STORM WATER
POLLUTION PREVENTION PLAN

CITY OF BOTHELL
PUBLIC WORKS FACILITIES

Version January 2011

Appended January 2012

City of Bothell™
1909 CENTENNIAL CELEBRATION 2009

City of Bothell – Shop 1

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Introduction

The National Pollution Discharge Elimination System (NPDES), Phase-II permit (WDOE, 2007 and 2009) requires the City to develop a Storm Water Pollution Prevention Plan (SWPPP) for the City's heavy equipment maintenance and material storage facility, Shop 1. This SWPPP is part of the City's overall Surface Water Management Program. The NPDES Phase-II permit also requires the City to establish and implement policies and procedures to reduce pollutants in discharges from all lands owned and maintained by the City of Bothell. A companion document, Policies and Procedures, Bothell 2009, provides information on other City-maintained and operated lands (i.e. road right-of-ways and park lands).

The SWPPP's goal is to reduce and eliminate polluted discharges to surface and storm waters. It is designed to give the reader the ability to make decisions on how best to reduce pollutants from entering surface and storm water. It is not exhaustive with remedies.

For the City to have individual staff minimize their contribution to surface and storm water-related pollution, they must first understand that it is a problem and they have a vested interest in a successful outcome. An individual contribution may seem negligible, but collectively the impact can be an overwhelming achievement.

The test of effectiveness is not whether a type of action was taken, but whether the action resulted in elimination of polluted discharges. If not, we must improve upon what was done. After it has been shown to work, let other staff know and add it to the list of Best Management Practices to be reviewed and used by staff.

Section I.
SWPPP for City of Bothell's Shop 1

1.1 General Overview

The SWPPP is divided into site description and investigation, and needed structural and non-structural BMPs. The BMPs describe and assess actions to eliminate and reduce discharges of pollutants.

The primary City-maintained and operated heavy equipment maintenance, and storage material facility was field investigated for this SWPPP. Other secondary facilities will be inspected on an as-needed basis based on input from City staff, future inspection, and review. Regardless of which facility you may be working at, BMPs apply even if a specific facility SWPPP does not exist for that particular facility. The BMPs details can be found in Appendix A.

1.2 Site Assessment

Several site visits occurred to determine general conditions in the spring and summer of 2009. City staff from the Street/Storm Division and Water Department were present to lead the initial tour. Pictures and field notes were collected for future reference.

Facility Name: **Shop 1**
Watershed: **Sammamish River/Brickyard Creek**
17555 Brickyard Road
Bothell, WA 98011

Facility Type: **Equipment & Vehicle Storage and Maintenance Yard, Hazardous Waste Handling and Transfer Facility (decant), and Public Works Yard**
Facility Manager: **Clark Meek, Facilities and Parks Capital Project Manager**
425-486-2768 (work); 425-471-4696 (mobile)
Nik Stroup, Public Works Superintendent
425-486-2768 (work); 425-471-4668 (mobile)

1.3 General Facility Description

The 6-acre site is situated on two separate tax parcels. It is dominated by forest cover of 72% with 18% being impervious (see Figure 1). The entire site slopes from south to north. Interstate-405 is on the west and Brickyard Road

Figure 1. City of Bothell Shop 1 site layout map.

0 8 16 24
Feet

The City of Bothell delivers this data (map) in an AS-IS condition. GIS data (maps) are produced by the City of Bothell for internal purposes. No representation or guarantee is made concerning the accuracy, currency, or completeness of the information provided.

Map Prepared by: _____
February, 2009

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is on the east. The site entrance is from the east off of Brickyard Road. A paved access road bisects the site east to west.

A decant facility is located along the south side of the access road. Immediately west of the decant bays is a covered storage area for collected biosolids and street sweeping wastes. Located adjacent and 75 feet west of the covered storage decant bays are two GeoMelt (road de-icer liquid product) storage silos.

The remaining storage along the access road contains an assortment of products and material. These include spare supplies, (i.e. fire hydrants, pipes, and assorted metal components), Police Department's impounded vehicles, construction equipment (backhoes and dump trucks), covered storage for biosolids, street sweeping waste, uncovered bays for storage of a variety of rocks used for road construction, and vegetation clippings. Garbage dumpsters are located in several locations on site. A dumpster used for metal wastes is located on the east along the access road, another is located in the middle of the site for vegetation and yard waste, and a third dumpster, for garbage, is located on the west side of the site adjacent to storage sheds.

The site has no engineered storm water system. There are several catch basins onsite that either flow to King County sanitary sewer or towards Brickyard Creek. Surface/storm water flows generally from west to east. There is a spring-fed open channel that traverses the site from west to east along the south side of the access road and storage areas.

1.4 Decant Facility

A complete description of the decant facility can be found in City of Bothell Decant Facility & Drying Station, Operations Manual, 2003. The following is a brief summary of key operation and maintenance procedures. The decant facility is connected to King County sanitary sewer. It serves City of Bothell's Sewer Division and the City's street/storm vactored wastes. The wastes are placed into one of two covered dewatering bays. The solids are collected within the bays and the decanted liquid flows into a concrete vault with an 8617 gallon storage capacity that captures settleable solids. At the appropriate time, a control valve to the vault is opened which allows the liquid waste to be discharged to the sanitary sewer. The City has a King County Major Discharge Authorization Permit for up to 7200 gallons per day. All discharges are to be

visually and lab sampled for pollutants. Prior to a release from the settleable solids retention vault, a period of 12 to 16 hours should elapse to allow for settling out of settleable solids. This settling time is not fixed and can change based on conditions at the time. Records of volume discharged, maintenance logs, source of material, and personnel performing operations are kept for each discharge to the sewer and each load emptied into the decant bays.

Figure 2: Decant Facility at Shop 1.

1.5 GeoMelt Silos

There is no containment berm for the GeoMelt silos. The smaller of the two silos holds 3000 gallons and the larger one holds 5500 gallons. If there is a leak or spill, the liquid would flow to the covered decant bays. Trucks must load GeoMelt product while parked next to the silos. If a silo ruptured it may surpass the ability of the decant bays and vault to contain the spill.

Figure 3: GeoMelt Silos

1.6 Vehicle Maintenance Building (Shop 1)

The main Vehicle Maintenance Building serves as offices for staff, a fleet vehicle repair center, storage space for office equipment, and as a workshop for facility building maintenance and operations. The size of the building is approximately 40' x 180', 7200 square feet. The building is metal-sided and roofed. The floor is concrete. Several floor drains exist inside the building that had previously drained to the outside. They were sealed off with concrete in approximately 2002. Fleet maintenance and repairs of City vehicles are the primary uses of the building. The City's Building Facility Maintenance Crew works out of this shop. A workshop for fabrication of items needed for city facilities is a secondary use of the building.

Figure 4: Shop 1, View of Maintenance Bay 1 (July 2009)

1.7 Material Storage Sheds

A metal shed located near the northwestern portion of the site had about half a dozen 55-gallon drums. Some of these were unlabeled and contained various quantities of unknown material. Several other smaller containers were noted containing bleach, laundry detergent, and cleaning solvents. It was reported that this shed was no longer actively being used. Hence, it is recommend to properly disposal of all material storage and removal of shed. A soil test procedure should be carried out to identify the need for possible soil remediation.

Figure 5: Outside metal storage shed with assortment of liquid products

Two other sheds are situated along the north parking area of the Shop 1 building. No attempt was made to look inside. These are used for the storage of vehicle repair items.

Figure 6: Metal storage sheds for vehicle parts

Behind the Shop 1 building at the southwest area is an outside storage area of street stop lights. The lights were in various stages of conditions from intact to broken.

Figure 7: Stop Light Bone Yard behind Shop 1 building

1.8 Surface/Storm Water Site Conditions

The site is not served by an engineer-designed storm water drainage system. The site slopes generally from west to east with storm water drainage flowing into Brickyard Creek. Due to minor topography slopes, much of the storm run-off from the eastern two-thirds of the site flows into the decanting/dewatering bays. The remainder of the site flows into Brickyard Creek. A vehicle wash catch basin is located on the west side of the site. It is connected to King County sanitary sewer and is activated by manually opening a valve to allow the wash waste to drain to the sewer. This valve is closed at all times except when vehicles are being washed.

