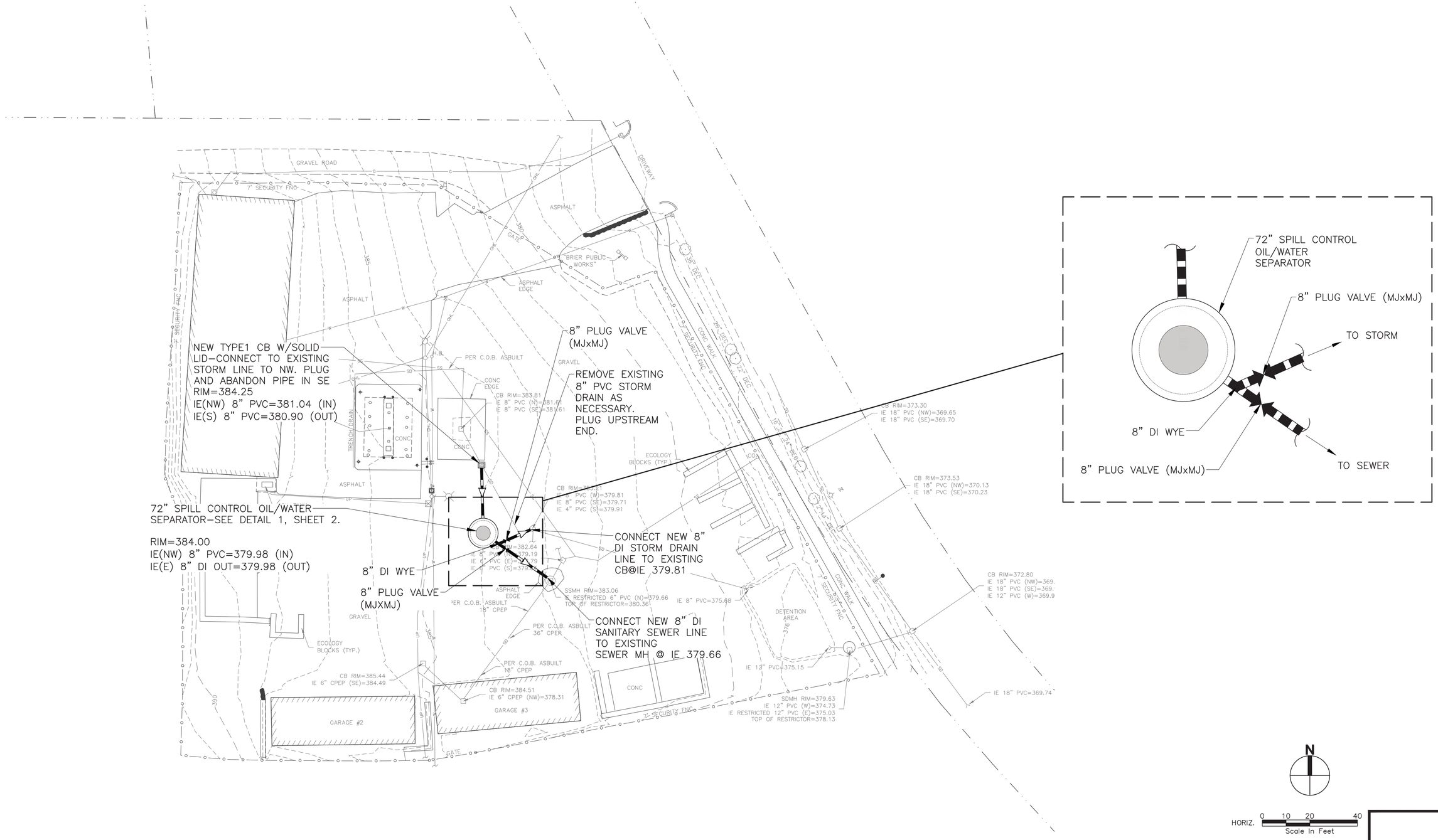

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DESIGNED	AMJ
DRAWN	AMJ
CHECKED	JF

SYM	REVISION	DATE	BY	APP'D

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MAINTENANCE FACILITY

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DATE **02/28/20**

SCALE **AS SHOWN**

CITY OF BRIER

Figure 2-2 Facility Site Map

PACE PROJECT NO. **20230.01**

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SHEET 1 OF 1

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USER NAME: AARON JACKSON
XREF FILES: X20230-SRV.dwg X20230.01-SRV.dwg Y:\20230\X20230-SITE.dwg

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SECTION 3
BEST MANAGEMENT PRACTICES

This section describes Best Management Practices (BMPs) that are currently implemented and required for the site. Tables are provided which list BMPs, current and required, for activities which drain to the storm drainage system. This section also discusses the Pollution Prevention team, training requirements, and the treatment BMPs currently in place at the site.

3.1 CURRENT AND REQUIRED BMPS FOR FACILITY ACTIVITIES

Stormwater BMPs include structures, activities, or practices which will help prevent or reduce stormwater pollution. Operational Source Control BMPs are activities and practices that are implemented to prevent stormwater pollution. These practices include the following which are discussed in further detail below:

- Performing good housekeeping practices and preventative maintenance actions
- Developing a Pollution Prevention team
- Training staff annually
- Updating the Stormwater Pollution Prevention Plan

3.1.1 What are BMPs?

BMPs are the practices, procedures, policies, prohibitions, schedules of activities, structures, and devices that are implemented to prevent or minimize pollutants coming in contact with precipitation, stormwater runoff, or non-stormwater flows. BMPs are also structures or devices that remove pollutants from stormwater runoff before the runoff enters a stormwater drainage system or a surface water. Therefore, BMPs are often categorized as either “source control” BMPs or “treatment control” BMPs. Source control BMPs include all types of measures designed to prevent pollution at the source, that is, to keep stormwater from contacting pollutants in the first place. Source control BMPs are generally simple, low-maintenance, cost-effective, and are broadly applicable. They may be categorized as either nonstructural or structural. Good housekeeping is an example of a non-structural source control BMP; a canopy is an example of a structural source control BMP.

Treatment control BMPs are methods of treating stormwater runoff to remove pollutants and are frequently more costly to design, install, and operate than source control BMPs. More importantly, treatment control BMPs are typically not as effective as source control BMPs, and the effectiveness is highly dependent on regular maintenance. Nevertheless, they can be appropriate and effective under certain conditions. However, treatment control BMPs typically do not remove all pollutants from stormwater runoff and should not be regarded as disposal systems.

A list of suggested BMPs for the maintenance facility is shown in Table 3-1 on the following page.

Table 3-1: Current and Recommended BMPs for Public Works Facility Activities

Facility Activity	Location[a]	Current BMPs	Recommended BMPs
Storage of Vehicles and Equipment	CS, Y	Vehicles and equipment are stored under canopies.	• Sweep paved parking areas as needed to collect dirt, waste, and debris. Do not hose down area to the storm drainage system. Pay particular attention to the entrance drive where sediment will be tracked onto the public roadway. • If washing/pressure washing of the parking occurs, the wash water must be collected and discharged to a sanitary sewer.
Vehicle Washing	Y	The City washes their vehicles on the concrete wash pad. Wash pad drains to storm system	• The drainage system should be redesigned to convey the wash water to the sanitary sewer for treatment. This design is in process for right now. Until the system is reconfigured the wash pad should not be used. Currently public works is taking all vehicles/equipment that need to be washed to commercial car washes or to the City of Mountlake Terrace's or City of Lynnwood's decant facilities.
Vehicle and Equipment Service and Maintenance	S	The City performs minor services on their vehicles and equipment inside the shop maintenance bays. Larger repairs are completed offsite.	• Inspect for leaks from vehicles and equipment • Use drip pans or containers under parts or vehicles that drip or that are likely to drip
Storage of Liquids in Permanent Above Ground Tanks	Y	Although the storage tank has been empty for some time, the City has located the tank in a secondary containment area and has covered the tank to prevent contact with rainfall.	• Inspect tank area regularly to identify problem components such as fittings, pipe connections, and valves, for leaks/spills, cracks and corrosion • Place adequately sized drip pans beneath all mounted taps and drip/spill locations during filling/unloading of tanks • Sweep and clean the tank storage area regularly • Replace or repair tanks that are leaking, corroding or otherwise deteriorated
Spill of Oil and Hazardous Substances	Y, S	City maintains spill kits in the shop to deploy for spill cleanup.	• Prepare an Emergency Spill Control Plan

Facility Activity	Location[a]	Current BMPs	Recommended BMPs
Storage of Liquid, Food, Waste, or Dangerous Waste Containers	Y, S	Stores liquids in the shop area in ventilated cabinets Utilized drip pans beneath liquid storage container taps.	• Inspect container storage areas regularly for corrosion, structural failure, spills, leaks, overfills • Check containers daily for leaks, spills • Place drip pans beneath all mounted container taps and at all potential drip and spill locations during filling and unloading • Store garbage/waste in bins/containers with lids to prevent contact with rainfall. Keep lids closed.
Stockpile of Material	Y	Plastic covering over stockpile	• Use plastic covering over stock piles larger than 5 cubic yardswhen not in use; or • Construct covers over the stock piles.
[a] Location: CS = Covered Shed; Y = Yard; S = Shop			

3.1.2 Good Housekeeping

Good housekeeping practices include activities that are intended to maintain a clean site and keep equipment in good working order to prevent stormwater quality problems from occurring. It is better to keep pollutants out of stormwater rather than having to remove them later. Daily cleanup and inspections are the most effective means of achieving good housekeeping. For the most part, good housekeeping is a day-to-day activity that does not require a large expenditure of time or expense, and should be implemented on an ongoing basis. A variety of good housekeeping practices have been developed to reduce or eliminate run-on and runoff pollutants from general Facility activities. They are summarized in the following table.

Table 3-2: General Good Housekeeping Practices

Activity	Frequency
Routine Sweeping of Paved Surfaces/outdoor work areas	As Needed
Periodic Cleanup of Debris and Old Equipment	Quarterly
Routine Inspection for Leaks or Spills	Daily
Waste and Material Minimization Programs, order only the amount of material needed for any particular job	Ongoing
Prevention of Bulk Material Stockpiles from Eroding, such as using covers or berms, as applicable	After use
Preventing run-on and runoff	Ongoing
Tools and materials should be returned to designated storage areas after use	Daily
Indoor work areas should be neat, uncluttered, and well-ventilated to discourage outdoor work and to allow leaks and spills to be quickly detected and controlled	Ongoing
Occasionally outdoor work areas may need cleaning beyond sweeping. In such cases, all wash waters should be contained, collected, and properly disposed	As Needed
Outdoor waste or trash receptacles should be covered and emptied regularly and the adjacent areas inspected for misplaced or wind-blown litter	Ongoing

Table 3-1 shows activities that drain to the storm system and their respective current and recommended BMPs. The specific activity BMPs listed in Table 3-1 have been adapted from Volume III of the 2014 Department of Ecology Stormwater Management Manual for Western Washington and are included in Appendix A.

3.1.3 Treatment BMPs

Currently there is a sediment pond located in the southeast corner of the site that then drains to a spill control oil/water separator prior to discharging surface runoff into the roadside ditch along Poplar Way. There are no onsite treatment BMPs being utilized at the Public Works Facility.

3.1.4 Recommended Structural BMP Implementation Schedule

As noted above and in Appendix A, there are structural BMPs that are recommended for use at the public works facility that are not currently available.

Stockpiles

Construct permanent covers over the stock piles or utilize tarps to cover the stockpiles that are larger than 5 cubic yards. Tarps should be implemented immediately on all stockpiles larger than 5 cubic yards.

Vehicle Wash Pad

Disconnect the wash pad from the storm drainage system and connect it to the sanitary sewer. A system retrofit that utilizes a valve system is currently under design. The pad will collect stormwater in its current catch basin and drain to an oil-water separator. Downstream of the oil-water separator there shall be a wye with two valves on either portion of the wye. Downstream of these valves will be connections to the existing sewer and the existing stormwater lines. When the wash pad is in use, the sewer valve will be opened and the stormwater valve will be closed, thereby forcing any surfactants to the sewer. When the wash pad is not in use, the sewer valve will closed and the stormwater valve will be open, thereby routing all runoff from this portion of the site to the existing stormwater pond. Redevelopment of the wash pad should be completed by August 2020.

3.1.5 Spill Prevention and Response

For spills, the old saying “an ounce of prevention is worth a pound of cure” is appropriate. Spill cleanup can be labor-intensive and costly, involving expenses to contain the spill, collect the spilled substance, properly dispose of spill materials, and report filing to regulatory agencies, in addition to possible monetary fines. Spills and leaks are some of the most significant sources of water pollution and are, in most cases, avoidable.

Spill prevention and control procedures include the following:

- Place bollards around the liquid storage containers to prevent vehicles and equipment from impacting the containers and causing accidental spills.
- Place berms and containment features around structures or areas where fluids are stored so that releases can be prevented, easily detected, and controlled.
- Use drip pans for maintenance operations involving fluids and under leaking vehicles and equipment waiting repair.

