

# BG-20 Automotive Service Facilities— Body Repair

## Source Control BMPs

The BMPs are listed in this table by activity or area.

<b>Panel Sanding</b>	<b>Dry Sanding</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Conduct all sanding indoors.</li> <li><input type="checkbox"/> Sweep, vacuum, or use other dry cleanup methods routinely to pick up dust from dry sanding of primer, metal, or body filler.</li> <li><input type="checkbox"/> Make an extra effort to thoroughly sweep or vacuum dust prior to mopping.</li> <li><input type="checkbox"/> Use vacuum sanding equipment whenever possible to reduce the amount of airborne dust.</li> </ul>
	<b>Wet Sanding</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Conduct all wet-sanding activities indoors.</li> <li><input type="checkbox"/> Do not wet sand in a wash rack or in an area with a floor drain.</li> <li><input type="checkbox"/> Use a spray bottle to wet a small panel area and collect the liquid waste to reduce or eliminate the need for a sanding bucket.</li> <li><input type="checkbox"/> Use dent repair tools for small dents whenever practical.</li> <li><input type="checkbox"/> Use vacuum sanding equipment whenever practical (for larger panels) to minimize the amount of wastewater.</li> <li><input type="checkbox"/> Place a pan under the car panel being sanded to catch drips. Pour the collected water back into the wet-sanding bucket.</li> <li><input type="checkbox"/> Clean up drips or small spills with a rag, or let them dry and then sweep or vacuum up the dust.</li> </ul>
<b>Washing Cars</b>	<p>After bodywork is completed, sanding dust often remains on the vehicle. When the car is washed, the dust can be rinsed off and discharged with the wash water. Therefore, vehicle wash water from an auto body shop is typically contaminated with zinc and/or other metals, and it should not be discharged to the storm drain under any circumstances or to the sanitary sewer without treatment.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Remove dust from the vehicle prior to washing. Be sure to check areas where dust might collect such as the door jambs, hood, and trunk.</li> <li><input type="checkbox"/> Try to keep the amount of airborne dust to a minimum.</li> </ul> <p>There are two options for discharge of vehicle wash water:</p> <p>Option #1</p> <p>Wash vehicles and discharge the wastewater to the sanitary sewer through a permitted treatment system or recycling unit.</p> <p><b>Note:</b> An industrial pretreatment discharge permit must be obtained in many jurisdictions for this type of sewer discharge.</p>

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	<p>Option #2</p> <p>Collect the wash water and haul to a legal point of disposal of it offsite.</p> <p>(See fact sheet SC-21 – Vehicle and Equipment Washing and Stream Cleaning for other information)</p>
<b>Cleaning Floors</b>	<p>Sanding dust and wet-sanding drips often end up on the shop floor. If the shop floor is mopped and the mop water is discharged to the sanitary sewer, the mop water alone can cause a violation of local sanitary sewer discharge limits for zinc.</p> <p>Instead of mopping, sweep the floors.</p> <ul style="list-style-type: none"> <li>□ If mopping must be done, follow this three-step procedure: <ol style="list-style-type: none"> <li>1. Clean up all drips and spills with rags or other absorbent materials.</li> <li>2. Sweep or vacuum to pick up dust. (This should be a frequent routine.)</li> <li>3. Mop with a minimal amount of water. Do not let water run outside.</li> </ol> </li> <li>□ Dispose of the mop water to the sanitary sewer through a drain or permitted treatment system. As an additional precaution, let the mop water settle overnight or longer (in a bucket or settling unit) prior to discharge.</li> </ul>
<b>Spraying Primers and Paints</b>	<p>Primers in particular can contain significant amounts of zinc. A review of the safety data sheets (SDSs) for primers shows that certain primers contain as much as 40% zinc phosphate by volume. A small amount of these primers reaching the sanitary sewer can result in a shop exceeding local sanitary sewer discharge limits for zinc.</p> <ul style="list-style-type: none"> <li>□ Conduct all painting indoors, preferably in a paint booth.</li> <li>□ Review the SDSs for the products used and look for their zinc concentrations. Use primers and paints with lower zinc content if they work equally well.</li> <li>□ Have a good working relationship with your vendors. They can be an invaluable source of information about new and versatile (low metal) paints, technologies, and industry trends.</li> <li>□ When cleaning auto body parts before painting, minimize use of hose-off degreasers. Brush off dirt and use rags to wipe down parts. If an acid-based metal cleaner or cleaner/conditioner is used to treat bare metal and rinse water is recommended to stop the chemical reaction, use as little water as possible and wipe down the area with a rag or towel.</li> <li>□ Reduce waste by using low-volume paint mixing equipment and high-efficiency painting tools.</li> </ul>