There is a stream/spring that flows from behind, on the south side of the Shop 1 building, to the east approximately 125 feet to a catch basin. The flows originate at the base of the slope at the back (south side) of the shop. There is an old steel pipe well head which was dry inside during the spring site visit. An open channel has been constructed at the base of the slope to capture the springs and ground water seeps. The catch basin has a 6-inch PVC outlet pipe that carries flows to the east. It is not known where this pipe leads, but is presumed to discharge into Brickyard Creek. Flows were observed during each visit (3 to 5 gallons per minute). A catch basin is located next to the derelict vehicles. Leaking fluid from the vehicles is most likely entering the catch basin.

Figure 8: Derelict vehicle storage

1.9 Material Storage along Access Road

Only one significant issue was observed by the assortment materials of pre-cast concrete and assorted pipes, that being the storage of railroad ties. Creosote could contribute to contaminated surface and ground waters.

Figure 9: Material storage along north side of access road with railroad ties in background

1.10 Road/Landscape Material Storage Bays

The bays are uncovered. They are constructed of large concrete ecology blocks on three sides and they vary in size and shape. Some locations contain drums of unknown products. Given the drainage pattern onsite, these bays most likely contribute to polluted discharges to storm water and Brickyard Creek.

Figure 10: Material storage along access road

Figure 11: Road material storage bays

1.11 Past Spills

Several spills have occurred since installation of the decant facility in 2003. Spills occurred under two scenarios, one being overflows due to inadequate capacity of the decant bays and/or vault. The second was accidental spillage from a faulty vactor truck's storage tank during discharge operations.

Run-off from site storm water flows into and fills up the decant bays and vault faster than they can be emptied into the sanitary sewer. A wider and taller berm has been installed which works to minimize overflow out of the bays. However, about once a year overflow occurs at the type-2 manhole outside of the containment berm. During large rain events or if operator fails to wait for sufficient storage capacity and dumps their load, run-off overwhelms the vault's storage capacity. Vault water backflows out of the type-2 manhole and then flows along the access road to Brickyard Creek. The decant facility capacity can be compromised during heavy rain events and during operator error.

The faulty vactor truck has been replaced with a newer model in December 2007. Operators are routinely advised to ensure adequate capacity exists prior to unloading. There is a set of alert lights, red for insufficient capacity, green for sufficient capacity.

Section II.
Recommended Structural BMPs

The permit requires non-structural Best Management Practices (BMPs) to begin immediately after the Storm Water Pollution Prevention Plan (SWPPP) is developed. A schedule for implementation of structural BMPs is included in this SWPPP (see Table 2.1).

2.1 Decant Facility

Issues were identified concerning storm run-off entering the decant bays. At times overflow out of the decant vault to Brickyard Creek occurs out of type-2 manhole (see Figure 2), which is situated outside of the containment berm system. This is caused by surface/storm water flows from impervious surfaces which flow into the decant bays.

- The entire site should be retrofitted with a city approved storm drainage system. The focus should be on eliminating the storm water drainage into the decant facility.
- The site should be designed to take advantage of infiltration of storm water with pretreatment prior to infiltration.
- GIS maps need to be updated with decant system and location of all storm drainages.
- As-built plans for the site's surface/storm drainage and sewer system should be created and stored with Decant Operations Manual.

2.2 Chemical Liquids, Fluids, and Petroleum Products (i.e. GeoMelt Silos)
The material is scheduled to be moved to the new Public Works Operations Center in the fall of 2010. If these does not occur, it is recommended the construction of a sufficiently-sized containment system to reduce the potential for spills and leaks to enter the environment or the decant system.

All chemical liquids, fluids, and petroleum products shall be stored on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater.

- Precipitation shall be prevented from accumulating in containment areas with a roof or equivalent structure.
- If cover is not practical, a Spill Response Plan should include a plan for how accumulated water will be managed and properly disposed of.

2.3 Derelict Vehicles (Police Impound)
The vehicles should be removed and stored away from the catch basin. If vehicles are to be stored outside, they should have fluid containment containers placed underneath them to capture leaking fluids, and tarps should be installed to cover the vehicles from the weather.

2.4 Road Material Storage Areas
Provide a temporary tarp cover over the railroad ties.

Install labels on road material bays that currently lack labels.

Along the access road a general cleanup is needed to remove rusting 55-gallon drums and other assortments of garbage.

The road material bays should be covered and protected from the weather. Temporary tarps or a constructed roof can be used to prevent run-on and discharge of leachate pollutant(s) and TSS.

2.5 Storage Sheds

The sheds should be organized and cleaned to ensure easy identification of stored products. If a shed is no longer deemed needed, it should be demolished and the soils tested for contamination. The materials stored in the sheds should be disposed of in accordance with the type of material.

Spill kits shall be located within 25 feet of all storage of hazardous wastes. At a minimum, spill kits shall include:

- Non-water absorbents capable of absorbing 15 gallons of fuel or liquids;
- A storm drain plug or cover kit;
- A non-water containment boom, a minimum of 10 feet in length with a 12-gallon absorbent capacity;
- A non-metallic shovel;
- Two five-gallon buckets with lids.

Store and maintain appropriate spill cleanup materials in the Shop 1 building in a location known to all. Ensure compliance with Federal OSHA regulations.

2.6 Stop Light Bone Yard

This area should be cleaned of all garbage and the stop lights removed to be stored elsewhere or appropriately disposed of.

2.7 Vehicle and Equipment Parking, Storage, and Washing

Sweep parking areas as needed to collect dirt, waste, and debris. Do not hose down area to the storm drainage system.

If washing/pressure washing occurs in the parking areas, the wash water must be collected and discharged to a sanitary sewer system.

An enhanced system and covered wash bays is recommended for installation if the vehicle washing operations is not moved to the new Public Works Operations Center in fall of 2010. Until then, ensure that the catch basins are vactored when sumps are more than 60 percent full of sediments and all wash water is discharged to the sanitary sewer system.

Table 2.1: Implementation Schedule for Structural BMPS

Structural BMP	Action	Begin	Finish
2.1 Decant Facility	Engineer and install storm drainage system	2010*	2012
2.2 GeoMelt Silos	Design and install containment system	2010*	2012
2.3 Derelict Vehicles	Remove	2010	2010
2.4 Road Material Storage Bays	Provide cover from the weather and label	2010	2011
2.5 Storage Sheds	Clean up and install spill kits	2010	2011
2.6 Stop Light Bone Yard	Remove garbage and clean the area	2010	2010
2.7 Vehicle Parking/Washing	Redesign vehicle wash system	2010*	2012

- Applies only if new Public Works Operation Center is not completed by the fall of 2010.

Section III.
Non-Structural BMPs

3.1 Spill Response Plan

The City has a Spill Response Program Manual that can be found in the Surface Water Management Plan, Version 2009-01. The Spill Response Plan found here is aimed at small minor spills, whereas the Spill Response Program Manual is focused on minor and major spills.

The spill response plan (SRP) here was adapted from City of Mount Vernon's Stormwater Pollution Prevention Plan, 2008, and City of Bothell's Spill Response Program Manual, Version 2009-5.

This section describes the Facility's Spill Response Plan (SRP). This section can serve as a standalone document that can help municipal employees understand their responsibilities in the field for characterizing, reporting, eliminating, and cleaning up spills.

3.2 Purpose

The purpose of responding to pollutant spill events is to contain the spill in order to minimize detrimental impacts to the environment and life safety. This SRP is intended for use by City of Bothell's Public Works employees while conducting field activities at Shop 1 and other facilities. Responding properly to spills involves following a set procedure including what to look for to

identify spills, how to report spills accurately, and proper notification procedures and protocols.

Spill events should be properly cataloged in a database for the following reasons:

- Support cleanup, mitigation, or enforcement measures of the event;
- Identify patterns of pollutant releases for which structural (versus housekeeping) BMPs may be necessary;
- Analyze pollutant spill events at the facility and develop solutions to minimize the number of detrimental impacts of these spills (i.e. failures in source control);
- Comply with NPDES Permit requirements.

3.3 Initial Response

All employees who work at the facility should be trained to follow the specified procedures for initial response, cleanup, and public involvement. The first and most important consideration when responding to a spill is life safety. Appendix F contains a flow chart of the procedures that should be followed by all municipal employees who come into contact with a spill at the site.

3.4 Spill Characterization

Spills can be identified by various means, including observing a spill while working onsite or identifying an illicit discharge while conducting usual City business. In either case, employee's first response task is to contact the Surface Water Management Division (SWMD). Employees should be prepared to respond to the following questions from the SWMD:

1) Where is the spill located?