- Place spill kits in areas where fluids are stored or in areas where activities may result in a spill.
- Provide training for proper use of materials and equipment used during operations and maintenance activities.
- Provide training for proper use of spill response equipment and supplies.
- Conduct outdoor maintenance activities on paved surfaces to allow for easy detection, control, and cleanup of spills.

Spill prevention, control, and cleanup applies to all materials and wastes – not only hazardous substances. The toxic water quality effects from spills of hazardous substances (e.g., acids, oils, greases, fuels, solvents, pesticides) are commonly understood. However, non-hazardous materials – for example, sand, litter, corn oil, sweeteners, soaps, and milk, among others – can also greatly impact water quality.

3.1.6 Pollution Prevention Team

The City has defined members of the Facility Pollution Prevention Team. The team consists of staff from the various departments responsible for performing the key SWPPP on-site activities. Table 3-3 below lists the team members, their contact information, and their responsibilities.

Table 3-3: Pollution Prevention Team

Position	Name & Contact Information	Responsibilities
Public Works Supervisor	Steve Smith 425.775.5440	• Overall responsibility for coordination and permit compliance • Performs SWPPP inspections, • Updates the SWPPP • Oversee cleaning of sewer/storm lines
Maintenance	Steve Smith 425.775.5440	• Responsible for implementing the SWPPP throughout the facility and facility operations.

3.1.7 Training for Facility Personnel

The Phase II Municipal Stormwater Permit requires that training be provided to Facility employees whose activities could impact stormwater quality. The Public Works Foreman is responsible for Stormwater Management training.

The Public Works Foreman position coordinates training related to stormwater management on at least an annual basis to review specific responsibilities for implementing this SWPPP, what and how to accomplish those responsibilities, including BMP implementation. This

training will occur shortly after completion of the SWPPP and then will typically occur annually in September, shortly before the start of the wet season (October 1 through May 30).

Additionally, general awareness training is provided annually to all employees whose activities may impact stormwater discharges. The purpose of this training is to educate workers on activities that can impact stormwater discharges, and to help in the implementation of BMPs.

Training documentation has been provided in Appendix C. Include instructor's name, date and time of training, location of training, and training participants.

The training records are kept for a period of no less than five years.

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SECTION 4
MONITORING (VISUAL INSPECTIONS)

There are no permits or other conditions that prescribe or require stormwater sampling for the Public Works Facility. The stormwater BMP monitoring for the Facility will rely upon quarterly wet and dry weather visual inspections of discharge quality to indicate obvious or potential problems, and an annual BMP evaluation. Coupled with the other BMPs for this Facility, as discussed in Section 3, this approach should be well suited to minimize the potential for adverse conditions on stormwater quality. The two primary purposes of the monitoring are to:

- assess illicit and non-stormwater discharges
- determine if BMPs need maintenance.

4.1 DRAINAGE CHARACTERISTICS

As discussed in Section 1, the site generally slopes to the east, with sheet flow from the parking lot entering one of three catch basins.

4.2 QUARTERLY WET AND DRY WEATHER VISUAL INSPECTIONS

Inspections of the catch basins will be performed on a quarterly basis during wet and dry weather. As the drainage system is combined with adjacent buildings/parking lots, inspections should note any discharge from the upstream flows. This will also make it difficult to identify sources of pollutants found within the catch basins themselves. Inspection notes should address any pollutants located on and around the grates of the catch basins.

Wet weather inspections means that discharges from the identified outfalls will be assessed during a significant rainfall resulting in visible stormwater runoff and discharges from the site. This rainfall should be approximately 0.1 inches or more in a 24-hour period, but site conditions and local rainfall patterns should be taken into account so that inspections can begin soon after significant runoff begins. Note that inspections are not required to be conducted outside of regular business hours or during unsafe conditions.

Dry weather inspections should be conducted when no rain has occurred at the Facility for at least 24 hours prior to inspection.

Visual inspections consist of making observations of the visual characteristics of discharges from the outfalls and recording them on the appropriate forms. These observations include recording the absence or presence and degree of the indicators outlined below:

- **Floatables**: Floatables indicate if obvious trash or other controllable debris, such as landscaping material, leaf litter, etc., has entered into the storm system.
- **Foam**: Foam indicates that potentially soap or other cleaning products have entered into the storm system. However, stormwater can often be slightly foamy from pollen and other natural organic material. The way to tell the difference is by appearance and

smell. If the foam is persistent and accompanied by a fragrant odor, it could be related to a cleaning product. If the suds break up quickly, then it could be from turbulence and/or natural conditions.

- **Sheen**: Sheen, which also looks like a rainbow hue on the water surface, is commonly indicative of petroleum products, often present from parking lot runoff. If gasoline or a flammable solvent is suspected, leave the immediate area, notify Facility management immediately, and take action to prevent fire or explosion.
- **Turbidity**: Turbidity, which makes the water appear cloudy, is usually an indication of dirt or sediment in the water.
- **Odor**: Certain contaminants in stormwater can give off specific odors, which should be described as best as possible. Odors can include those similar to rotten eggs, solvent, fuel/oil, cleaning agent, etc. When noting odors, be sure that the odor is related only to the runoff being inspected, not from an unrelated source nearby. If gasoline or a flammable solvent is suspected, leave the immediate area, notify the Facility management immediately, and take action to prevent fire or explosion.
- **Discoloration**: A red/orange color can indicate rust from iron pipes or iron bacteria. Other colors such as white could indicate paint or cleaning agent emulsions.
- **Flow**: Note presence or discharge from each outfall. If flow is present, indicate the approximate discharge rate on the inspection form (e.g., <10 gpm or >10 gpm).

4.3 ANNUAL BMP EVALUATION

The Annual Site Evaluation Form, located in Appendix B, will be completed on an annual basis by a member of the pollution prevention team. The form is used to assess the current BMPs in place at the Facility. Outcomes from this evaluation will help to determine if any additional BMPs need to be put in place or if current BMPs should be modified.

4.4 SWPPP REVISIONS

Appendix B contains the SWPPP Revisions Form, which should be revised whenever the SWPPP is modified, specifically under both of the following conditions:

- significant changes occur at the Facility which affect current BMPs and could affect stormwater quality
- on an annual basis to reflect any administrative changes, including pollution prevention team members

Public Works Facility
Stormwater Pollution Prevention Plan
Brier, Washington

Appendix A
BEST MANAGEMENT PRACTICES

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- Hydro-demolition
- Bridge and road surfacing

Design and Installation Specifications

- Vacuum slurry and cuttings during cutting and surfacing operations.
- Slurry and cuttings shall not remain on permanent concrete or asphalt pavement overnight.
- Slurry and cuttings shall not drain to any natural or constructed drainage conveyance including stormwater systems. This may require temporarily blocking catch basins.
- Dispose of collected slurry and cuttings in a manner that does not violate ground water or surface water quality standards.
- Do not allow process water generated during hydro-demolition, surface roughening or similar operations to drain to any natural or constructed drainage conveyance including stormwater systems. Dispose process water in a manner that does not violate ground water or surface water quality standards.
- Handle and dispose cleaning waste material and demolition debris in a manner that does not cause contamination of water. Dispose of sweeping material from a pick-up sweeper at an appropriate disposal site.

Maintenance Standards

Continually monitor operations to determine whether slurry, cuttings, or process water could enter waters of the state. If inspections show that a violation of water quality standards could occur, stop operations and immediately implement preventive measures such as berms, barriers, secondary containment, and vacuum trucks.

BMP C153: Material Delivery, Storage and Containment

Purpose

Prevent, reduce, or eliminate the discharge of pollutants to the stormwater system or watercourses from material delivery and storage. Minimize the storage of hazardous materials on-site, store materials in a designated area, and install secondary containment.

Conditions of Use

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Petroleum products such as fuel, oil and grease
- Soil stabilizers and binders (e.g., Polyacrylamide)
- Fertilizers, pesticides and herbicides
- Detergents
- Asphalt and concrete compounds
- Hazardous chemicals such as acids, lime, adhesives, paints, solvents, and curing compounds
- Any other material that may be detrimental if released to the environment

Design and Installation Specifications

The following steps should be taken to minimize risk:

- Temporary storage area should be located away from vehicular traffic, near the construction entrance(s), and away from waterways or storm drains.
- Material Safety Data Sheets (MSDS) should be supplied for all materials stored. Chemicals should be kept in their original labeled containers.
- Hazardous material storage on-site should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- During the wet weather season (Oct 1 – April 30), consider storing materials in a covered area.
- Materials should be stored in secondary containments, such as earthen dike, horse trough, or even a children's wading pool for non-reactive materials such as detergents, oil, grease, and paints. Small amounts of material may be secondarily contained in "bus boy" trays or concrete mixing trays.
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and, when possible, and within secondary containment.
- If drums must be kept uncovered, store them at a slight angle to reduce ponding of rainwater on the lids to reduce corrosion. Domed plastic covers are inexpensive and snap to the top of drums, preventing water from collecting.

Material Storage Areas and Secondary Containment Practices:

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 shall be stored in approved containers and drums and shall not be overfilled. Containers and drums shall be stored in temporary secondary containment facilities.
- Temporary secondary containment facilities shall provide for a spill containment

volume able to contain 10% of the total enclosed container volume of all containers, or 110% of the capacity of the largest container within its boundary, whichever is greater.

- Secondary containment facilities shall be impervious to the materials stored therein for a minimum contact time of 72 hours.
- Secondary containment facilities shall be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills shall be collected and placed into drums. These liquids shall be handled as hazardous waste unless testing determines them to be non-hazardous.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- During the wet weather season (Oct 1 – April 30), each secondary containment facility shall be covered during non-working days, prior to and during rain events.
- Keep material storage areas clean, organized and equipped with an ample supply of appropriate spill clean-up material (spill kit).
- The spill kit should include, at a minimum:
    - 1-Water Resistant Nylon Bag
    - 3-Oil Absorbent Socks 3”x 4’
    - 2-Oil Absorbent Socks 3”x 10’
    - 12-Oil Absorbent Pads 17”x19”
    - 1-Pair Splash Resistant Goggles
    - 3-Pair Nitrile Gloves
    - 10-Disposable Bags with Ties
    - Instructions

BMP C154: Concrete Washout Area

Purpose

Prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout off-site, or performing on-site washout in a designated area to prevent pollutants from entering surface waters or ground water.

Conditions of Use

Concrete washout area best management practices are implemented on construction projects where:

Recommended BMPs:

- In manufacturing operations, train employees to handle powders carefully to prevent generation of dust.
- Use dust filtration/collection systems such as bag house filters, cyclone separators, etc. to control vented dust emissions that could contaminate stormwater. Control of zinc dusts in rubber production is one example.
- Use water spray to flush dust accumulations to sanitary sewers where allowed by the local sewer authority or to other appropriate treatment system.
- Use approved dust suppressants such as those listed in Ecology Publication Techniques for Dust Prevention and Suppression, #96-433 (Ecology, 1996). Application of some products may not be appropriate in close proximity to receiving waters or conveyances close to receiving waters. For more information check with Ecology or the local jurisdiction.

Recommended Treatment BMPs: Install sedimentation basins, wet ponds, wet vaults, catch basin filters, vegetated filter strips, or equivalent sediment removal BMPs.

S409 BMPs for Fueling At Dedicated Stations

Description of Pollutant Sources: A fueling station is a facility dedicated to the transfer of fuels from a stationary pumping station to mobile vehicles or equipment. It includes above or underground fuel storage facilities. In addition to general service gas stations, fueling may also occur at 24-hour convenience stores, construction sites, warehouses, car washes, manufacturing establishments, port facilities, and businesses with fleet vehicles. Typical causes of stormwater contamination at fueling stations include leaks/spills of fuels, lube oils, radiator coolants, and vehicle washwater.

Pollutant Control Approach: New or substantially remodeled* fueling stations must be constructed on an impervious concrete pad under a roof to keep out rainfall and stormwater run-on. The facility must use a treatment BMP for contaminated stormwater and wastewaters in the fueling containment area.

