S431 BMPs for Washing and Steam Cleaning Vehicles / Equipment / Building Structures

Description of Pollutant Sources: Pollutant sources include the commercial cleaning of vehicles, aircraft, vessels, and other transportation, restaurant kitchens, carpets, and industrial equipment, and large buildings with pressurized water or steam. This includes “charity” car washes at gas stations and commercial parking lots. The cleaning can include hand washing, scrubbing, sanding, etc. Washwater from cleaning activities can contain oil and grease, suspended solids, heavy metals, organics, soaps, and detergents that can contaminate stormwater.

Between 1950 and 1980, PCBs were added to a range of building materials used on the exterior of industrial, commercial, government, and larger residential buildings to increase the material’s longevity. Without proper precautions, PCBs from paint, caulk and other joint materials, sealants, roofing, and other items can be released into the environment and enter stormwater conveyances during building washing activities. Recent guidance for characterizing and abating PCBs in building materials recommends against washing PCB-containing materials on a building’s exterior, and provides more detailed guidance on specific stormwater BMPs to apply when PCB-containing materials are or are assumed to be present (Ecology, 2024).

Permitting Requirements: Obtain all necessary permits for installing, altering, or repairing onsite drainage and side sewers. Restrictions on certain types of discharges may require pretreatment before they enter the sanitary sewer. For commercial building washdown, properties served by a municipal stormwater system may be required to assess for PCB-containing building materials prior to building washing activities.

Pollutant Control Approach: The preferred approach is to cover and/or contain the cleaning activity, or conduct the activity inside a building, to separate the uncontaminated stormwater from the washwater sources. Convey washwater to a sanitary sewer after approval by the local sewer authority. Provide temporary storage before proper disposal. Under this preferred approach, no discharge of washwater to the ground, to a storm drain, or to surface water should occur.

The Industrial Stormwater General Permit (ISGP) prohibits the discharge of process wastewater (e.g. vehicle, building, or equipment washing wastewater) to groundwater or surface water. Stormwater that commingles with process wastewater is considered process wastewater.

Facilities not covered under the ISGP that are unable to follow one of the preferred approaches listed above may discharge washwater to the ground only after proper treatment in accordance with *Vehicle and Equipment Washwater Discharges Best Management Practices Manual* (Ecology, 2012).

The quality of any discharge to the ground after proper treatment must comply with Ecology’s Groundwater Quality Standards, Chapter 173-200 WAC.

Facilities not covered under the ISGP that are unable to comply with one of the preferred approaches and want to discharge to the storm sewer, must meet their local stormwater requirements. Local authorities may require treatment prior to discharge.

The Municipal Stormwater Permits (Phase I, Phase II western Washington, and Phase II eastern Washington) prohibit the discharge of building washdown water to municipal stormwater systems from structures suspected or confirmed to have PCB-containing materials. Commercial buildings, industrial facilities, and multi-story residential structures that were contructed or renovated between the years 1950-1980 are those most likely to have PCB containing building materials. Refer to *How to Find and Address PCBs in Building Materials* (Ecology, 2022) for additional information.

Contact the local Ecology Regional Office to discuss permitting options for discharge of washwater to surface water or to a storm drain after on-site treatment.

Applicable Structural Source Control BMPs:

- Conduct vehicle/equipment washing in one of the following locations:
    - At a commercial washing facility in which the washing occurs in an enclosure and drains to the sanitary sewer.
    - In a building constructed specifically for washing of vehicles and equipment, which drains to a sanitary sewer.
- Conduct outside washing operations in a designated wash area with the following features:
    - In a paved area, construct a spill containment pad to prevent the run-on of stormwater from adjacent areas. Slope the spill containment area to collect washwater in a containment pad drain system with perimeter drains, trench drains or catchment drains. Size the containment pad to extend out a minimum of 4 feet on all sides of the washed vehicles and/or equipment.
    - 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. The containment sump must have a positive control outlet valve for spill control with live containment volume, and oil/water separation. Size the minimum live storage volume to contain the maximum expected daily washwater flow plus the 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 2 hours following the washing operation to allow the oil and solids to separate before discharge to a sanitary sewer.
    - Use a two way valve for discharges from the containment pad. This valve should be normally switched to direct water to treatment, but may be switched to the drainage system after that pad is clean to handle stormwater runoff. The stormwater can then drain into the conveyance/discharge system outside of the wash pad (essentially bypassing the sanitary sewer or recycle system). Post signs to inform people of the operation and purpose of the valve. 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.

      Note that the purpose of the valve is to convey only washwater and contaminated stormwater to a treatment system.

    - Collect the washwater from building structures and convey it to appropriate treatment such as a sanitary sewer system if it contains or is suspected to contain oils, soaps, detergents, or PCBs. If the washwater does not contain oils, soaps, detergents, or PCBs (in this case only a low pressure, clean, cold water rinse is allowed) then it could drain to soils that have sufficient natural attenuation capacity for dust and sediment.
    - Sweep surfaces prior to cleaning/washing to remove excess sediment and other pollutants.
    - If roof equipment or hood vents are cleaned, ensure that no washwater or process water is discharged to the roof drains or drainage systems.
    - Label all mobile cleaning equipment as follows: "Properly dispose of all wastewater. Do not discharge to an inlet/catch basin, ditch, stream, or on the ground".
- Contact the local jurisdiction's stormwater program to inform them when PCB-containing materials are, or are likely to be, present.
- Assess commercial structures (including industrial facilities and multi-story residential structures) constructed or renovated between 1950-1980 for PCB-containing materials consistent with *How to Find and Address PCBs in Building Materials* (Ecology, 2022) prior to building washdown. Single-family residential buildings are exempt from PCB assessment.

Recommended Additional BMPs:

- Mark the wash area at gas stations, multifamily residences and any other business where non-employees wash vehicles.
- Operators may use a manually operated positive control valve for uncovered wash pads, but a pneumatic or electric valve system is preferable. The valve may be on a timer circuit and opened upon completion of a wash cycle. After draining the sump or separator, the timer would then close the valve.
- Minimize the use of water and detergents in washing operations when practicable.
- Use phosphate-free biodegradable detergents when practicable.
- Use the least hazardous cleaning products available.
- Consider recycling the washwater.
- Operators may use soluble/emulsifiable detergents in the wash medium and should use it with care and the appropriate treatment. Carefully consider the selection of soaps and detergents and treatment BMPs. Oil/water separators are ineffective in removing emulsified or water soluble detergents. Another treatment appropriate for emulsified and water soluble detergents may be required.

Exceptions:

- At gas stations (for charity car washes) or commercial parking lots, where it is not possible to discharge the washwater to a sanitary sewer, a temporary plug or a temporary sump pump can be used at the storm drain

to collect the washwater for off-site disposal such as to a nearby sanitary sewer.

- New and used car dealerships may wash vehicles in the parking stalls as long as employees use a temporary plug system to collect the washwater for disposal as stated above, or an approved treatment system for the washwater is in place.

- At industrial sites, contact Ecology for NPDES Permit requirements even when not using soaps, detergents, and/or other chemical cleaners in washing trucks.