- Address:
    - Is it in a parking lot, ditch, or surface waters?

2) Can you identify properties of the spilled material, such as what it is and what quantity has spilled?

- Does the material involved have **ANY** indication of being hazardous (i.e. is it flammable, corrosive, or dangerous in nature)?

    - **ACTION**: ***If you CANNOT identify the product involved, STOP and follow these procedures:***

        1. Back away from the product
        2. Prevent others from approaching the product
        3. Call the Police at 911 and Fire Department at 360.336.6277

- What is the odor?
- Is it solid or liquid?
- What is the texture? (Do not touch to make this determination unless it is clearly non-hazardous.)
- Is it water soluble (such as latex paint, soap, milk, concrete, anti-freeze, mud, pool water, dye, etc.)?
    - Is it non-water soluble (such as oil, hydraulic fluid, diesel fuel, etc.)?
    - Can the material be identified by the source?

3) Is there additional information to consider, which could impact and affect response procedures?

- What time of day is this spill occurring?
- What are the current and prospective weather conditions?

The ability to answer these questions will assist the SWMD in subsequently identifying the appropriate authorities for site cleanup, assessment, and evaluation. Based on the situation, the SWMD may instruct the first responder on various tasks which may include responsibilities described in Section 3.4.

3.5 Spill Cleanup Responsibilities

The employee may be able to conduct an onsite evaluation and spill containment prior to the SWMD or other authorities entering the site. An employee may conduct spill containment and/or cleanup only if the following conditions are met:

- ✓ Without jeopardizing safety, the employee should attempt to evaluate whether the material is hazardous;
- ✓ The employee considers themselves prepared and trained to respond to the spill;
- ✓ Employees who are not comfortable responding to the spill should request assistance from SWMD immediately.

Regardless of the type of spill, fill out a Hazardous Materials Spill Report form and contact SWMD.

Employees should be trained in spill containment and cleanup. A summarized list of what to do in preparation for the spill containment and cleanup includes:

- ✓ Ensure proper health and safety gear is used based on spill type;
- ✓ Evaluate whether you can prevent the spill material from entering the drainage system and/or receiving water body;
- ✓ If possible, cover the downhill storm drain or use a material to block flow into surface waters.

If possible, prior to and during the cleanup procedures, it is advised to photo document the spill. This documentation will help in subsequent spill response assessments.

3.6 Surface Water Management Division (SWMD) Notification Responsibilities
Based on the nature of the spill (material/quantity/location), the SWMD will respond accordingly as described below. Several agencies may become involved in a spill response depending on the situation. The following gives a brief overview of when certain agencies become involved:

City of Bothell Fire Department
The Fire Department is contacted at 911 when a spill is:

- An emergency
- Potentially hazardous

Washington Department of Ecology (WDOE)
WDOE is contacted for any of the following reasons when a spill:

- Has entered a storm drainage system or surface waters, or poses a risk to ground water;
- Is considered to be an emergency;
- Appears to pose a threat to public safety or the environment;
- Is hazardous, flammable, or unknown.

WDOE is the state agency authorized to coordinate and/or perform the cleanup of the spill in an emergency situation. Fill out the Hazardous Materials Spill Report form as much as possible prior to contacting WDOE. They will need this information to coordinate their response.

Washington Department of Fish and Wildlife (WDFW)
WDFW is contacted when a spill has resulted in fish or wildlife kills.

Washington State Highway Patrol (WSP)
The Washington State Highway Patrol (WSP) is contacted by the first responder when a spill is:

- Believed to enter the City's drainage system from a State Highway or State Highway outfall;
- Entering a WSDOT drainage system from the City's drainage system.

In accordance with RCW 70.136.030, the WSP has been designated as the hazardous materials incident command agency for all hazardous incidents on state highways.

3.7 Sewer or Water Utilities
Spill events caused from a sanitary sewer or water main break should be reported immediately to SWMD at 425.486.2768.

- Water main break flowing into storm drainage system and/or stream;
- Sanitary sewer spill entering drainage system and/or body of water (stream or lake).

Sewer/Water Operations & Maintenance
Sewer/drainage operators should be contacted when a spill:

- Enters the public storm drainage system;
- Enters or is within 1000 feet of a body of water (stream or lake);
- Leaves the public drainage system and is heading for a private system.

3.8 Private Drainage Contractor
A private drainage contractor (from Yellow Pages™) or from the "Vactor Vendor List" (provided by City of Bothell) should be contacted when a spill:

- Originates and is contained in a private drainage system;

- Originates on private property but enters into public drainage system. Private drainage contractor should be called to eliminate the source on the private property and the SWMD should also be notified to clean up the public drainage system;

- Originates on public property but enters into a private drainage system. The SWMD should be notified immediately to eliminate the source and contact the property owner to ask for permission to clean up the spill that has entered onto private property. The property owner may elect to contact a private drainage contractor instead.

3.9 Construction Projects

Spills can and do occur from private and/or public construction sites. Follow the above reporting and response procedures in these instances.

3.10 Spill Response Report

The Hazardous Material Spill Response Report form, included in Appendix F, must be completed after each spill event as it is a requirement of the City's NPDES Permit. After each spill, the SWMD will properly document the spill on this Hazardous Material Spill Response Report form and maintain the documentation within the master Spill Response Plan and within this SWPPP.

The documentation will include photographs of the spill, including its source(s) and end locations. When possible, digital photos should be taken and maintained in an organized location within the electronic files for Public Works. The spill location will also be recorded on a map. Depending on the situation, authorities may come to the site to sample the material and the receiving water. Any results obtained from this sampling activity and subsequent sampling and/or monitoring events should be kept with the Spill Response documents.

In spill events where the source of the pollutant can't be identified, documentation shall include the location of the most upstream structure in which evidence of the pollutant can be found. This documentation is intended to assist in tracing specific pollutants from recurring events by allowing the responder to continue a search from the last known structure (from a previous spill event) and eventually trace it back to its source.

A form for recording spills more than 5gallons of hazardous substance can be found in Appendix F. This recorded information will assist in future storm water pollution prevention techniques and trainings.

3.11 Recordkeeping

All forms completed pursuant to this SWPPP will be maintained for at least five years. Maintained documentation will include at least the following forms:

- All Wet and Dry Weather Visual Inspection Forms, located in Appendix B;
- The Annual BMP Evaluation, located in Appendix C;
- All SWPPP Employee Training forms, located in Appendix D;
- The SWPPP Revisions Form, located in Appendix E;
- All Spill Response Reporting forms, located in Appendix F.

Section IV.
Operational Source Control BMPs

Another set of activities that are non-structural BMPs include activities and practices which shall prevent or reduce storm water pollution. These activities are collectively termed Operational Source Control BMPs. They encompass Good Housekeeping Practices & Preventative Maintenance Actions, a Pollution Prevention Team, staff training schedule, and updates to the SWPPP. This chapter describes these activities.

4.1 Good Housekeeping Practices & Preventive Maintenance Actions

To understand the need for good housekeeping, it is helpful to know what sources are potentially contributing to polluted run-off. Table 4.1 provides a summary of Shop 1's operations and activities with their potential contribution to polluted run-off. They are ranked by priority based on the cumulative count of individual hazards associated with polluted run-off. The ranking is used to highlight those operations or activities that need the greatest care applied to ensure that they do not become acute or chronic sources of polluted run-off.

Good housekeeping practices include activities designed to prevent or minimize the use of materials that may become storm water run-off pollutants. It is better to keep pollutants out of storm water rather than having to remove them later.

The goal is to keep the facility area clean and orderly, store materials under roofs whenever possible, and handle materials and wastes in a manner that minimizes risk to surface and storm water. Good housekeeping practices depend on the type of facility. Shop 1's good housekeeping practices are summarized in table 4.2.

For indoor good housekeeping practices, refer to Appendix B, Shop Guide for Dangerous Waste Management. The guide helps one manage common shop wastes that can affect the safety of the facility. It provides alternatives that may save money, too.

Table 4.1: Shop 1 Risk Assessment. General storm water pollutants typically associated with type of activity. The activities are scored and ranked by the number of individual hazards associated with their activity.