** Substantial remodeling includes replacing the canopy, or relocating or adding one or more fuel dispensers in such a way that modify the Portland cement concrete (or equivalent) paving in the fueling area.*

For new or substantially remodeled Fueling Stations:

Applicable Operational BMPs:

- Prepare an emergency spill response and cleanup plan (per S426 BMPs for Spills of Oil and Hazardous Substances (p.666)) and have designated trained person(s) available either on site or on call at all times to promptly and properly implement that plan and immediately cleanup all spills. Keep suitable cleanup materials, such

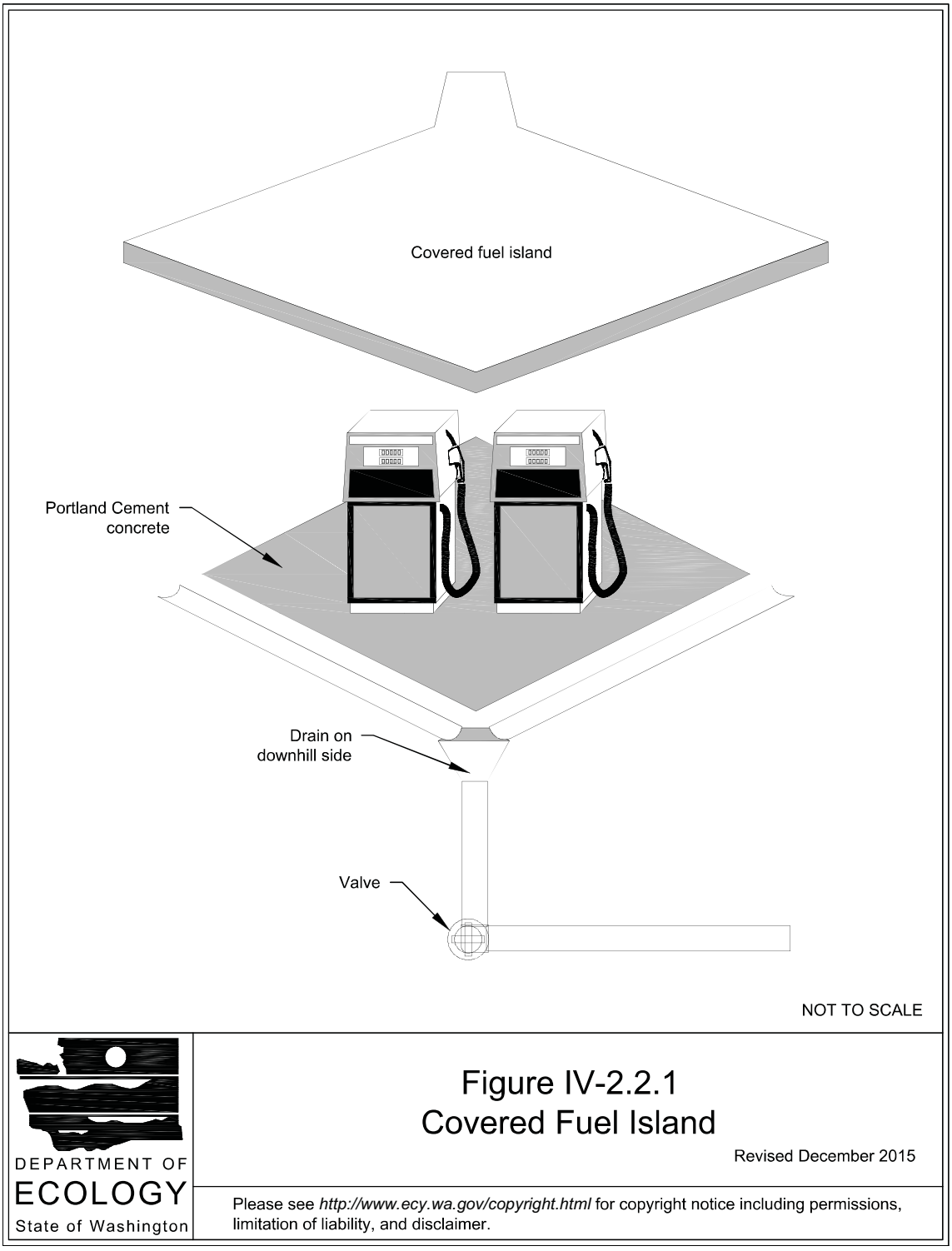
as dry adsorbent materials, on site to allow prompt cleanup of a spill.

- Train employees on the proper use of fuel dispensers. Post signs in accordance with the Uniform Fire Code (UFC) or International Fire Code (IFC). Post "No Topping Off" signs (topping off gas tanks causes spillage and vents gas fumes to the air). Make sure that the automatic shut-off on the fuel nozzle is functioning properly.
- The person conducting the fuel transfer must be present at the fueling pump during fuel transfer, particularly at unattended or self-serve stations.
- Keep drained oil filters in a suitable container or drum.

Applicable Structural Source Control BMPs:

- Design the fueling island to control spills (dead-end sump or spill control separator in compliance with the UFC or IFC), and to treat collected stormwater and/or wastewater to required levels. Slope the concrete containment pad around the fueling island toward drains; either trench drains, catch basins and/or a dead-end sump. The slope of the drains shall not be less than 1 percent (Section 7901.8 of the UFC, Section 5703.6.8 of the IFC).
- Drains to treatment facilities must have a normally closed shutoff valve. The spill control sump must be sized in compliance with Section 7901.8 of the UFC; or
- Design the fueling island as a spill containment pad with a sill or berm raised to a minimum of four inches (Section 7901.8 of the UFC) to prevent the runoff of spilled liquids and to prevent run-on of stormwater from the surrounding area. Raised sills are not required at the open-grate trenches that connect to an approved drainage-control system.
- The fueling pad must be paved with Portland cement concrete, or equivalent. Ecology does not consider asphalt an equivalent material.
- The fueling island must have a roof or canopy to prevent the direct entry of precipitation onto the spill containment pad (see Figure IV-2.2.1 Covered Fuel Island (p.631)). The roof or canopy should, at a minimum, cover the spill containment pad (within the grade break or fuel dispensing area) and preferably extend several additional feet to reduce the introduction of windblown rain. Convey all roof drains to storm drains outside the fueling containment area.

Figure IV-2.2.1 Covered Fuel Island



- Convey stormwater collected on the fuel island containment pad to a sanitary sewer system, if approved by the sanitary authority, or to an approved treatment system such as an oil/water separator and a basic treatment BMP. (Basic treatment BMPs are listed in Volume V (p.765) and include media filters and biofilters). Discharges from treatment systems to storm drains or surface water or to the ground must not display ongoing or recurring visible sheen and must not contain oil and grease.
- Alternatively, collect stormwater from the fuel island containment pad and hold for proper off-site disposal.
- Approval from the local sewer authority is required for conveyance of any fuel-contaminated stormwater to a sanitary sewer. The discharged stormwater must comply with pretreatment regulations (WAC 173-216-060). These regulations prohibit discharges that could "cause fire or explosion." State and federal pretreatment regulations define an explosive or flammable mixture, based on a flash point determination of the mixture. Stormwater could be conveyed to a sanitary sewer system if it is determined not to be explosive.
- Transfer the fuel from the delivery tank trucks to the fuel storage tank in impervious contained areas and ensure that appropriate overflow protection is used. Alternatively, cover nearby storm drains during the filling process and use drip pans under all hose connections.

Additional BMP for Vehicles 10 feet in height or greater

A roof or canopy may not be feasible at fueling stations that regularly fuel vehicles that are 10 feet in height or greater, particularly at industrial or WSDOT sites. At those types of fueling facilities, the following BMPs apply, as well as the applicable BMPs and fire prevention (UFC requirements) of this BMP for fueling stations:

- If a roof or canopy is impractical, the concrete fueling pad must be equipped with emergency spill control including a shutoff valve for drainage from the fueling area. Maintain the valve in the closed position in the event of a spill. An electronically actuated valve is preferred to minimize the time lapse between spill and containment. Clean up spills and dispose of materials off-site in accordance with S426 BMPs for Spills of Oil and Hazardous Substances (p.666).
- The valve may be opened to convey contaminated stormwater to a sanitary sewer, if approved by the sewer authority, or to oil removal treatment such as an API or CP oil/water separator, catchbasin insert, or equivalent treatment, and then to a basic treatment BMP. Discharges from treatment systems to storm sewer or surface water or to the ground must not display ongoing or recurring visible sheen and must not contain greater than a significant amount of oil and grease.

Ecology's Baseline General Permit Requirements:

Industries with log yards are required to obtain coverage under the Industrial Stormwater General Permit for discharges of stormwater associated with industrial activities. The permit requires preparation and on-site retention of an Industrial Stormwater Pollution Prevention Plan (SWPPP). Required and recommended operational, structural source control, and treatment BMPs are presented in detail in Ecology's Guidance Document: *Industrial Stormwater General Permit Implementation Manual for Log Yards*, Publication # 04-10-031. Ecology recommends that all log yard facilities obtain a copy of this document.

S414 BMPs for Maintenance and Repair of Vehicles and Equipment

Description of Pollutant Sources: Pollutant sources include parts/vehicle cleaning, spills/leaks of fuel and other liquids, replacement of liquids, outdoor storage of batteries/liquids/parts, and vehicle parking.

Pollutant Control Approach: Control of leaks and spills of fluids using good housekeeping and cover and containment BMPs.

Applicable Operational BMPs:

- Inspect all incoming vehicles, parts, and equipment stored temporarily outside for leaks.
- Use drip pans or containers under parts or vehicles that drip or that are likely to drip liquids, such as during dismantling of liquid containing parts or removal or transfer of liquids.
- Remove batteries and liquids from vehicles and equipment in designated areas designed to prevent stormwater contamination. Store cracked batteries in a covered non-leaking secondary containment system.
- Remove liquids from vehicles retired for scrap.
- Empty oil and fuel filters before disposal. Provide for proper disposal of waste oil and fuel.
- Do not pour/convey washwater, liquid waste, or other pollutants into storm drains or to surface water. Check with the local sanitary sewer authority for approval to convey water to a sanitary sewer.
- Do not connect maintenance and repair shop floor drains to storm drains or to surface water.
- To allow for snowmelt during the winter, install a drainage trench with a sump for

particulate collection. Use the drainage trench for draining the snowmelt only and not for discharging any vehicular or shop pollutants.

Applicable Structural Source Control BMPs:

- Conduct all maintenance and repair of vehicles and equipment in a building, or other covered impervious containment area that is sloped to prevent run-on of uncontaminated stormwater and runoff of contaminated water.
- Operators may conduct maintenance of refrigeration engines in refrigerated trailers in the parking area. Exercise due caution to avoid the release of engine or refrigeration fluids to storm drains or surface water.
- Park large mobile equipment, such as log stackers, in a designated contained area.

Additional applicable BMPs:

- S409 BMPs for Fueling At Dedicated Stations (p.629)
- S410 BMPs for Illicit Connections to Storm Drains (p.633)
- S412 BMPs for Loading and Unloading Areas for Liquid or Solid Material (p.639)
- S426 BMPs for Spills of Oil and Hazardous Substances (p.666)
- S427 BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers (p.667)
- S428 BMPs for Storage of Liquids in Permanent Aboveground Tanks (p.676)
- S429 BMPs for Storage or Transfer (Outside) of Solid Raw Materials, Byproducts, or Finished Products (p.679)
- S431 BMPs for Washing and Steam Cleaning Vehicles/ Equipment/ Building Structures (p.686)

Applicable Treatment BMPs: Convey contaminated stormwater runoff from vehicle staging and maintenance areas to a sanitary sewer, if allowed by the local sewer authority, or to an API or CP oil and water separator followed by a basic treatment BMP (See Volume V (p.765)), applicable filter, or other equivalent oil treatment system.

Note this applicable treatment BMP for contaminated stormwater.

Recommended Additional Operational BMPs:

- Store damaged vehicles inside a building or other covered containment, until successfully removing all liquids.
- Clean parts with aqueous detergent based solutions or non-chlorinated solvents such as kerosene or high flash mineral spirits, and/or use wire brushing or sand

blasting whenever practicable. Avoid using toxic liquid cleaners such as methylene chloride, 1,1,1-trichloroethane, trichloroethylene or similar chlorinated solvents. Choose cleaning agents that can be recycled.

- Inspect all BMPs regularly, particularly after a significant storm. Identify and correct deficiencies to ensure that the BMPs are functioning as intended.
- Avoid hosing down work areas. Use dry methods for cleaning leaked fluids.
- Recycle greases, used oil, oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic fluids, transmission fluids, and engine oils (see Appendix IV-C: Recycling/Disposal of Vehicle Fluids/Other Wastes* (p.721)).
- Do not mix dissimilar or incompatible waste liquids stored for recycling.

S415 BMPs for Maintenance of Public and Private Utility Corridors and Facilities

Description of Pollutant Sources: Passageways and equipment at petroleum product, natural gas, and water pipelines, and electrical power transmission corridors and rights-of-way can be sources of pollutants such as herbicides used for vegetation management, and eroded soil particles from unpaved access roads. At pump stations, waste materials generated during maintenance activities may be temporarily stored outside. Additional potential pollutant sources include the leaching of preservatives from wood utility poles, PCBs in older transformers, water removed from underground transformer vaults, and leaks/spills from petroleum pipelines. The following are potential pollutants: oil and grease, TSS, BOD, organics, PCBs, pesticides, and heavy metals.

Pollutant Control Approach: Control of fertilizer and pesticide applications, soil erosion, and site debris that can contaminate stormwater.