Shop 1 Operation or Activity (Score/Ranking)	Sediment	Nutrients	Metals	Hydro-carbons	Toxins	Other
Vehicle Repair (11/3a)	○	○	⊗	⊗	⊗	
Vehicle Washing (13/2)	⊗	⊗	⊙	⊙	⊗	
Vehicle Storage (7/5)	⬡	X	⊙	⊙	○	Trash
Outdoor Loading (10/4a)	⊗	⊙	⊙	○	○	Organics
Outdoor Storage (11/3b)	⊗	⊙	⊙	⊙	⊙	
Waste Management (11/3c)	○	⊙	⊙	⊙	⊗	Trash
Building Repair (10/4b)	⊗	○	⊙	⊙	⊙	
Building Maintenance (9/5)	⊗	X	⊗	○	⊙	
Parking Lot Maintenance (11/3d)	⊗	○	⊙	⊗	⊙	
Landscaping (8/6)	○	⊗	X	X	⊗	Pesticides
Decant Facility (14/1)	⊗	○	⊗	⊗	⊗	Pesticides

Key
X = not a pollutant source
○ = minor pollutant source
⊙ = moderate pollutant source
⊗ = major pollutant source

Source: Adapted from Municipal Pollution Prevention/Good Housekeeping Practices, Version 1.0, 2008.

Table 4.2: Summary of Shop 1's Operation or Activity, based on their priority identified in Table 4.1, Risk Assessment.

Activity	Frequency
Service/Maintain Decant Bays	As Needed
Vactor Vehicle Wash Catch Basin Sumps	At More Than 60% Capacity
Routine Sweeping of Paved Surfaces	As Needed
Periodic Cleanup of Debris and Old Equipment	Quarterly
Removal of Trash and Garbage	Ongoing
Routine Inspection for Leaks or Spills	Daily
Waste and Material Minimization Program	Ongoing
Use Cover or Berms on Bulk Material Stock Piles	After Use

Additional measures may include:

- ✓ Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky

or leak-prone vehicles and equipment awaiting maintenance to protected areas).

- ✓ Use drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible. Drain fluids from equipment and vehicles prior to onsite storage or disposal.

4.2. Pollution Prevention Team

The role of the Pollution Prevention Team is to provide assurance that all appropriate BMPs are effective and being employed. They serve as lead contacts for their respective divisions. As need arises, they will meet to discuss and address issues of concern. They will be integral to coordinate the training of staff and implementation of the SWPPP. Table 4.3 below lists the members and their responsibilities.

Table 4.3 Pollution Prevention Team Chart

Position	Name	Responsibility
Public Works Superintendent Facilities & Parks Capital Projects	Clark Meek	Performs/updates BMPs, SWPPP inspections, and maintains SWPPP within office
Public Works Superintendent Maintenance Operations	Nik Stroup	Performs/updates BMPs for yard, material storage bays, and decant facility management
Public Works Superintendent Fleet & Recreation	Pat Parkhurst	Performs/updates BMPs for vehicle wash area, yard, and building interior and exterior

4.3 Training

The National Pollution Discharge Elimination System (NPDES) Phase II Permit requires training of municipal facilities staff whose activities could impact storm water quality. Employee training is an ongoing activity and will be provided for all existing employees on an annual basis and for all new employees when they begin work with the City. In 2009, Illicit Detection Discharge Elimination training was provided to the City's Maintenance Operations staff responsible for roads, sanitary sewer, and storm drainage.

Training will include information contained in this SWPPP. A training log to track staff, date, and type of training is located in Appendix C. This log will be completed as trainings are conducted.

Section V.
Monitoring

5.1 Visual Inspections

The NPDES Phase II permit requires periodic visual inspections to monitoring City facilities. The goal of the inspections is to assess possible illicit discharges and determine if BMPs need maintenance. The visual inspections are to be carried out twice quarterly; once during wet weather and once during dry weather each quarter. Inspections will be performed by a designated member of the Pollution Prevention Team.

Wet weather is defined as significant rainfall resulting in visible storm water run-off and discharge from the site. The rainfall should be approximately greater than 0.1" within a 24-hour period. Site conditions and local rainfall patterns should be taken into account so that inspections can begin soon after significant run-off begins. Inspections need not occur 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.

The two sample locations have been identified. One is located at the upstream side of the access road where Brickyard Creek crosses under the road. The second is at the 12-inch pipe outlet to the bioswale at the facility entrance. These locations are noted on Figure 1 as S-A at Brickyard Creek, and as S-B at the 12-inch white PVC pipe outlet.

The sample forms to be used can be found in Appendix D. Visual inspections consist of making observations of the visual characteristics of discharges at the sample locations and recording them on the forms. When making an observation, record the absence or presence and degree of the indicators below (as adapted from Mount Vernon's SWPPP, 2008):

- ✓ **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 possibly soap or other cleaning products have entered into the storm system. However, storm water 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 that are often present from parking lot run-off. 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 storm water can give off specific odors, which should be described as best as possible. Odors can include those similar to rotten eggs, solvent, fuel/oil, and cleaning agents, etc. When noting odors, make sure the odor is not related to sources beyond the run-off being inspected. If gasoline or a flammable solvent is suspected, leave the immediate area, notify Facility Management immediately, and take action to prevent fire or explosion (see Spill Response Procedures in Chapter 3 of this SWPPP).

- ✓ **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, the approximate discharge rate will be indicated on the inspection form (i.e. less than 10 gpm [gallons per minute] or more than 10 gpm).

5.2 Annual BMP Evaluation

The Annual BMP Evaluation Form, located in Appendix D, will be completed on an annual basis by a member of the Pollution Prevention Team and is intended 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.

5.3 SWPPP Revisions

Appendix E contains the SWPPP Revisions Form, which should be revised whenever the SWPPP is modified, specifically when significant changes occur at the Facility which affect current BMPs and could affect storm water quality, and on an annual basis to reflect any administrative changes, including Pollution Prevention Team members.

This SWPPP shall be modified if, during inspections or investigations, it is determined that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants to surface or storm water discharges. The SWPPP shall be modified as necessary to include additional or modified BMPs designed to correct problems identified.

Users of this SWPPP may find, by reference, portions of or completed plans prepared for other purposes at their facility. These other plans should be reviewed to provide a greater understanding of how they shall be integrated into this SWPPP.

Annual audits will be performed to provide feedback on progress made or changes needed for the SWPPP. The audit reports shall be appended to this report in appendix G.

References

Center for Watershed Protection, and Michael Novotney, and Rebecca Winer. Municipal Pollution Prevention/Good Housekeeping Practices – US EPA. Version 1.0. Ellicott City, MD: 2008.

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City of Bothell Public Works Department. City of Bothell Public Works Decant Facility and Drying Station. Prepared for King County Wastewater Treatment Division, Industrial Waste Program. Bothell, WA: 2003.

City of Bothell Public Works Department. Surface and Storm Water Management Spill Response Program Manual. Bothell, WA: Version 5. 2009.

City of Mount Vernon. Storm Water Pollution Prevention Plan Fir Street Maintenance Facility City of Mount Vernon. Prepared for Mount Vernon Public Works Department. Mount Vernon, WA: 2008.

US EPA, 2008, Municipal Pollution Prevention/Good Housekeeping Practices, Version 1.0, Prepared by Michael Novotney and Rebecca Winer, Center For Watershed Protection, Ellicott City, Maryland.

Washington Department of Ecology. Shop Guide for Dangerous Waste Management. Publication #09-04-015. 2009.

Washington Department of Ecology Water Quality Program. Stormwater Management Manual for Western Washington, Volume IV Source Controls. Publication #05-10-32. 2005.

Appendix A

BMP sheets specific to City of Bothell Shop 1, as adapted from Volume IV of Washington Department of Ecology Manual.

BMPs for De-icing and Anti-icing Operations – Streets

Description of Pollutant Sources: De-icing and/or anti-icing compounds are used on highways, streets, airport runways, and on aircraft to control ice and snow. De-icers commonly used on highways and streets include calcium magnesium acetate (CMA), calcium chloride, magnesium chloride, sodium chloride, urea, and potassium acetate. The de-icing compounds become pollutants when they are conveyed to storm drains or to surface water after application. Leaks and spills of these chemicals can also occur during their handling and storage.

BMPs for Streets/Highways

Applicable BMPs:

- ✓ Select de- and anti-icers that cause the least adverse environmental impact. Apply only as needed using minimum quantities.

- ✓ Where feasible and practicable, use roadway de-icers, such as calcium Magnesium acetate, potassium acetate, or similar materials that cause less adverse environmental impacts than urea and sodium chloride.

- ✓ Store and transfer de-/anti-icing materials on an impervious containment pad in accordance with BMP Storage or Transfer (Outside) of Solid Raw Materials, By-products, or Finished Products in this volume.

- ✓ Sweep/clean up accumulated de-/anti-icing materials and grit from roads as soon as possible after the road surface clears.

Recommended Additional BMPs:

- ✓ Intensify roadway cleaning in early spring to help remove particulates from road surfaces.

- ✓ Include limits on toxic metals in the specifications for de-/anti-icers.

- ✓ Refer to additional BMPs for storage of liquid materials in tanks.

BMPs for Maintenance and Repair of Vehicles and Equipment

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

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

Applicable Operational BMPs:

- ✓ Inspect for leaks all incoming vehicles, parts, and equipment stored temporarily outside.

- ✓ 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 storm water contamination. Store cracked batteries in a covered non-leaking secondary containment system.

- ✓ Empty oil and fuel filters before disposal. Provide for proper disposal of waste oil and fuel.

- ✓ Do not pour or convey wash water, liquid waste, or other pollutant into storm drains or to surface water. Check with the local sanitary sewer authority for approval to convey to a sanitary sewer.

- ✓ Do not connect maintenance and repair shop floor drains to storm drains or to surface water. To allow for snow melt during the winter, a drainage trench with a sump for particulate collection can be installed and used only for draining the snow melt 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 storm water and run-off of contaminated storm water.

- ✓ Park large mobile equipment, such as backhoes, in a designated contained area.

For additional applicable BMPs, refer to the following BMPs:
Washing and Steam Cleaning Vehicle/Equipment/Building Structures; Loading and Unloading Areas for Liquid or Solid Material; Storage of Liquids in Permanent Above-Ground Tanks; Storage of Liquid, Food Waste, or Dangerous Waste Containers; *2-34 Volume IV - Source Control BMPs, February 2005.*

Applicable Treatment BMPs: Contaminated storm water run-off from vehicle staging and maintenance areas must be conveyed 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), applicable filter, or other equivalent oil treatment system.

**Note that a treatment BMP is applicable for contaminated storm water.*

Recommended Additional Operational BMPs:

- ✓ Consider storing damaged vehicles inside a building or other covered containment until all liquids are removed. Remove liquids from vehicles retired for scrap.

- ✓ 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).

- ✓ Do not mix dissimilar or incompatible waste liquids stored for recycling.

BMPs for Painting/Finishing/Coating of Vehicles/Boats/Buildings/Equipment

Description of Pollutant Sources: Surface preparation and the application of paints, finishes and/or coatings to vehicles, boats, buildings, and/or equipment outdoors can be sources of pollutants. Potential pollutants include organic compounds, oils and greases, heavy metals, and suspended solids.

Pollutant Control Approach: Cover and contain painting and sanding operations and apply good housekeeping and preventive maintenance practices to prevent the contamination of storm water with painting oversprays and grit from sanding.

Applicable Operational BMPs:

- ✓ Train employees in the careful application of paints, finishes, and coatings to reduce misuse and overspray. Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly clean and temporarily store collected debris daily.

- ✓ Do not conduct spraying, blasting, or sanding activities over open water or where wind may blow paint into water.

- ✓ Wipe up spills with rags and other absorbent materials immediately. Do not hose down the area to a storm drain or receiving water or conveyance ditch to receiving water.

- ✓ On marine dock areas, sweep rather than hose down debris. Collect any hose water generated and convey to appropriate treatment and disposal.

- ✓ Use a storm drain cover, filter fabric, or similarly effective run-off control device if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. The containment device(s) must be in place at the beginning of the workday. Collect contaminated run-off and solids and properly dispose of such wastes before removing the containment device(s) at the end of the workday.

- ✓ Use a ground cloth, pail, drum, drip pan, tarpaulin, or other protective device for activities such as paint mixing and tool cleaning outside or where spills can contaminate storm water.

- ✓ Properly dispose of all wastes and prevent all uncontrolled releases to the air, ground, or water.

- ✓ Clean brushes and tools covered with non-water based paints, finishes, or other materials in a manner that allows collection of used solvents (i.e. paint thinner, turpentine, xylol, etc.) for recycling or proper disposal.

- ✓ Store toxic materials under cover (tarp, etc.) during precipitation events and when not in use to prevent contact with storm water.

Applicable Structural Source Control BMPs:

- ✓ Enclose and/or contain all work while using a spray gun or conducting sand blasting and in compliance with applicable air pollution control, OSHA, and WISHA requirements.

- ✓ Do not conduct outside spraying, grit blasting, or sanding activities during windy conditions which render containment ineffective.

Recommended Additional Operational BMPs:

- ✓ Clean paint brushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain.

- ✓ Recycle paint, paint thinner, solvents, pressure wash water, and any other recyclable materials.

- ✓ Use efficient spray equipment such as electrostatic, air-atomized, high volume/low pressure, or gravity feed spray equipment.

- ✓ Purchase recycled paints, paint thinner, solvents, and other products if feasible.

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, oils and greases, metals, and suspended solids caused by the parked vehicles.

Pollutant Control Approach: If the parking lot is a high-use site as defined below, provide appropriate oil removal equipment for the contaminated storm water run-off.

Applicable Operational BMPs:

- ✓ If washing of a parking lot is conducted, discharge the wash water to a sanitary sewer if allowed by the local sewer authority, or to other approved wastewater treatment system, or collect it for offsite disposal.

- ✓ Do not hose down the area to a storm drain or to a receiving water. 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 applicable for parking lots meeting the threshold vehicle traffic intensity level of a high-use site. (Shop 1 is not a high-use site.)

Vehicle High-Use Sites

Establishments subject to a vehicle high-use intensity have been determined to be significant sources of oil contamination of storm water. Examples of potential high use areas include customer parking lots at convenience stores, grocery stores, taverns and restaurants, large shopping malls, discount warehouse stores, quick-lube shops, and banks. If the PGIS for a high-use site exceeds 5000 square feet in a threshold discharge area, an oil control BMP from the Oil Control Menu 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 1000 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 (such as trucks, buses, trains, heavy equipment, etc.).

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 containers located outside a building used for temporary storage of accumulated food wastes, vegetable or animal grease, used oil, liquid feedstock or cleaning chemical, or dangerous wastes (liquid or solid) unless the business is permitted by the Washington Department of Ecology to store the wastes. Leaks and spills of pollutant materials during handling and storage are the primary sources of pollutants. Oil and grease, acid/alkali pH, BOD, and COD are potential pollutant constituents.

Pollutant Control Approach: Store the containers in impervious containment under a roof or other appropriate cover, or in a building. For rolling containers (i.e. dumpsters) that are picked up directly by the collection truck, a filet can be placed on both sides of the curb to facilitate moving the container. If a storage area is to be used onsite for less than 30 days, a portable temporary secondary system can be used in lieu of a permanent system as described above.

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 and 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 (February 2005, Volume IV - Source Control BMPs).
- ✓ Drums stored in an area where unauthorized persons may gain access must be secured in a manner that prevents accidental spillage, pilferage, or any unauthorized use.
- ✓ If the material is a dangerous waste, the business owner must comply with any additional Department of Ecology requirements (WDOE, 2005, Volume IV).

- ✓ Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code (Appendix IV-D R.2).

- ✓ Cover dumpsters or keep them under cover, such as a lean-to, to prevent the entry of storm water. 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 potentially pollutant liquids inside a building unless this is impracticable due to site constraints or Uniform 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. The secondary containment shall be sloped to drain into a dead-end sump for the collection of leaks and small spills.

- ✓ For liquid wastes, surround the containers with a dike. 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, or, if a single container, 110 percent of the volume of that container.

- ✓ Where material is temporarily stored in drums, a containment system can be used in lieu of the above system.

- ✓ 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.

Applicable Treatment BMP:

- ✓ For contaminated storm water in the containment area, connect the sump outlet to a sanitary sewer if approved by the local Sewer Authority, or to other appropriate treatment such as an API or CP oil/water separator, catch basin filter, or other appropriate system. Equip the sump outlet with a normally-closed valve to prevent the release of spilled or leaked liquids, especially flammables (in compliance with Fire Codes), and dangerous liquids. This valve may be opened only for the conveyance of contaminated storm water to treatment.