Applicable Operational BMPs:

- Implement S411 BMPs for Landscaping and Lawn/ Vegetation Management (p.634) and R.7 in Appendix IV-D: Regulatory Requirements That Impact Stormwater Programs (p.723) on Pesticide Regulations.
- When removing water or sediments from electric transformer vaults, determine the presence of contaminants before disposing of the water and sediments. This includes inspecting for the presence of oil or sheen, and determining from records or testing if the transformers contain PCBs. If records or tests indicate that the sediments or water are contaminated above applicable levels, manage these media in accordance with applicable federal and state regulations, including the federal PCB rules (40 CFR 761) and the state MTCA cleanup regulations (Chapter 173-340 WAC). Water removed from the vaults can be discharged in accordance with the federal 40 CFR 761.79, and state regulations (Chapter 173-201A WAC and

S421 BMPs for Parking and Storage of Vehicles and Equipment

Description of Pollutant Sources: Public and commercial parking lots such as retail store, fleet vehicle (including rent-a-car lots and car dealerships), equipment sale and rental parking lots, and parking lot driveways, can be sources of toxic hydrocarbons and other organic compounds, including oils and greases, metals, and suspended solids.

Pollutant Control Approach: If the parking lot is a **high-use site** as defined below, provide appropriate oil removal equipment for the contaminated stormwater runoff.

Applicable Operational BMPs:

- If washing a parking lot, discharge the washwater to a sanitary sewer, if allowed by the local sewer authority, or other approved wastewater treatment system, or collect washwater for off-site disposal.
- Do not hose down the area to a storm sewer or receiving water. Vacuum sweep parking lots, storage areas, and driveways regularly to collect dirt, waste, and debris.

Applicable Treatment BMPs: An oil removal system such as an API or CP oil and water separator, catch basin filter, or equivalent BMP, approved by the local jurisdiction, is necessary for parking lots meeting the threshold vehicle traffic intensity level of a high-use site.

Vehicle High-Use Sites

Establishments subject to vehicle high-use intensity are significant sources of oil contamination of stormwater. Examples of potential high use areas include customer parking lots at fast food stores, grocery stores, taverns, restaurants, large shopping malls, discount warehouse stores, quick-lube shops, and banks. If the PGIS for a high-use site exceeds 5,000 square feet in a threshold discharge area, an oil control BMP from the Oil Control Menu (in Volume V (p.765)) is necessary. A high-use site at a commercial or industrial establishment has one of the following characteristics: (Gaus/King County, 1994)

- Is subject to an expected average daily vehicle traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area: or
- Is subject to storage of a fleet of 25 or more diesel vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.).

S422 BMPs for Railroad Yards

Description of Pollutant Sources: Pollutant sources can include:

- Vegetated swale
- Dike
- Silt fence
- Check dam
- Gravel filter berm
- Sedimentation basin
- Proper grading.

(For design information refer to Chapter II-4 - Best Management Practices Standards and Specifications (p.261)).

S426 BMPs for Spills of Oil and Hazardous Substances

Description of Pollutant Sources: Federal law requires owners or operators of facilities engaged in drilling, producing, gathering, storing, processing, transferring, distributing, refining, or consuming oil and/or oil products to have a Spill Prevention and Emergency Cleanup Plan (SPECP). The SPECP is required if the above ground storage capacity of the facility, is 1,320 gallons or more of oil. Additionally, the SPECP is required if any single container with a capacity in excess of 660 gallons and which, due to their location, could reasonably be expected to discharge oil in harmful quantities, as defined in 40 CFR Part 110, into or upon the navigable waters of the United States or adjoining shorelines {40 CFR 112.1 (b)}. Onshore and offshore facilities, which, due to their location, could not reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines are exempt from these regulations {40 CFR 112.1(1)(i)}. State Law requires owners of businesses that produce dangerous wastes to have a SPECP. These businesses should refer to Appendix IV-D: Regulatory Requirements That Impact Stormwater Programs (p.723) R.6. The federal definition of oil is oil of any kind or any form, including, but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

Pollutant Control Approach: Maintain, update, and implement a Spill Prevention and Emergency Cleanup Plan.

Applicable Operational BMPs: The businesses and public agencies identified in Appendix IV-A: Urban Land Uses and Pollutant Generating Sources (p.695) required to prepare and implement a Spill Prevention and Emergency Cleanup Plan shall implement the following:

- Prepare a Spill Prevention and Emergency Cleanup Plan (SPECP), which includes:
    - A description of the facility including the owner's name and address.
    - The nature of the activity at the facility.

    - The general types of chemicals used or stored at the facility.
    - A site plan showing the location of storage areas for chemicals, the locations of storm drains, the areas draining to them, and the location and description of any devices to stop spills from leaving the site such as positive control valves.
    - Cleanup procedures.
    - Notification procedures used in the event of a spill, such as notifying key personnel. Agencies such as Ecology, local fire department, Washington State Patrol, and the local Sewer Authority, shall be notified.
    - The name of the designated person with overall spill cleanup and notification responsibility.
- Train key personnel in the implementation of the SPECP. Prepare a summary of the plan and post it at appropriate points in the building, identifying the spill cleanup coordinators, location of cleanup kits, and phone numbers of regulatory agencies to contact in the event of a spill.
- Update the SPECP regularly.
- Immediately notify Ecology, the local jurisdiction, and the local Sewer Authority if a spill may reach sanitary or storm sewers, ground water, or surface water, in accordance with federal and Ecology spill reporting requirements.
- Immediately clean up spills. Do not use emulsifiers for cleanup unless there is an appropriate disposal method for the resulting oily wastewater. Do not wash absorbent material down a floor drain or into a storm sewer.
- Locate emergency spill containment and cleanup kit(s) in high-potential spill areas. The contents of the kit shall be appropriate for the type and quantities of chemical liquids stored at the facility.

Recommended Additional Operational BMP: Spill kits should include appropriately lined drums, absorbent pads, and granular or powdered materials for neutralizing acids or alkaline liquids where applicable. In fueling areas: Package absorbent material in small bags for easy use and make available small drums for storage of absorbent and/or used absorbent. Deploy spill kits in a manner that allows rapid access and use by employees.

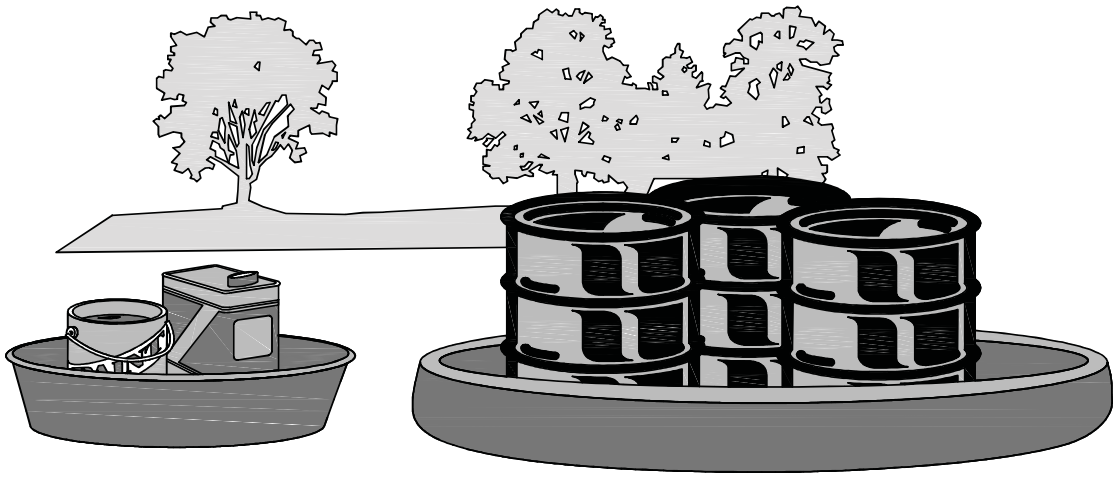
S427 BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers

Description of Pollutant Sources: Steel and plastic drums with volumetric capacities of 55 gallons or less are typically used at industrial facilities for container storage of liquids and powders. The BMPs specified below apply to container(s) located outside a

building. Use these BMPs when temporarily storing accumulated food wastes, vegetable or animal grease, used oil, liquid feedstock, cleaning chemicals, or Dangerous Wastes (liquid or solid). These BMPs do not apply when Ecology has permitted the business to store the wastes (Appendix IV-D: Regulatory Requirements That Impact Stormwater Programs (p.723) R.4). Leaks and spills of pollutant materials during handling and storage are the primary sources of pollutants. Oil and grease, acid/alkali pH, BOD, COD are potential pollutant constituents.

Pollutant Control Approach: Store containers in impervious containment under a roof, or other appropriate cover, or in a building. When collection trucks directly pick up roll-containers, ensure a filet is on both sides of the curb to facilitate moving the dumpster. For storage areas on-site for less than 30 days, consider using a portable temporary secondary system like that shown in Figure IV-2.2.8 Secondary Containment System (p.669) in lieu of a permanent system as described above.

Figure IV-2.2.8 Secondary Containment System



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State of Washington

Figure IV-2.2.8
Secondary Containment System

Revised December 2015

Applicable Operational BMPs:

- Place tight-fitting lids on all containers.
- Place drip pans beneath all mounted container taps and at all potential drip and spill locations during filling and unloading of containers.
- Inspect container storage areas regularly for corrosion, structural failure, spills, leaks, overfills, and failure of piping systems. Check containers daily for leaks/spills. Replace containers, and replace and tighten bungs in drums as needed.
- Businesses accumulating Dangerous Wastes that do not contain free liquids need only to store these wastes in a sloped designated area with the containers elevated or otherwise protected from storm water run-on.
- Secure drums when stored in an area where unauthorized persons may gain access in a manner that prevents accidental spillage, pilferage, or any unauthorized use (see Figure IV-2.2.9 Locking System for Drum Lid (p.671)).

Figure IV-2.2.9 Locking System for Drum Lid

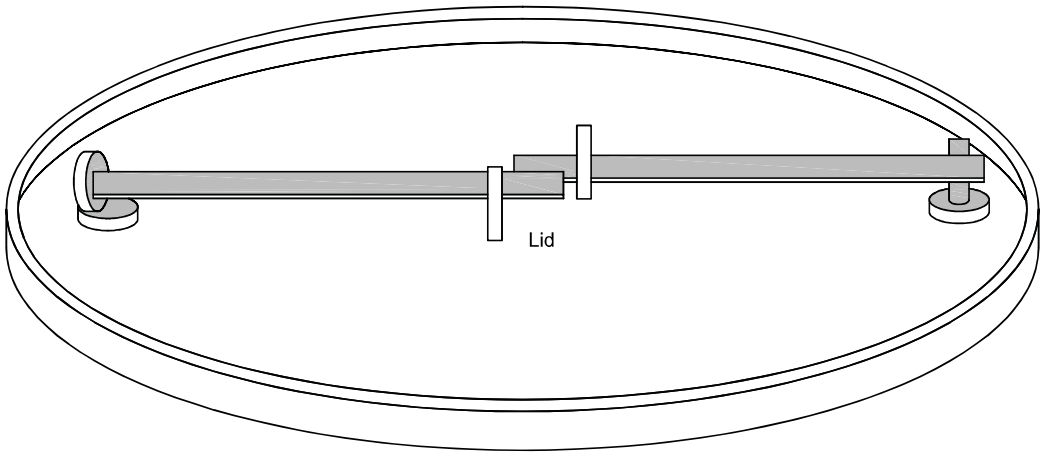

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Figure IV-2.2.9
Locking System for Drum Lid

Revised December 2015

- If the material is a Dangerous Waste, the business owner must comply with any additional Ecology requirements as specified in Appendix IV-D: Regulatory Requirements That Impact Stormwater Programs (p.723) R.3.
- Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code (Appendix IV-D: Regulatory Requirements That Impact Stormwater Programs (p.723) R.2).
- Cover dumpsters, or keep them under cover such as a lean-to, to prevent the entry of stormwater. Replace or repair leaking garbage dumpsters.
- Drain dumpsters and/or dumpster pads to sanitary sewer. Keep dumpster lids closed. Install waterproof liners.

Applicable Structural Source Control BMPs:

- Keep containers with Dangerous Waste, food waste, or other potential pollutant liquids inside a building unless this is not feasible due to site constraints or Uniform/International Fire Code requirements.
- Store containers in a designated area, which is covered, bermed or diked, paved and impervious in order to contain leaks and spills (see Figure IV-2.2.10 Covered and Bermed Containment Area (p.673)). Slope the secondary containment to drain into a dead-end sump for the collection of leaks and small spills.
- For liquid wastes, surround the containers with a dike as illustrated in Figure IV-2.2.10 Covered and Bermed Containment Area (p.673). The dike must be of sufficient height to provide a volume of either 10 percent of the total enclosed container volume or 110 percent of the volume contained in the largest container, whichever is greater.