- ✓ Another option for discharge of contaminated storm water is to pump it from a dead-end sump or catchment to a tank truck or other appropriate vehicle for offsite treatment and/or disposal.

Appendix B

Shop Guide for Dangerous Waste Management

Appendix C

Staff Training Log and Reporting Form

City of Bothell Training and Report Log for SWPPP

Training Description: _____

_____

_____

_____

Trainers: _____

Date (s): _____

City Staff: Attendance

Name	Position	Signature

Appendix D

Facility Storm Water Visual Inspection Forms

Annual BMP Evaluation Form

City of Bothell Shop 1, Visual Inspection Form

Inspect sample locations S-A and S-B

Conduct twice quarterly; once in wet weather and once in dry weather. Wet weather is defined as rainfall resulting in visible storm water runoff. Site conditions and local rainfall should be taken into account so that inspections can begin soon after significant run-off begins. Inspections need not occur 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.

When making observation, record the absence or presence and degree of the indicators below, as detailed in Sec. V Monitoring of SWPPP

Date	Time	Staff Initials	Location S-A or S-B	Wet or Dry	Floatables Describe	Foam Yes/No	Sheen Yes/No	Turbidity	Odor	Discoloration Yes: Color	Flow GPM

City of Bothell **Annual BMP Evaluation Form for Operational BMPs**

Reporting Year: _____

Pollution Prevention Team Member Name/Position: _____

Based on past year's activities of category of BMPs used at the facility, please provide assessment of Good, Fair or Poor of their overall performance. If new BMPs were used list them separately. Refer to Appendix A for list of facility BMPs.

BMP Effectiveness

Good: Always, prevented polluted discharges to storm or surface waters.

Fair: Mostly, prevented polluted discharges.

Poor: Rarely, prevent polluted discharges.

Use

Frequent: Daily

Infrequent: Seasonally or as needed basis

Never: Not used

Attach separate sheet to explain any occurrence of BMPs that were rated as Fair or Poor. Please be sure to note specific incidents where BMPs failed and why. If new BMPs are needed describe and note how the new BMP can be used and why it will improve outcomes.

OPERATIONAL BMPs

Category BMP	Use Frequent Infrequent Never	BMP Effectiveness Good, Fair or Poor	Describe ways improve the BMPs
De-icing and Anti-icing Operations			
Maintenance and Repaired of Vehicles and Equipment			
Painting/Finishing/ of Vehicles, Buildings or Equipment.			
Parking and Storage of Vehicles and Equipment			
Storage of Liquid, food Waste, or Dangerous Waste Containers			

City of Bothell **Annual BMP Evaluation Form for Structural BMPs**

Reporting Year: _____

Pollution Prevention Team Member Name/Position: _____

Based on past year's activities by category of BMPs used at the facility, please provide assessment of Good, Fair or Poor of their overall performance. If new BMPs were used list them separately. Refer to Appendix A for list of facility BMPs.

BMP Effectiveness

Good: Always, prevented polluted discharges to storm or surface waters.

Fair: Mostly, prevented polluted discharges.

Poor: Rarely, prevent polluted discharges.

Use

Frequent: Daily

Infrequent: Seasonally or as needed basis

Never: Not used

Attach separate sheet to explain any occurrence of BMPs that were rated as Fair or Poor. Please be sure to note specific incidents where BMPs failed and why. If new BMPs are needed describe and note how the new BMP can be used and why it will improve outcomes.

STRUCTURAL BMPs

Category BMP	Use Frequent Infrequent Never	BMP Effectiveness Good, Fair or Poor	Describe ways improve the BMPs
De-icing and Anti-icing Operations			
Maintenance and Repaired of Vehicles and Equipment			
Painting/Finishing/ of Vehicles, Buildings or Equipment.			
Parking and Storage of Vehicles and Equipment			
Storage of Liquid, food Waste, or Dangerous Waste Containers			

Appendix E

SWPPP Revisions Form

Appendix F

Spill Response Flow Chart

Hazardous Material Spill Response Report Form

City of Bothell Public Works Department

Spill Response Sampling Form

A. BACKGROUND

Date: _____ Time: _____

Name: _____ Organization: _____

Work Phone: (____) _____ Location Phone: (____) _____

Event you are reporting: _____

_____

_____

Location of the event with specific address (landmarks/company logos/cross streets): _____

_____

Information important to this event (odors, colors, possible source of material, unusual circumstances, nature of the problem): _____

_____

B. EVENT TRACING INFORMATION

How did you learn of this event? Witnessed ☐ Contacted ☐

If contacted, who was the contact? Name: _____

Phone #: (____) _____ Address: _____

Is this contact to be kept confidential? Yes ☐ No ☐

Can you identify this pollutant (color, sheen, and odor)? _____

Do you see any possible sources of this pollutant? Yes ☐ No ☐

Have you notified other agencies or personnel? Yes ☐ No ☐

If yes, please complete the remainder of Section B.

Name: _____ Name: _____

Date: _____ Time: _____ Date: _____ Time: _____

In your opinion, this is an: Isolated case ☐ Chronic occurrence ☐

C. SAMPLE I.D. ***This section must be completed or the sample is invalid.***

Time and date the sample was taken: Date: _____ Time: _____

Location of the sample (specific): _____

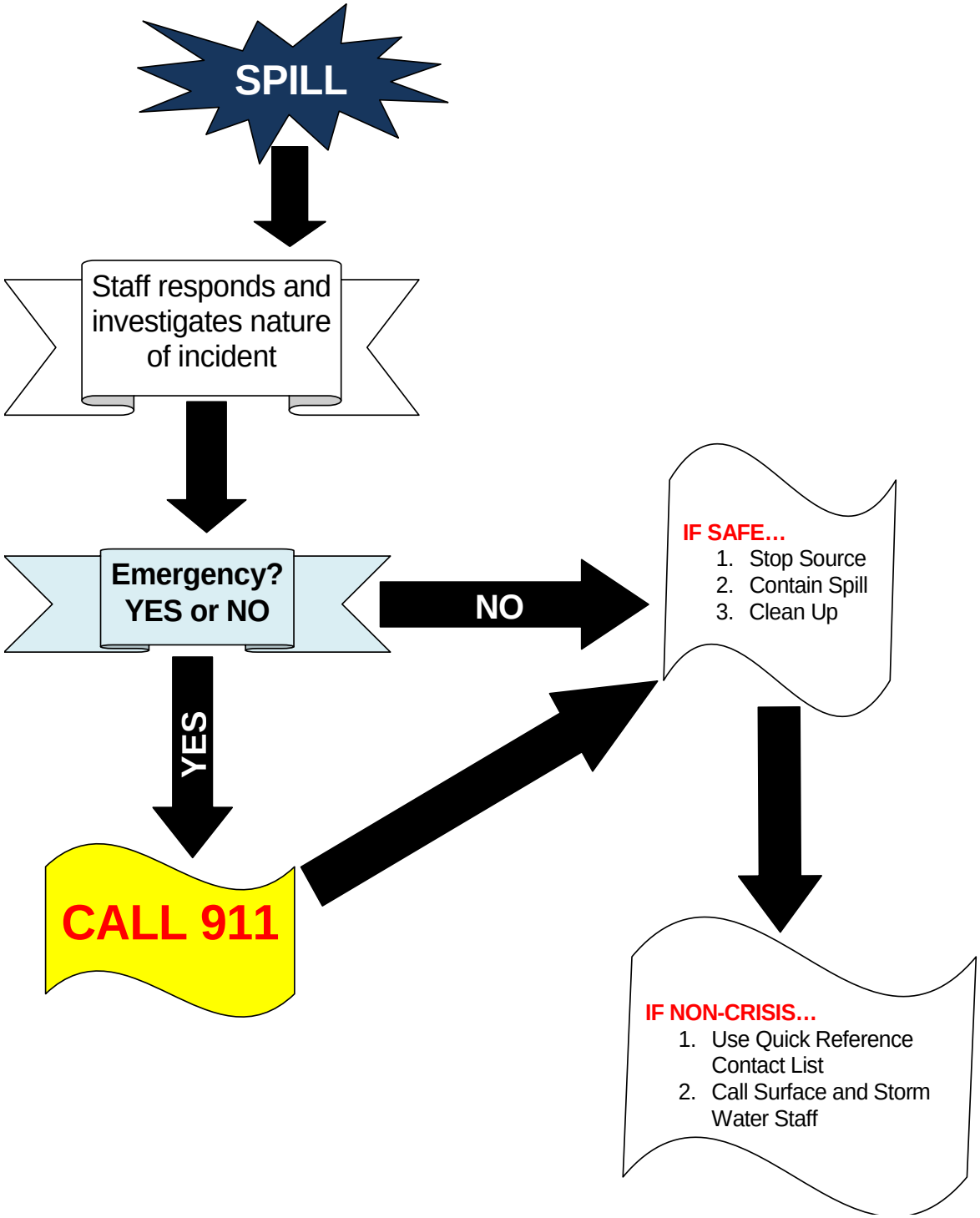
Sampler's Name/Agency: _____ Phone: (____) _____

Did you take any photographs of this situation? Yes ☐ No ☐

Use the back of this form if you need to diagram the situation. No Diagram ☐

Thank you!