Figure IV-2.2.10 Covered and Bermed Containment Area

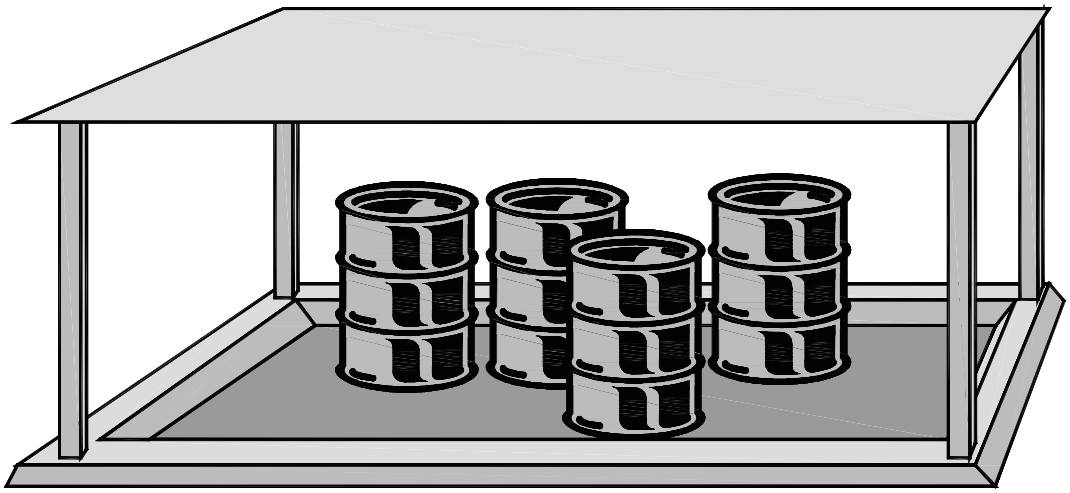

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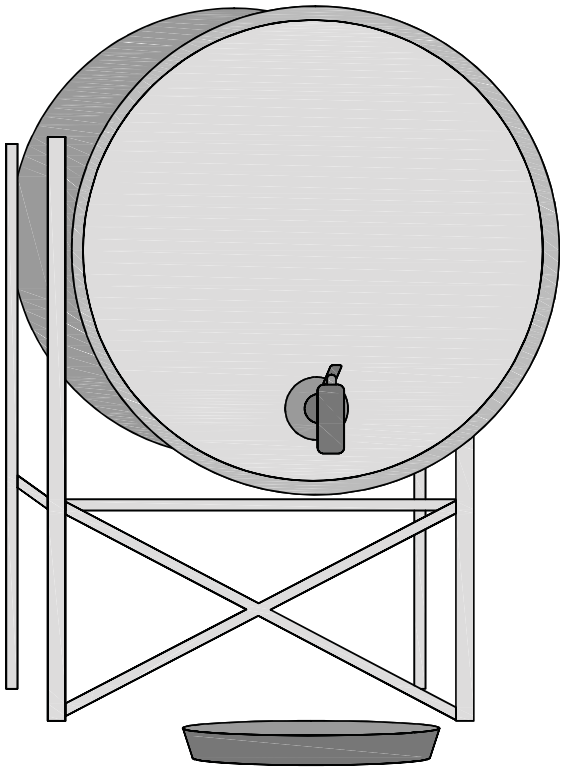
Figure IV-2.2.10
Covered and Bermed Containment Area

Revised December 2015

- Where material is temporarily stored in drums, use a containment system as illustrated, in lieu of the above system (see Figure IV-2.2.8 Secondary Containment System (p.669)).
- Place containers mounted for direct removal of a liquid chemical for use by employees inside a containment area as described above. Use a drip pan during liquid transfer (see Figure IV-2.2.11 Mounted Container - With Drip Pan (p.675)).

Figure IV-2.2.11 Mounted Container - With Drip Pan



*Note that the secondary containment is not shown in this figure

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Figure IV-2.2.11
Mounted Container - with Drip Pan

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Applicable Treatment BMP:

Note this treatment BMP for contaminated stormwater from drum storage areas.

- For contaminated stormwater in the containment area, connect the sump outlet to a sanitary sewer, if approved by the local Sewer Authority, or to appropriate treatment such as an API or CP oil/water separator, catch basin filter or other appropriate system (see Volume V (p.765)). Equip the sump outlet with a normally closed valve to prevent the release of spilled or leaked liquids, especially flammables (compliance with Fire Codes), and dangerous liquids. Open this valve only for the conveyance of contaminated stormwater to treatment.
- Another option for discharge of contaminated stormwater is to pump it from a dead-end sump or catchment to a tank truck or other appropriate vehicle for off-site treatment and/or disposal.

S428 BMPs for Storage of Liquids in Permanent Aboveground Tanks

Description of Pollutant Sources: Aboveground tanks containing liquids (excluding uncontaminated water) may be equipped with a valved drain, vent, pump, and bottom hose connection. Aboveground tanks may be heated with steam heat exchangers equipped with steam traps, if required. Leaks and spills can occur at connections and during liquid transfer. Oil and grease, organics, acids, alkalis, and heavy metals in tank water and condensate drainage can also cause stormwater contamination at storage tanks.

Pollutant Control Approach: Install secondary containment or a double-walled tank. Slope the containment area to a drain with a sump. Operators may need to discharge stormwater collected in the containment area to treatment such as an API or CP oil/water separator, or equivalent BMP. Add safeguards against accidental releases including protective guards around tanks to protect against vehicle or forklift damage, and tagging valves to reduce human error. *Tank water and condensate discharges are process wastewater that may need an NPDES Permit.*

Applicable Operational BMPs:

- Inspect the tank containment areas regularly for leaks/spills, cracks, corrosion, etc. to identify problem components such as fittings, pipe connections, and valves
- Place adequately sized drip pans beneath all mounted taps and drip/spill locations during filling/unloading of tanks. Operators may need valved drain tubing in mounted drip pans.
- Vacuum sweep and clean the tank storage area regularly, if paved.
- Replace or repair tanks that are leaking, corroded, or otherwise deteriorating.

Applicable Treatment BMPs:

Note this applicable treatment BMP for stormwater from petroleum tank farms.

- For an uncovered tank containment area, equip the outlet from the spill-containment sump with a normally closed shutoff valve. Operators may open this valve manually or automatically, only to convey contaminated stormwater to approved treatment or disposal, or to convey uncontaminated stormwater to a storm sewer. Evidence of contamination can include the presence of visible sheen, color, or turbidity in the runoff, or existing or historical operational problems at the facility. Use simple pH tests with litmus or pH paper for areas subject to acid or alkaline contamination.
- At petroleum tank farms, convey stormwater contaminated with floating oil or debris in the contained area through an API or CP-type oil/water separator (Volume V (p.765)), or other approved treatment prior to discharge to storm drain or surface water.

S429 BMPs for Storage or Transfer (Outside) of Solid Raw Materials, Byproducts, or Finished Products

Description of Pollutant Sources: Some pollutant sources stored outside in large piles, stacks, etc. at commercial or industrial establishments include:

- Solid raw materials
- Byproducts
- Gravel
- Sand
- Salts
- Topsoil
- Compost
- Logs
- Sawdust
- Wood chips
- Lumber
- Concrete
- Metal products

Contact between outside bulk materials and stormwater can cause leachate, and erosion of the stored materials. Contaminants may include TSS, BOD, organics, and dissolved salts (sodium, calcium, and magnesium chloride, etc.).

Pollutant Control Approach: Provide impervious containment with berms, dikes, etc. and/or cover to prevent run-on and discharge of leachate pollutant(s) and TSS.

Applicable Operational BMP: Do not hose down the contained stockpile area to a storm drain or a conveyance to a storm drain, or to a receiving water.

Applicable Structural Source Control BMP Options: The source control BMP options listed below are applicable to:

- Stockpiles greater than 5 cubic yards of erodible or water soluble materials such as:
- Soil
- Road deicing salts
- Compost
- Unwashed sand and gravel
- Sawdust
- Outside storage areas for solid materials such as:
- Logs
- Bark
- Lumber
- Metal products

Choose one or more of the following Source Controls:

- Store in a building or paved and bermed covered area as shown in Figure IV-2.2.13 Covered Storage Area for Bulk Solids (include berm if needed) (p.681), or;

Figure IV-2.2.13 Covered Storage Area for Bulk Solids (include berm if needed)

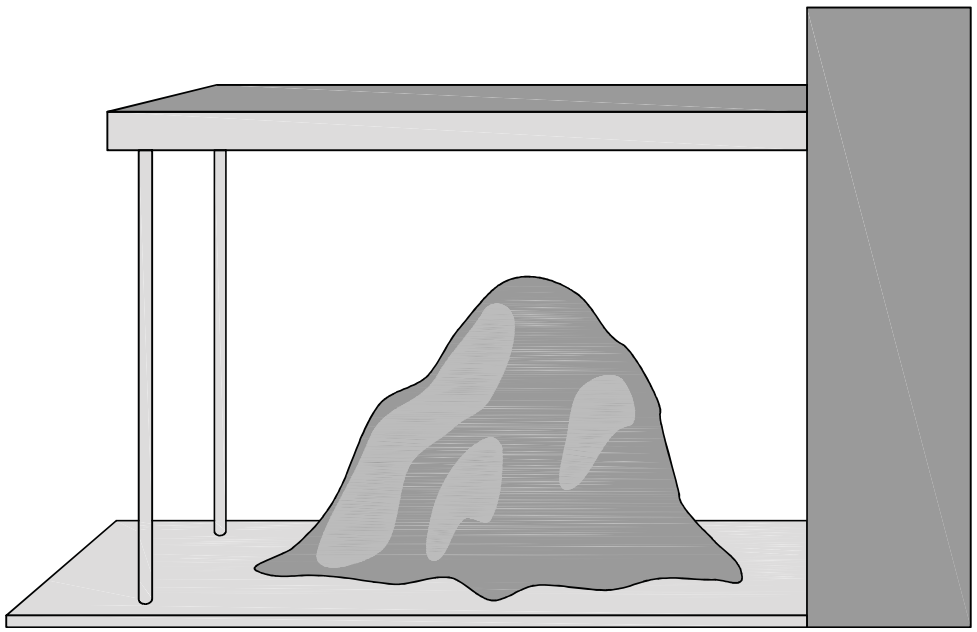

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Figure IV-2.2.13
Covered Storage Area for Bulk Solids
(include berm if needed)

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- Place temporary plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent) over the material as illustrated (see Figure IV-2.2.14 Material Covered with Plastic Sheeting (p.683)), or;

Figure IV-2.2.14 Material Covered with Plastic Sheeting

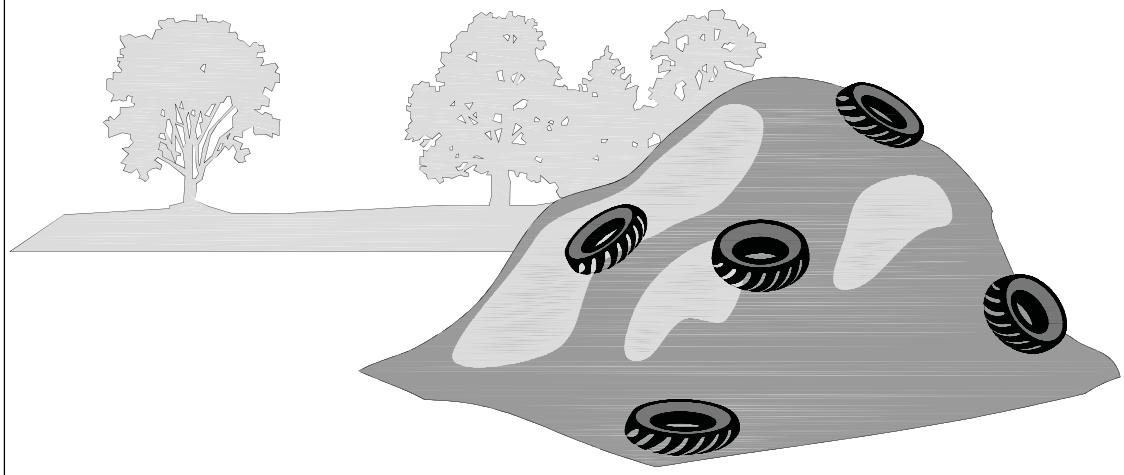

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Figure IV-2.2.14
Material Covered with Plastic Sheeting

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- Pave the area and install a stormwater drainage system. Place curbs or berms along the perimeter of the area to prevent the run-on of unconta-minated storm-water and to collect and convey runoff to treatment. Slope the paved area in a man-ner that minimizes the contact between stormwater (e.g., pooling) and leachable materials in compost, logs, bark, wood chips, etc.
- For large uncovered stockpiles, implement containment practices at the perimeter of the site and at any catch basins as needed to prevent erosion and discharge of the stockpiled material off-site or to a storm drain. Ensure that no direct discharge of contaminated stormwater to catch basins exists without conveying runoff through an appropriate treatment BMP.

Applicable Treatment BMP: Convey contaminated stormwater from the stockpile area to a wet pond, wet vault, settling basin, media filter, or other appropriate treatment sys-tem depending on the contamination.

Recommended Additional Operational BMPs:

- Maintain drainage areas in and around storage of solid materials with a minimum slope of 1.5 percent to prevent pooling and minimize leachate formation. Areas should be sloped to drain stormwater to the perimeter for collection or to internal drainage “alleyways” where no stockpiled material exists.
- Sweep paved storage areas regularly for collection and disposal of loose solid materials.
- If and when feasible, collect and recycle water-soluble materials (leachates).
- Stock cleanup materials, such as brooms, dustpans, and vacuum sweepers near the storage area.

S430 BMPs for Urban Streets

Description of Pollutant Sources: Urban streets can be the source of vegetative debris, paper, fine dust, vehicle liquids, tire and brake wear residues, heavy metals (lead and zinc), soil particles, ice control salts, domestic wastes, lawn chemicals, and vehicle combustion products. Street surface contaminants contain significant concentrations of particle sizes less than 250 microns (Sartor and Boyd, 1972).

Pollutant Control Approach: Conduct efficient street sweeping where and when appro-priate to minimize the contamination of stormwater. Do not wash street debris into storm drains.

Facilities not covered under the Industrial Stormwater General Permit may consider a minimum amount of water washing of streets. All facilities must comply with their local stormwater requirements for discharging to storm sewers. Municipal NPDES permittees

Vehicle and Equipment Washwater Discharges

Best Management Practices Manual

DEPARTMENT OF ECOLOGY
State of Washington

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Vehicle and Equipment Washwater Discharges

Best Management Practices Manual

by;

Program Development Services Section

Water Quality Program
Washington State Department of Ecology
Olympia, Washington

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Table of Contents

List of Figures

Acknowledgements

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Section 1

Introduction

This guidance manual discusses the environmental concerns over discharges from washing or steam cleaning the exterior surfaces of vehicles and equipment such as cars and/or trucks, and light or heavy equipment. It provides Best Management Practices (BMPs) for the collection, treatment, and disposal of washwater generated by large/commercial vehicle/equipment washing operations in Section 2. This document also provides guidance for pollution prevention by offering the "do's and don'ts" of discharge control for some common types of operations in Section 3.

Why should we be concerned with vehicle washwater

Washwater from vehicle/equipment cleaning activities may contain significant quantities of oil and grease, suspended solids, heavy metals, and organics, as well as pollutants from detergents. These pollutants can be toxic and harmful to living organisms, including fish. The ingestion of the affected fish by people can also be harmful. Washwater from pressure washing and steam cleaning are likely to have more pollutants than cold, low-pressure water. This document recommends limiting those cleaning methods to frequent users with appropriate controls. Pay special attention to your operation to see if these are listed as "don'ts" of discharge control.

Oil and grease contain hydrocarbon compounds, some of which can injure or kill aquatic life even at low concentrations. Oil and grease can also coat fish gills and prevent oxygen from entering water, starving fish and other aquatic life.

Some detergents may contain metals such as arsenic. Low concentrations of dissolved metals can be toxic to living organisms. Detergents contain emulsifiers that break up oil particles. Emulsifiers can also cause harm to aquatic life. Many detergents also contain nutrients such as phosphorous and nitrogen. High nutrient levels in streams and lakes can harm water quality by stimulating excess weed and algae growth. This overgrowth causes unpleasant odors and sights, and depletes oxygen levels necessary to support fish life.

What operations does this document cover

The operations listed below are just a few that discharge washwater and have the opportunity to take actions that could prevent pollution in Washington State waters. The manual includes a list of Best Management Practice recommendations for each operation in this document.

BMPs discussed in Section 2 include:

- Businesses that regularly wash vehicle/equipment exterior surfaces.

BMPs discussed in Section 3 include:

- At-site rinsing of farm and construction vehicle/equipment
- Mobile washers
- Washing vehicle exteriors at new and used car/truck dealerships
- Small dischargers (1 or 2 pieces of equipment and or vehicles per day and not to exceed 8 per week)
- Charity car washes

What operations does this document not cover

The washwater generated from the washing of tank truck interiors is not included in this guidance document. Operators must collect, treat, and dispose of washwater generated from cleaning of tank truck interiors in accordance with a treatment and disposal system approved by the Washington State Department of Ecology or a municipality with delegated pretreatment authority. The required treatment will vary with the cargo hauled by the tanker truck. In short, discharge of these washwaters to surface waters, municipal wastewater systems, or to the ground requires a permit or a discharge authorization.

Engine cleaning and the cleaning operations that use acids, caustics, or other metal brighteners should follow the BMPs for discharges to municipal wastewater systems or use closed-loop water recycling systems.

The BMPs in this document may not be adequate to protect ground- water resources in sensitive areas, such as:

- Sole source aquifer
- Wellhead protection areas
- Other designated groundwater protection areas.

Washwater discharge options

There are three options available for the disposal of vehicle washwater (one is not recommended).

- Preferred option: Zero discharge, or closed-loop water recycling
- Second option: Discharge to a municipal wastewater system
- Third option (not recommended): Discharge to land or ground

Of these options, zero discharge, or the use of water recycling systems is the preferred option and is strongly encouraged. The second most preferred option is to discharge to a municipal wastewater system.

Due to the high degree of treatment and extensive (and costly) monitoring that are required for discharges to a storm sewer, or the ground, Ecology does not recommend the third option.

Ecology must issue a National Pollutant Discharge Elimination System (NPDES) Permit or a State Waste Discharge Permit for such discharges. For more information, contact your closest Ecology regional office. (See list at end of this document.)
Note that this update of the vehicle wash guidance does not include the discharge of washwater to surface water bodies. Ecology does not consider discharge of washwater to surface water bodies as a practice that uses all known, available, and reasonable methods of treatment (AKART). Ecology guidance requires all Best Management Practices to use AKART.

Zero discharge or closed-loop water recycling systems

A closed-loop system uses recycled water and has zero discharge. However, closed-loop water recycling systems may use chemicals to help remove solids from the waste. Systems that do use chemicals generate chemical sludge. Operators of systems that generate chemical sludge must safely handle and dispose of the sludge in a manner that will not cause pollution of the waters of the state. In addition, the closed-loop recycling systems may have a reservoir to store the recycled water for reuse. It may be necessary to discard the reservoir water periodically as oil, grease, and other pollutants accumulate. Follow the steps below for safe handling and disposal of the sludge and the contaminated reservoir water generated by these systems:

- The sludge generated in these systems seldom designates as a hazardous or dangerous waste (per Chapter 173-303 WAC, Dangerous Waste Regulations), and it can usually be disposed of in a solid waste landfill. To be sure, check with your local health department and/or landfill operator. If still in doubt, test the sludge to determine if it designates as a hazardous or dangerous waste.
- If the sludge designates as a hazardous or dangerous waste, it must be disposed of through a permitted treatment, storage, and disposal (TSD) facility. Also, requirements for storage of dangerous wastes (Chapter 173-303 WAC), such as secondary containment, would apply to a sludge that designates as a hazardous or dangerous waste.
- Discharge the decanted contaminated reservoir water to a municipal wastewater system with the prior authorization from the local sewer authority.

Discharges to a municipal wastewater system

Discharges to a municipal wastewater system receive treatment by the municipal treatment facility before final discharge to the environment (rivers, lakes, seawater, or the land). Dischargers of vehicle washwater must obtain approval from the local sewer authority prior to discharge to the municipal wastewater system. Many local sewer authorities have limits on pollutant concentrations in the discharge that dischargers must meet. Local sewer limits are to:

- Protect water quality of the receiving water body
- Check decanted washwater quality, making sure that it is a treatable product
- Prevent operational problems at the sewage treatment plant and in the collection system
- Protect worker health and safety

This manual contains some recommendations for the collection and treatment of the washwater prior to discharge to a municipal wastewater system (see Section 2).

Discharges to the ground (not recommended)

Treat discharges to the ground to prevent ground water pollution. You must permit these discharges through a State Waste Discharge Permit. A grassy ground surface can provide treatment for small and infrequent discharges as long as cold, low-pressure water is used and it contains no soaps, emulsifiers, or detergents. No pressure washing or steam cleaning should be discharged to the ground. Section 3 of this manual provides some do's and don'ts recommendations for such dischargers.

Regardless of the number and type of vehicle washing activity, all discharges to ground water must comply with state ground water standards (Chapter 173-200 WAC) and may require a State Waste Discharge Permit. In some areas of the state, such as those over sole source aquifers, regulations may not allow discharge to ground or may require further controls. In those sensitive areas, closed-loop water recycling or other options would be necessary. For more information, contact your nearest Ecology office or local government.

Section 2

BMPs for collection, treatment, and disposal of washwater

This section contains the mandatory and recommended BMPs for collection, treatment, and disposal of washwater generated from large/commercial operations washing vehicle/equipment exterior surfaces. The following provides BMPs for treatment and disposal options. These are the BMPs for closed loop discharges and discharges to a municipal wastewater system.

When feasible, Ecology strongly recommends the use of closed-loop water recycling systems to treat and reuse the washwater over discharges to the municipal wastewater systems or the ground.

Where a municipal wastewater system is accessible, discharge the washwater to the municipal system. Discharge to the municipal wastewater system requires the approval of the local sewer authority.

Washwater discharges to the ground (not recommended) must be adequately treated so as not to cause violation of state ground water standards (Chapter 173-200 WAC) and covered by a State Waste Discharge Permit.

Washwater containment and collection

Conduct vehicle and/or equipment washing in one of the preferred designated areas described below.

- At a commercial washing business in which the washing occurs in an enclosure that drains to a municipal wastewater system, a treatment facility, or a dead end sump.
- In a building constructed specifically for washing of vehicles and equipment, plumbed to drain to a municipal wastewater system, a treatment facility, or a dead end sump.
- In an outside location designated as a wash area, without walls and/or roof and meeting the guidance for uncovered wash areas outlined below.

Uncovered wash areas containment and collection

The designated uncovered wash area should be:

- Constructed as a containment pad in paved areas to prevent the run-on of stormwater from adjacent areas.
    - Slope the spill containment area to collect washwater in a containment pad.
    - Drain the wash area with perimeter drains, trench drains or catchment drains.
    - Size the containment pad to extend out a minimum of four feet on all sides of the vehicles and/or equipment being washed.

- Built to convey the washwater
  - To a sump (like a grit separator) and then to a sanitary sewer (if allowed by the local Sewer Authority) or
  - Other appropriate wastewater treatment or recycle system.

    An NPDES permit may be required for any washwater discharge to a storm drain after treatment. Contact the Ecology regional office for NPDES Permit requirements.
- Equipped with a positive control outlet valve.
  - The positive control outlet valve is located prior to the connection to the sanitary sewer. (not shown in Figure 1)
  - The valve provides spill control by storing spills within live containment volume, and oil/water separation. It allows the spill to be cleaned up prior to opening flow to the sanitary sewer.
  - Size the minimum live storage volume to contain the maximum expected daily washwater flow plus sludge storage volume below the outlet pipe.
  - Shut the outlet valve during the washing cycle to collect the washwater in the sump.
  - The valve should remain shut for at least two hours following the washing operation to allow the oil and solids to separate before discharge to a sanitary sewer
- Equipped with an inlet control valve in the discharge pipe, closed when washing is not occurring.
  - The inlet control valve is located immediately after the drain from the pad and prior to the live containment and oil/water separation.
  - This prevents the entry of uncontaminated stormwater into the pretreatment/ treatment system.
  - The stormwater can then drain into the conveyance/discharge system outside of the wash pad (essentially bypasses the washwater treatment/conveyance system).
  - Clean the concrete pad thoroughly until there is no foam or visible sheen in the washwater prior to closing the inlet valve and allowing uncontaminated stormwater to overflow and drain off the pad. (See Figure 1)
- Post signs to inform people of the operation and purpose of the valves.

Also:

- Ecology recommends a portland cement concrete spill containment pad for steam cleaning.
- The wash area should be well marked at gas stations, multifamily residences, and any other business where nonemployees may wash vehicles. The posting will include a statement forbidding the changing of oil in the wash area and the location of the nearest oil recycling facility. See Figure 1 for an illustration of these requirements.
- You may manually operate the positive control outlet valve, but a pneumatic or electric valve system is preferable. The valve may be on a timer circuit where it is opened upon completion of a wash cycle. The timer would then close the valve after the sump or separator is drained (Figure 1).