City of Bothell Spill Response



Appendix G

Annual Audit Reports
Year 2010

2010 Year End Audit for Public Works Facilities. Shop 1

Conducted by: Andy Loch, Clark Meek, Nik Stroup, Tim Loo, and Ted Stonebridge

Date: December 9, 2010

The group met on site and did a walk through being guided by the questions below. These questions are the performance measures found within section II of the Storm Water Pollution Prevention Plan (SWPPP) for Shop 1.

2.1 Decant Facility:

- **Engineer and install improved storm drainage system?**
  Some modifications and repair were performed during the year to ensure that the decant facility would not receive excessive runoff from surrounding surfaces. The decant facility was allowed to increase its discharge rate to King County Metro Sewer. This increase reduces the risk of the storage vault being compromised for use during the wet season. The previous problem of too much storm water flow into the decant system has been resolved.

- **GIS maps updated with decant system and location of all storm drainage structures?**
  The storm water system and portions of the decant facility (pipes added but not vault, sewer layer) were added to GIS maps.
  The missing components of the system will be added to the GIS data base in 2011.

- **Place As-built plans with Decant Operations Manual?**

  Hand drawn schematics and some general drawings of the facility have been placed in the manual. No surveyed set of As-built plans have been created. In 2011 efforts will be carried out by Public Works staff to create a set of As-built plans for the decant system.

2.2 Chemical Liquids, fluids, and petroleum products (i.e. GeoMelt Silos)

- **What has been moved to new operations center?**
  - **GeoMelt silos**

The GeoMelt silos will remain at Shop-1 and not transferred to the new operations center. It was determined that in the event of minor to major catastrophic failure the flow path would be into the decant facility and discharged safely to King County Metro sewer. King County was made aware of the potential of this type of discharge. They determined that it would safe to allow this discharge into their sewer system.

- **Others**
  Much of the site is still in transition of being moved to the new operations center. Some items previously noted as needing removal have been removed. The remaining storage of chemical liquids, fluids, and petroleum products are addressed below the storage shed section of this audit.
  General reminder that all such storage of materials should at all times be kept under a roofed area.

2.3 Derelict Vehicles

- **Removed?**
  All the derelict vehicles have been removed.

2.4 Road Material Storage Areas

- **Temporary/permanent tarps for material storage?**
  In 2011, as the move to the new operations center nears completion, an effort to reorganize shop 1 site is scheduled. At that time methods to provide adequate coverage of material remaining on site will be installed.

- **Labeled bays for easy identification?**
  In 2011, as the move to the new operations center nears completion, an effort to reorganize shop 1 site is scheduled. Bays still containing material will be ensured to be adequately labeled.

- **Along access road removal of garbage (rusting 55-gallon drums), general cleanup and other assortments of garbage?**
  In 2011, as the move to the new operations center nears completion, an effort to reorganize shop 1 site is scheduled. Clean up along the access

road is expected to be fully completed during the reorganization efforts in 2011.

2.5 Storage Sheds

- **Cleaned and organized with material clearly labeled?**
  No attempt has occurred to clean out or organize the storage sheds. The reorganization effort in 2011 will allow for a systematic assessment of items in the storage shed and their appropriate use, storage or disposal. If the shed is no longer needed it will be demolished and the underlying soil will be tested for potential hazardous materials.

- **Spill kits installed?**
  No spill kits have been installed. This will be addressed in 2011 as the site is reorganized. It is quite possible that there will be no more storage of hazardous materials on site and hence no need for spill kits.

2.6 Stop light bone yard

- **Storage of street stop lights and other miscellaneous garbage removed?**
  The area will be addressed during the 2011 reorganization effort. It is anticipated that the lights and other items will be disposed of in an appropriate manner, i.e. garbage disposal.

2.7 Vehicle and equipment parking, storage, and washing

- **Routinely swept parking areas?**
  The site is routinely maintained by a street sweeper on a nearly weekly basis.

- **Has vehicle washing operations been moved to new operations center?**
  The new operations center has a wash bay for city vehicles. It is expected that little or no further washing of vehicles will occur at Shop 1.

Monitoring

The monitoring at station S-A began in March of 2010. Station S-A is located near the entrance to Shop-1 on Brick Yard Creek. No illicit discharges were detected in 2010. The field sheet is appended to this report.

SWPPP Revisions

New Operations Center

The current status at Shop 1 for Public Works Maintenance and Operations, Fleet, Parks, and facility divisions is they have moved their offices and equipment to the new Operations Center. The move is not complete but is expected to be fully completed in 2011. In the mean time the SWPPP for Shop 1 will be implemented at the new Operations Center.

The new site is a combination of owner ship shared with the North Shore School District. The City leases part of the site from the North Shore School District. The other portion is owned and managed by the City. For that portion of the site operated by the North Shore School District the City will use their SWPPP, if available.

It is anticipated that in 2011 an audit will be conducted of the new Operations Center and Shop 1 in regards to creating a site specific SWPPP modifications. The SWPPP Pollution Prevention Team will include city Surface Water Management staff to lead and create new and revised SWPPP(s).

Audit Summary

Progress was made on all items audited. For structural BMPs see Table 2 for status. What was not completed in 2010 is scheduled for completion in 2011. For non-structural BMPs the City will continue to implement all appropriate BMPs.

No evaluations were made of structural BMP performance. The evaluation forms were not used. It is anticipated that in 2011 that more attention will be given to evaluating BMP performance and providing revisions to the SWPPP. No training log was maintained during 2010. This oversight will be corrected for in 2011.

Table 2. Implementation Schedule and tracking Structural BMPS

Structural BMP	Action	Begin	Finish
2.1 Decant Facility	Engineer and install storm drainage system	2010*	2010
2.2 GeoMelt Silos	Design and install containment system	2010*	2010
2.3 Derelict Vehicles	Remove	2010	2010
2.4 Road Material Storage Bays	Provide cover from the weather and label	2010	2011
2.5 Storage Sheds	Clean up and install spill kits	2010	2011
2.6 Stop Light Bone Yard	Remove garbage and clean the area	2010	2010
2.7 Vehicle Parking/Washing	Redesign vehicle wash system	2010*	2011

City of Bothell Shop 1, Visual Inspection Form
Year 2010
Inspect sample locations S-A and S-B

Conduct twice quarterly; once in wet weather and once in dry weather. Wet weather is defined as rainfall resulting in visible storm water runoff. Site conditions and local rainfall should be taken into account so that inspections can begin soon after significant run-off begins. Inspections need not occur 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.

When making observation, record the absence or presence and degree of the indicators below, as detailed in Sec. V Monitoring of SWPPP

Date	Time	Staff Initials	Location S-A or S-B	Wet or Dry	Floatables Describe	Foam Yes/No	Sheen Yes/No	Ntus Turbidity	Odor	Discoloration Yes: Color	Flow GPM
19-Mar	2:00 PM	AL	S-A	Dry	**none**	No	No	clear	None	No	10 gpm
8-Apr	10:30 AM	AL	S-A	Wet	**none**	No	No	light turbid	None	light brown	1.5 cfs
21-May	3:30 PM	AL	S-A	Wet	**none**	No	No	clear	None	No	15 gpm
24-Jun	10:25 AM	AL	S-A	Wet	**none**	No	No	4.88	None	No	8 gpm
16-Jul	11:36 AM	AL	S-A	Wet	**none**	No	No	9.34	None	light silt	10 gpm
19-Aug	10:05 AM	AL	S-A	Dry	**none**	No	No	2.58	None	No	5 gpm
28-Sep	9:10	AL	S-A	Dry	**none**	No	No	2.58	None	No	.1 cfs
21-Oct	12:38 PM	AL	S-A	Dry	**none**	No	No	1.5	None	No	30 gpm
24-Nov	11:03 AM	AL	S-A	Wet	**none**	No	No	0.92	None	No	25 gpm
9-Dec	10:00 AM	AL	S-B	Wet	**none**	No	No	clear	None	No	trickle
12-Dec	11:41 AM	AL	S-A	Wet	**none**	No	No	20.7	None	light silt	.5 cfs
			S-B	Wet	**none**	No	No	clear	None	No	2 gpm

* S-A is also a long term ambient monitoring station.