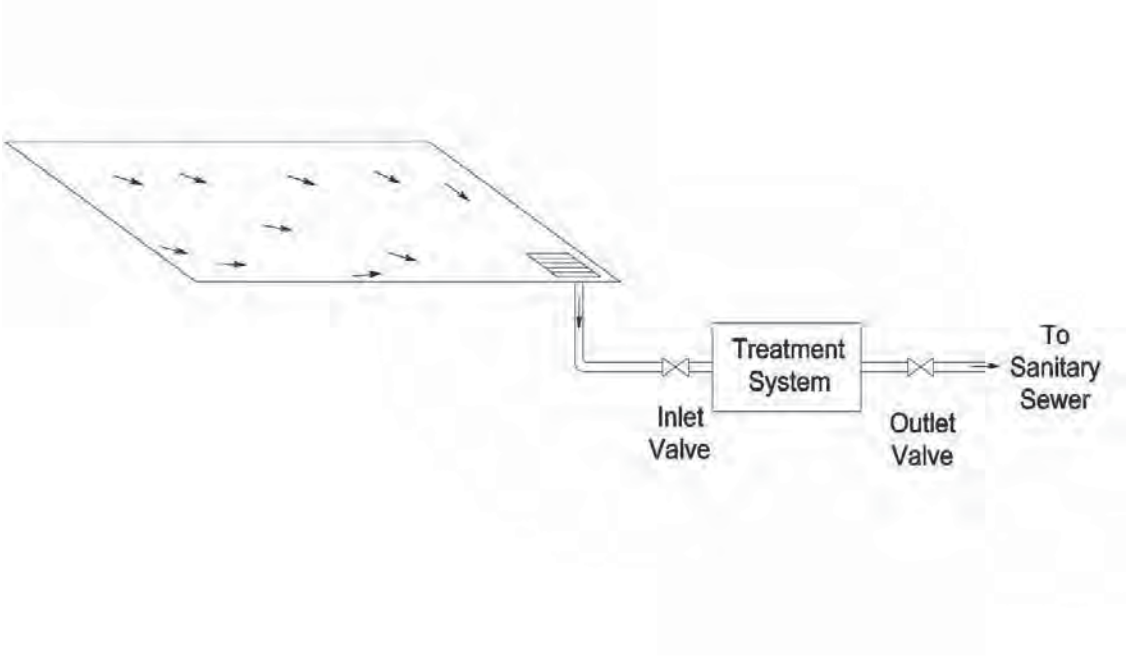


Figure 1. Requirements for an Uncovered Wash Area

Discharges to a municipal wastewater system

Treatment System

Treat the washwater to meet the local sewer authority's discharge requirements. In general, local sewer authorities have pollutant concentration limits for total suspended solids (TSS), oil and grease (O & G), and metals. Use a gravity oil/water separator such as an American Petroleum Institute (API) or baffle separator or Coalescing Plate Separator (CPS) prior to discharge to a municipal wastewater system. The expected effluent TSS and Oil & Grease (O & G) concentrations are less than 100 ppm and 50 ppm, respectively. However, the type and quantity of the detergent used may reduce the efficiency of the gravity separation (e.g. API/baffle separator) systems for total O & G removal.

Figures 2 and 3 show examples of the API and CPS systems. The API separator has a grit/sludge removal baffle allowing solids separation. A pretreatment unit for solids separation (e.g., a grit trap) may have to precede the CPS system. The flow residence time through the API system should not be less than 30 minutes at the highest expected discharge flow. Additional design information for oil/water separators is available in BMP T11.10 and T11.11 in Volume V of the Stormwater Management Manual for Western Washington (SWMMWW).

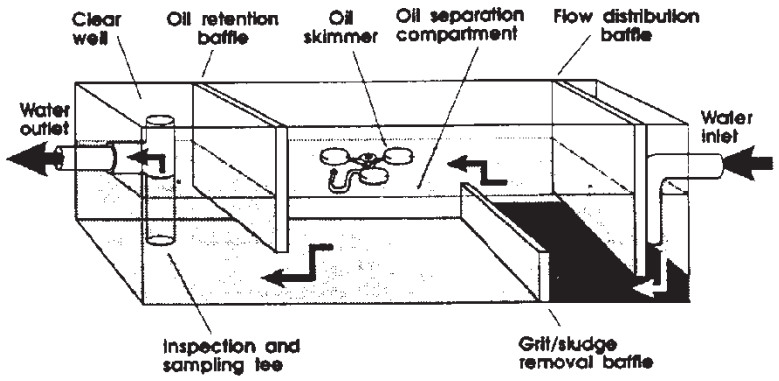


Figure 2. An API Separator

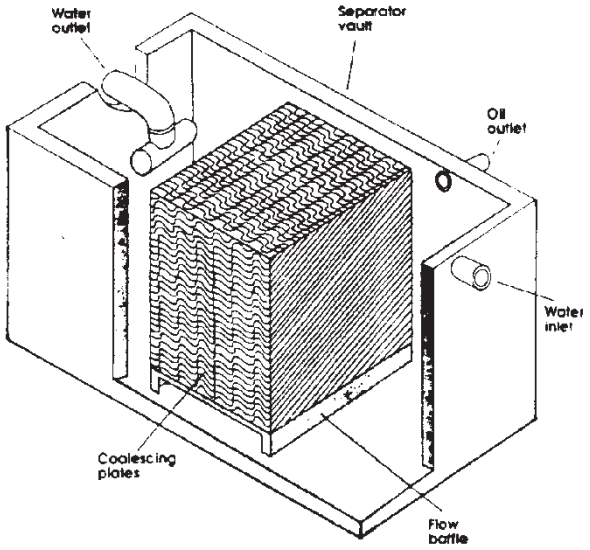


Figure 3. A Coalescing Plate Separator

Another treatment option is a containment sump. Figure 4 is an illustration of a typical containment sump.

Note the turn down elbow that provides a gravity separation prior to overflow. The outlet valve should be a positive control valve between the containment sump and the municipal sewer. Size the sump's minimum containment volume to accommodate the maximum expected daily volume plus the sludge storage volume below the invert of the outlet pipe.

Shut the outlet valve during the washing operation and the washwater will be stored in the volume provided. The valve should remain shut at least two hours following the last washing operation to allow oil and solids separation under a quiescent condition. After this quiescent period, open the valve to allow discharge to the municipal sewer. Operate the containment sump valve on a daily cycle. Larger containment volumes can store more than one-day's flow.

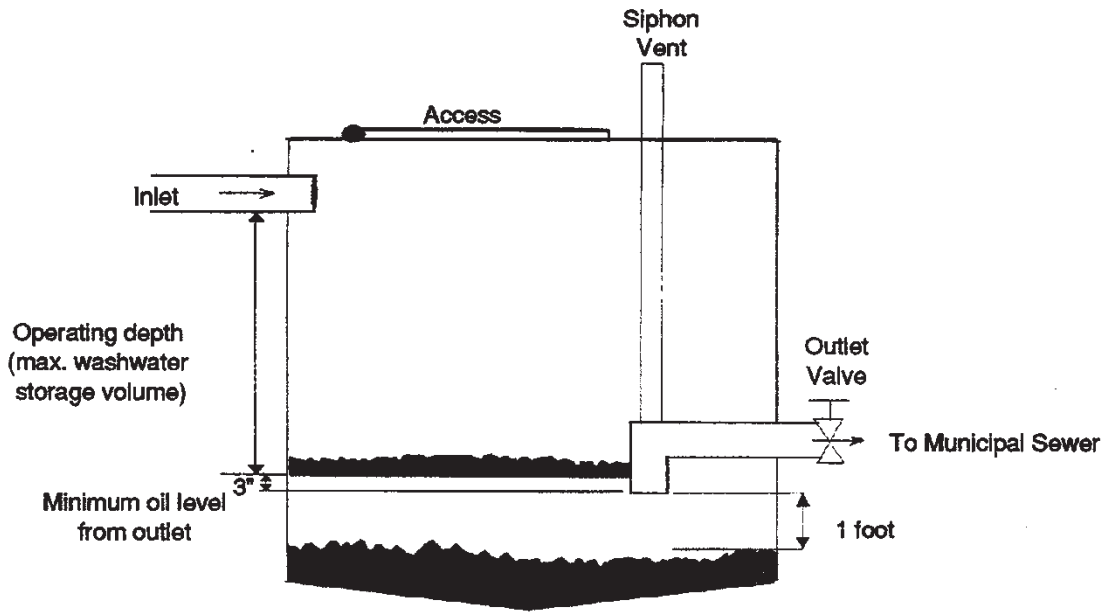


Figure 4.A Typical Containment Sump

Operation: During the washing operation, close the outlet valve. Washwater is stored in the sump. The valve should remain shut for a quiescent period of at least 2 hours after the last washing operation. Discharge the washwater to the municipal sewer by opening the outlet value after the quiescent period.

The sludge concentration generated in a containment sump can be quite variable. In an EPA study, the median TSS concentration from the wand type car wash facilities was 659 ppm (the range was from 106 to 2970 ppm). Based on this median TSS concentration and assuming a sludge solids concentration of 5 percent, the sludge volume generated from 3,000 gallons of washwater is approximately 40 gallons.

The same EPA study reported the median TSS concentrations from the roll-over and tunnel type car washes as 158 and 101 ppm, respectively (the ranges were 30-576 ppm for roll-over type and 36-848 ppm for tunnel type). To prevent resuspension and discharge of the solids to the municipal sewer, the sludge depth should remain a minimum of one foot below the outlet. In addition, the floating oily layer should stay well above the outlet pipe to prevent its discharge to the municipal sewer.

Maintenance

Inspect any grit traps daily and clean as needed, but not less than once per week. Operate and maintain the gravity separation unit according to the manufacturer's recommended maintenance procedures at the specified frequencies or as needed.

- Check oil accumulation in an API system at least once a week or more frequently as needed. If oil accumulation exceeds three inches, clean the unit.
- Generally, the manufacturer recommends cleaning the horizontal coalescing plates in a CPS system when the dirt and grit have reduced the gap between the plates by 40 percent.

These requirements may be different for each case and, ultimately, the owner/operator is responsible for the proper and periodic maintenance and operation of the separator in use.

Inspect the containment sump (Figure 4) during each fill and discharge cycle and clean before the accumulating sludge and oil layers have reached the limits shown in the figure. Keep a log of all maintenance activities on-site and make it available to Ecology or the local sewer authority when requested. The log should include the type of maintenance activity, name of person responsible for the activity, and time and date of the activity.

Solids and other materials removed from the treatment system must be disposed at a location and in a manner to not cause pollution of any waters of the state. If the wastes do not designate as a hazardous or dangerous waste, disposal in a solid waste landfill with the approval of the jurisdictional health authority, may be a practical option. Contact waste disposal companies for help in cleaning and disposal of the separator's content.

Discharges to ground

Discharges to ground are allowed only when cold, low-pressure water is used and it contains no soaps, emulsifiers, or detergents. Ecology may approve any other discharges to ground under a State Waste Discharge Permit with an Engineering Report describing the proposed treatment for the discharge. The treatment system must produce an effluent that will not cause a violation of the Washington State Groundwater Quality Standards.

Section 3

On-site washing of farm and construction vehicles/ equipment

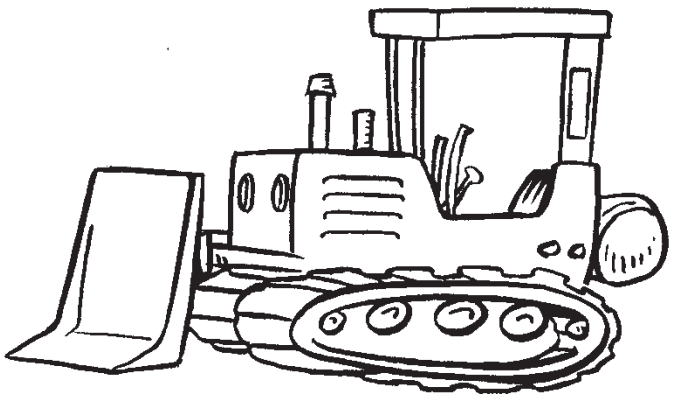
The following applies when performing rinsing to prevent tracking of dirt, sediment, and floatable materials and to remove pesticide residuals from farm and construction vehicle/equipment exterior surfaces.

Do

- Farm and construction vehicle/equipment should be field washed with cold, low-pressure water over a grassy ground or dirt area where it can soak into the ground, evaporate, or otherwise be kept out of surface waters or storm sewers.
- Rinse pesticide truck exteriors with water in the field to remove pesticide chemical residues before bringing trucks to a central washing area.
- Where rinsing occurs on impervious surfaces, use a catch basin with a gravity separator (e.g. an oil/water separator). Discharge from the gravity separator should be directed to a sanitary sewer where available. If a sanitary sewer is not available, the discharge from the gravity separator should go to a grassy ground surface or dirt area.

Don't

- Do not use soap, detergents, or cleaners.
- Do not discharge to a storm sewer or surface water.
- Do not pressure wash vehicles.
- Do not steam clean.



Mobile washers

Do

- Washwater must be collected and discharged to a municipal wastewater system; or reused in a closed-loop water recycling system; or collected and hauled to a treatment facility.
- Mobile washing operations must be performed on an impervious surface (i.e., concrete, plastic, or other) to contain and collect the washwater. The impervious surface must extend to a minimum of 4 feet on all sides of vehicle/equipment to trap overspray.
- Mobile washers must use a portable impervious surface material when washing on a porous surface. Use a portable wash pit, vacuum recovery unit, or comparable device to collect washwater for proper disposal.
- Where washing is over an impervious area draining to a storm sewer, place a temporary plug in the storm drain and pump the accumulated water to the nearest wastewater system or collect washwater and haul it to a treatment facility.
- Clean or rinse the wash area with water before a rain event. Collect and discharge the washwater to the nearest wastewater system.
- Consult your local sewer utility about diverting washwater to the sanitary sewer through collection and pumping.

Don't

- Do not discharge to the ground, storm sewers, or surface waters.

Rinsing vehicle exteriors at new and used car/ truck dealerships

The following recommendations are for rinsing vehicles with cold water. Cleaning operations using soaps, detergents, or other cleaners should contain the washwater and discharge it to a municipal wastewater system with approval from the local sewer authority or use closed-loop water recycling systems (see Chapter 2).

Do

- Rinse vehicles in the parking stalls as long as only cold water is used.
- Direct the rinse water away from storm drains to a grassy swale or a landscaped area.
- If the site allows rinse water to run off to a storm drain, retrofit the drain with catch basins to trap sediment and floating oils (see below).

Don't

- Do not use soap, detergents, or cleaners.
- Do not discharge to surface water or a storm sewer without a catch basin (see below) or an equivalent treatment system.
- Do not steam or pressure clean engines.
- Do not steam clean

Catch basins for trapping sediment and oil

- Each catch basin serves a maximum of one acre of an impervious (pavement, cement, etc.) surface area.
- The inlet must have a normally closed shut off valve when washing is occurring. This prevents the discharge of rinsewater into the stormwater system.
- A typical catch basin's size is 2.5'x 2.5' by 48" deep. A grated cover on the basin must trap large floating debris and the outlet pipe must contain an inverted elbow.
- A sediment sump must be 24" minimum below the outlet pipe invert.
- Clean catch basins by removing solids and oil when 30 percent full with solids, or at least once a year. Clean catch basins during dry weather to prevent discharge of pollutants into the storm sewer. Solids and oil must be disposed of in a dumpster with prior notification of the local health department.

Small dischargers

Small dischargers are defined as those where washing is carried out infrequently:

- Involving 1 or 2 pieces of equipment and/or vehicles per day, not exceeding eight during any week; and/or
- Discharging less than 100 gallons of washwater each day; and

- Washing of the vehicle/equipment is not the primary business activity of the discharges. For example, mobile washers are not small dischargers. Follow recommendations in this manual for "mobile washers."

Do

Discharge to a wastewater collection system when possible, with permission of the system operator. If you are not sure the nearby drain is a sanitary sewer, contact your local sewer utility.

- If a wastewater collection system is not available, discharge to a landscaped, grassy ground surface, or dirt area where the washwater can soak into the ground or evaporate.
- Keep a distance of at least 100 feet from a wellhead if letting washwater soak into the ground.
- Only cold, low-pressure water may be used and it contains no soaps, emulsifiers, or detergents.

Don't

- Do not discharge to surface water or a storm sewer.
- Do not clean engines or do any cleaning involving soaps, emulsifiers, detergents, strong acids, caustics, or other metal brighteners.
- Do not pressure wash vehicles.
- Do not steam clean.

Charity car washes

Do

- Discharge washwater only to a sanitary sewer.
- When washing is over an impervious area like pavement that drains to a storm sewer or dry well, place a temporary plug in the storm drain and pump the accumulated water to the nearest wastewater system. Talk to your local sewer utility about diverting washwater to the sanitary sewer through collection and pumping.
- Minimize the amount of soaps and detergents used.

Don’t

- Do not discharge to storm sewers, the ground, or surface waters.
- Do not clean engines or do any cleaning involving soaps, emulsifiers, detergents, strong acids, caustics, or other metal brighteners.
- Do not pressure wash vehicles.
- Do not steam clean.

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Appendix

Applicable Washington State law and regulations

Chapter 90.48 RCW, Water Pollution Control, requires "...the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington."

Washington State Regulations promulgated by the Department of Ecology to fulfill the intent of Chapter 90.48 RCW are:

Chapter 173-200 WAC, Water Quality Standards for Ground Waters of the State of Washington.

Chapter 173-201A WAC, Water Quality Standards for Surface Waters of the State of Washington.

Chapter 173-216 WAC, State Waste Discharge Permit Program, applicable to discharge of waste materials from industrial, commercial, and municipal operations into ground and surface waters of state and into municipal wastewater systems.

Chapter 173-218 WAC, Underground Injection Control Program, prohibits discharge of wastewater into wells.

Chapter 173-220 WAC, National Pollutant Discharge Elimination System (NPDES) Program, applicable to the discharge of pollutants and other wastes and materials to the surface waters of the state, operating under state law as a part of the NPDES created by section 402 of the Federal Water Pollution Control Act (FWPCA).

Chapter 173-240 WAC, Submission of Plans and Reports for Construction of Wastewater Facilities, requires that engineering reports and plans and specifications for the project shall be submitted to and approved by the department (Ecology).

Contacts

If you have questions or want more information, please contact Dan Gariépy at Ecology Headquarters office in Lacey at 360-407-6470 (voice), dan.gariepy@ecy.wa.gov (e-mail); Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Northwest Region	425-649-7000
Eastern Region	509-329-3400
Southwest Region	360-407-6300
Central Region	509-575-2490

Public Works Facility
Stormwater Pollution Prevention Plan
Brier, Washington

Appendix B
INSPECTION AND REPORTING FORMS

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MUNICIPAL STORMWATER SOURCE CONTROL INSPECTION REPORT

MS4 Source Control
Business Inspection Form

Section A: General Data

Inspection Date	Entry Time:	Exit Time:	Receiving Waters:	Inspector(s)	Facility Type
					Institutional ☐ Commercial ☐ Industrial ☐

Discharges to: (check all that apply)	Weather Conditions	
Surface Water ☐ Ground Water ☐ MS4 ☐		Initial ☐ Follow-Up ☐ Complaint Response Visit ☐

Section B: Facility Data

Name and Location of Site

Site Name:
Street:
City/County:
Zip Code:

Business owns site ☐
Business is a tenant ☐

Business NAICS Code(s)

Facility Type/Major Business Activity:

Additional NPDES Permits:

GENERAL INDUSTRIAL ☐
INDIVIDUAL NPDES ☐
GENERAL BOATYARD ☐
GENERAL SAND & GRAVEL ☐

Site Contact(s):	
Name:	Name:
Phone Number:	Phone Number:
Email:	Email:
Job Title:	Job Title:

	Yes	No
Samples Taken?	☐	☐
Photos Taken?	☐	☐

Section C: Stormwater Pollution Prevention Plan

	YES	NO	N/A
Facility has a SWPPP/Spill Plan Onsite?	☐	☐	☐
Facility has map of onsite stormwater system?	☐	☐	☐
Facility has stormwater drains labelled?	☐	☐	☐
Catch Basins/Inlets regularly inspected?	☐	☐	☐
Catch Basins/Inlets properly maintained?	☐	☐	☐
Indication of an illicit discharge?	☐	☐	☐
Indication of an illicit connection?	☐	☐	☐
Staff training on BMP inspection/maintenance conducted?	☐	☐	☐

Section D: Potential Pollution Generating Activities On Site

FUELING	YES	NO	N/A
Fueling area is covered?	☐	☐	☐
Fueling area is on impermeable surface?	☐	☐	☐
Fueling area is bermed/protected from stormwater runoff?	☐	☐	☐
Functional spill kit accessible?	☐	☐	☐
Above ground tanks have secondary containment?	☐	☐	☐
GROUNDS			
Outdoor work conducted within contained/covered areas as necessary?	☐	☐	☐
Paved areas free of oil stains?	☐	☐	☐
Site is regularly swept?	☐	☐	☐
Pesticides/fertilizers applied?	☐	☐	☐
If yes, are drains protected during application?	☐	☐	☐
If yes, are the products stored securely and properly?	☐	☐	☐
Pressure washing conducted on site?	☐	☐	☐
If yes, is wastewater contained/disposed of properly?	☐	☐	☐
Site is free of litter and loose sediment/debris?	☐	☐	☐
Dumpsters are covered and leak-free?	☐	☐	☐

VEHICLE MAINTENANCE	**YES**	**NO**	**N/A**
Vehicles washed onsite?	☐	☐	☐
If yes, wastewater plumbed to sanitary sewer?	☐	☐	☐
If no, are vehicles taken to a commercial car wash?	☐	☐	☐
Vehicle maintenance performed onsite?	☐	☐	☐
If yes, repairs are done under cover?	☐	☐	☐
If yes, maintenance materials properly stored?	☐	☐	☐
If yes, vehicle parts, batteries, etc., stored inside or covered?	☐	☐	☐
If yes, are non-operational vehicles outside drained of fluids/oils?	☐	☐	☐
LOADING/UNLOADING			
Loading/Unloading bays exposed to stormwater?	☐	☐	☐
Track-out observed from parking lot?	☐	☐	☐
Storm drain inlets covered during transfers?	☐	☐	☐
Materials/Stockpiles stored outside are covered?	☐	☐	☐
Chemicals, drums or bagged materials stored off the ground?	☐	☐	☐
Drip pans or containers used where drips/leaks could occur?	☐	☐	☐
HAZARDOUS MATERIAL STORAGE/DISPOSAL			
Hazardous materials are labelled, covered, with secondary containment?	☐	☐	☐
Waste disposal permits and records are up-to-date?	☐	☐	☐
Secondary containment is free of spills and rainwater?	☐	☐	☐
Grease/oil containers are closed/not leaking/free of spills/drips?	☐	☐	☐

Section E: Inspection Notes

Section F: Compliance/Recommendations

	YES	**NO**
Follow-up inspection needed?	☐	☐

	Reviewed and approved by:
Inspector Signature Date	Inspector Signature Date

Stormwater Management Manual for Western Washington (SWMMWW) Volume IV – Source Control BMPs:

Volume IV -1 : Source Control BMPs Applicable to All Sites	
S410	BMPs for Correcting Illicit Connections to Storm Drains
S454	BMPs for Preventive Maintenance/Good Housekeeping
S455	BMPs for Spill Prevention and Cleanup
S456	BMPs for Employee Training
S457	BMPs for Inspections
S458	BMPs for Record Keeping
Volume IV -2: Cleaning or Washing Source Control BMPs	
S431	BMPs for Washing and Steam Cleaning Vehicles/Equipment/Building Structures
S434	BMPs for Dock Washing
S441	BMPs for Potable Water Line Flushing, Water Tank Maintenance, and Hydrant Testing
Volume IV – 3: Roads, Ditches, and Parking Lot Source Control BMPs	
S415	BMPs for Deicing and Anti-Icing Operations for Airports
S406	BMPs for Deicing and Anti-Icing Operations for Streets/Highways
S415	BMPs for Maintenance of Public and Private Utility Corridors and Facilities
S416	BMPs for Maintenance of Roadside ditches
S417	BMPs for Maintenance of Stormwater Drainage and Treatment Systems
S421	BMPs for Parking and Storage of Vehicles and Equipment
S430	BMPs for Urban Streets
Volume IV – 4: Soil Erosion, Sediment Control, and Landscaping Source Control BMPs	
S407	BMPs for Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots
S408	BMPs for Dust Control at Manufacturing Areas
S411	BMPs for Landscaping and Lawn/Vegetation Management
S425	BMPs for Soil Erosion and Sediment Control at Industrial Sites
S435	BMPs for Pesticides and Integrated Pest Management Program (IPM)
S444	BMPs for the Storage of Dry Pesticides and Fertilizers
S449	BMPs for Nurseries and Greenhouses
S450	BMPs for Irrigation
Volume IV – 5: Storage and Stockpiling Source Control BMPs	
S427	BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers
S428	BMPs for Storage of Liquids in Permanent Above Ground Tanks
S429	BMPs for Storage or Transfer (Outside) of Solid Raw Materials/Byproducts/Finished Products
S445	BMPs for Temporary Fruit Storage
Volume IV – 6: Transfer of Liquid or Solid Materials Source Control BMPs	
S409	BMPs for Fueling at Dedicated Stations
S412	BMPs for Loading and Unloading Areas for Liquid or Solid Material
S419	BMPs for Mobile Fueling of Vehicles and Heavy Equipment
S426	BMPs for Spills of Oil and Hazardous Substances
S439	BMPs for In-Water and Over-Water Fueling
Volume IV – 7: Other Source Control BMPs	
S401	BMPs for the Building, Repair, and Maintenance of Boats and Ships
S402	BMPs for Commercial Animal Handling Areas
S403	BMPs for Commercial Composting
S404	BMPs for Commercial Printing Operations
S413	BMPs for Log Sorting and Handling
S414	BMPs for Maintenance and Repair of Vehicles and Equipment
S418	BMPs for Manufacturing Activities – Outside
S420	BMPs for Painting/Finishing/Coating of Vehicles/Boats/Buildings/Equipment
S422	BMPs for Railroad Yards
S423	BMPs for Recyclers and Scrap Yards
S424	BMPs for Roof/Building Drains at Manufacturing and Commercial Buildings
S432	BMPs for Wood Treatment Areas
S433	BMPs for Pools, Spas, Hot Tubs, and Fountains
S436	BMPs for Color Events
S438	BMPs for Construction Demolition
S440	BMPs for Pet Waste
S440	BMPs for Labelling Storm Drain Inlets on Your Property
S443	BMPs for Fertilizer Application
S447	BMPs for Roof Vents
S451	BMPs for Building Repair, Remodeling, Painting and Construction
S452	BMPs for Goose Waste

PHOTO LOG – FACILITY NAME

01 **DESCRIPTION:**

02 **DESCRIPTION:**

03 **DESCRIPTION:**

04 **DESCRIPTION:**

05 **DESCRIPTION:**

06 **DESCRIPTION:**