2011 Year End Audit for Public Works Facilities. Shop 1

Conducted by: Andy Loch and Clark Meek,

Date: December 15, 2011

The group met on site and did a walk through being guided by the questions below. These questions are the performance measures found within section II and audit of 2010 of the Storm Water Pollution Prevention Plan (SWPPP) for Shop 1. As of 2011 the long term use of shop-1 will be for storage purposes both outside and inside the buildings.

2.1 Decant Facility:

- **GIS maps updated with decant system and location of all storm drainage structures?**
  The decant facility (pipes and vault, sewer layer) need to be added to GIS maps.
  The missing components of the system are to be added to the GIS data base in 2012.

- **Place As-built plans with Decant Operations Manual?**

  Hand drawn schematics and some general drawings of the facility have been placed in the manual. No surveyed set of As-built plans have been created. In 2012 funding efforts should be carried out by Public Works staff to create a set of As-built plans for the decant system.

2.2 Chemical Liquids, fluids, and petroleum products (i.e. GeoMelt Silos)

- **What has been moved to new operations center?**
  - **Others**
    Much of the site is still in transition of being re-organized. Items previously noted in 2010 as needing removal have not been removed. The storage of chemical liquids, fluids, and petroleum products are addressed below under the storage shed section of this 2011 audit.
    General reminder that all such storage of materials should at all times be kept under a roofed area.

2.3 Derelict Vehicles/Storage of Vehicles

- **Removed?**
  All the derelict vehicles have been removed in 2010. Long term plan for Shop-1 is to serve as a storage area for vehicles in transition; to be reassigned or to be disposed of as surplus. Vehicles will be parked on gravel areas and periodically inspected for excessive fluid leaks. If excessive fluid leaks are observed fluid catch containers will be deployed under the vehicle to collect the fluid to dispose of in an appropriate manner.

2.4 Road Material Storage Areas

- **Temporary/permanent tarps for material storage?**
  In 2011, efforts occurred to reorganize shop 1 material storage areas. Remaining actions needed include:
  - provide adequate coverage of stored material that remains on site,
  - In 2011 a garbage dumpster was placed near a catch basin and poises a risk from leaks and drips. It needs to be re-located away from the catch basin such that any leaks and drips cannot flow into the catch basin. Ensure that it has a lid and consider the placement of a berm such that leaks can be contained. For the catch basin a sock should be installed as necessary precaution against spills and other runoff from the site.

- **Labeled bays for easy identification?**
  Bays are being used for material storage in 2011. Storage bays need to be labeled.

- **Along access road removal of garbage (rusting 55-gallon drums), general cleanup and other assortments of garbage?**
  Clean up along the access road occurred in 2011. More is needed in 2012 especially for items such as the creosote rail road ties.

2.5 Storage Sheds

- **Cleaned and organized with material clearly labeled?**

One of the three outside small storage sheds was removed. The two remaining are scheduled for removal in 2012, funding permitted. A hazardous materials assessment is needed followed by clean up with monitoring to ensure soils are not contaminated.
The storage sheds on the back of the building need to be periodically inspected to ensure clean operations for the air compressor and the backup electric diesel generator.

- **Spill kits installed?**
  No spill kits have been installed in 2011. This will be addressed in 2012. Active storage of hazardous chemicals, paints and solvents, is an ongoing activity of the site. Placing spill kits within the building should be given priority status.

2.6 Stop light bone yard

- **Storage of street stop lights and other miscellaneous garbage removed?**
  The site received a cleaning in 2011. The area behind the building in 2012 needs further clean up in regards to the stop light bone yard and tire storage. If tires are to be stored on site they should be provided a cover or possibly stored inside the building.

2.7 Vehicle and equipment parking, storage, and washing

- **Routinely swept parking areas?**
  The site is routinely maintained by a street sweeper on a nearly weekly basis.

- **Has vehicle washing operations been moved to new operations center?**
  The new operations center has a wash bay for city vehicles. It is expected that little or no further washing of vehicles will occur at Shop 1. During 2011 some washing of street sweeper occurred and caused some minor erosion of steep slope. Staff will be directed to avoid such occurrences in 2012.

SWPP Revisions

New Operations Center

The current status at Shop 1 as of December 31, 2011 is In 2011 the Public Works Maintenance and Operations, Fleet, Parks, and facility divisions completed their move of offices and equipment to the new Operations Center located at 21233 20th Ave SE, Bothell. The long term use of Shop-1 will be as a warehouse and storage site.

The new operations center developed a draft SWPPP in 2011. The SWPPP was created and designed in collaboration with owner and user of the site, North Shore School district.

The SWPPP Pollution Prevention Team will include city Facility, school district, and city Surface Water Management staff.

Audit Summary

Progress was achieved on many of the outlined needs from the 2010 Audit, Table 2, while others remain unmet. Structural BMPs to be prioritized in 2012 should focus on the uncovered material storage bays, the dumpster's location, and the decommissioning and clean up of the storage sheds. Plans are anticipated in 2012 to address the remaining actions to meet Shop-1's SWPPP.

Brief evaluations were conducted in 2011 of BMP performance. No BMP defects or poor performance were noted. One BMP was noted for "Fair" performance. The BMP evaluated was the covered storage of materials on site. It was marked as "fair" not because material covers fail, but that they were not deployed. It becomes an operator error to not deploy covers and hence not a reflection of the actual BMP itself.

Table 2. Implementation Schedule and tracking Structural BMPS, 2011.

Structural BMP	Action	Begin	Completed
2.1 Decant Facility	Provide As-builts and enter into GIS	2010	Not yet
2.2 GeoMelt Silos	Monitor for leaks	2010	On-going
2.3 Derelict Vehicles	Remove	2010	2011
2.4 Road Material Storage Bays	Provide cover from the weather and label	2010	Not yet
2.5 Storage Sheds	Clean up and install spill kits	2010	Not yet
2.6 Stop Light Bone Yard	Remove garbage and clean the area	2010	Not Yet
2.7 Vehicle Parking/Washing	Nearly all equipment and vehicle washing occurs at new operations center.	2010	2011

City of Bothell Shop 1, Visual Inspection Form

Inspect sample locations S-A and S-B

Conduct twice quarterly; once in wet weather and once in dry weather. Wet weather is defined as rainfall resulting in visible storm water runoff. Site conditions and local rainfall should be taken into account so that inspections can begin soon after significant run-off begins. Inspections need not occur 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.

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1/20/2011	10:48 AM	AL	S-A	Wet	None	No	No	No	No	No	.5 cfs
2/22/2011	9:08 AM	AL	S-A	Wet	None	No	No	No	No	No	.25 cfs
3/22/2011	2:41 PM	AL	S-A	Dry	None	No	No	18.9 ntu	No	Yes*	.5 cfs
								*but not from shop 1, from upstream sources			
4/20/2011	4:18 PM	AL	S-A	Dry	None	No	No	slight*	No	No	15 gpm
5/19/2011	3:06 PM	AL	S-A	Dry	None	No	No	No	No	No	.5 cfs
6/15/2011	10:17 AM	AL	S-A	wet	None	No	No	No	No	No	.06 cfs
7/11/2011	1:45 PM	AL	S-A	Dry	None	No	No	No	No	No	.02 cfs
8/8/2011	2:06 PM	AL	S-A	Dry	None	No	No	No	No	No	.02 cfs
9/16/2011	2:15 PM	AL	S-A	Wet	None	No	No	No	No	No	.03 cfs
10/13/2011	1:47 PM	AL	S-A	Dry	None	No	No	No	No	No	0.01
11/14/2011	11:20 AM	AL	S-A	Dry	None	No	No	No	No	No	0.12
12/15/2011	10:00 AM	AL	S-A	Dry	None	No	No	No	No	No	0.02