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	<ul style="list-style-type: none"> <li>❑ Minimize waste paint and thinner by carefully calculating paint needs based on surface area and using the proper sprayer cup size.</li> <li>❑ Clean spray guns in a self-contained cleaner. The gun-cleaning solution, whether solvent or aqueous-based, should be recycled or disposed of properly when it becomes too dirty to use.</li> </ul> <p><b>Note:</b> Never discharge gun-cleaning solution to the sewer or storm drain.</p> <ul style="list-style-type: none"> <li>❑ Do not use water to control overspray or dust in the paint booth, unless it is sure to evaporate in the booth (so the dust can be swept up) or the wastewater will be collected. The water should be treated prior to discharge into the sewer system.</li> </ul>
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## Options for Handling Liquid Sanding Waste

In addition to the potential for wet sanding to cause stormwater pollution, emptying the wet-sanding bucket directly into a sink or other sanitary sewer drain is one of the primary causes of wastewater discharge permit violations by body shops. Therefore, seriously consider reducing or eliminating the need for a wet-sanding bucket. However, if a sanding bucket must be used, use one of the following three options to dispose of the contents.

<b>Option #1: Settling</b>	<p>Up to 80% of the zinc in the sanding bucket will settle out if the bucket is left to stand undisturbed for 24–48 hours. This is the simplest and least costly method of achieving significant zinc reductions, assuming the shop has space for the buckets to be put aside during the workday. Sanding bucket wastewater also can be poured into a settling unit (see next section) prior to discharge to a sump or to the sanitary sewer.</p> <p><u>Step 1:</u> Remove sponge and sandpaper from the water. Wring out the sponge over the bucket.</p> <p><u>Step 2:</u> Settle out zinc particles in one of two ways:</p> <ul style="list-style-type: none"> <li>a. Allow the wet-sanding bucket to stand at least overnight—preferably longer—in a place where it will not be disturbed.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>b. Pour contents of the wet-sanding bucket into a settling unit.</li> </ul> <p>Devise a system to let shop employees know how long the bucket has been settling and that it is not to be disturbed.</p> <p><u>Step 3:</u> Separate water from sludge.</p> <p>Carefully bail the clear water from the top of the bucket, or remove the clear water from the settling unit after it has been allowed to sit at least overnight. Avoid any agitation of sludge on the bottom. The clear water on top can be discharged to the sanitary sewer through a drain or permitted treatment system (e.g., a sump or oil/water separator).</p> <p><u>Step 4:</u> Dispose of sludge.</p>
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	<p>Dispose of nonhazardous dried sludge in trash.</p> <p><b>Note:</b> The California Department of Toxic Substances Control (DTSC) places the responsibility for proving that such waste is nonhazardous on the shop owner. If the sludge is hazardous, it must be disposed of appropriately. Contact the DTSC for more information.</p> <p>If the settling bucket is uncovered, make sure it is placed in secondary containment.</p>
<b>Option #2: Discharging to a Permitted Treatment System</b>	<p>With this option, the shop routes contents of wet-sanding buckets through a treatment system or recycling unit prior to discharging to the sanitary sewer. An industrial pretreatment discharge permit might be required in your jurisdiction for this type of sewer discharge.</p> <p>In addition, let the wastewater settle overnight in the bucket or in a settling unit (see option #1).</p>
<b>Option #3: Off-site Disposal</b>	<p>With this option, the shop collects and disposes of wet-sanding wastewater off-site. This alternative might be attractive to shops interested in reducing their waste streams or eliminating all wastewater discharges and becoming a “zero-discharger.”</p> <p>There are two possible methods for off-site disposal of wet-sanding bucket wastewater:</p> <ol style="list-style-type: none"> <li>1. Disposal with other collected wastes.</li> </ol> <p>Depending upon the hauler, it might be possible to dispose of the wet-sanding wastewater with waste paint rinse water or waste antifreeze. Check with the local hauler to see if this is acceptable.</p> <p>OR</p> <ol style="list-style-type: none"> <li>2. Disposal as a hazardous waste.</li> </ol> <p>Wet-sanding wastewater can be collected separately and hauled off-site for disposal as a hazardous waste either by a licensed waste hauler or through a Very Small Quantity Generator hazardous waste collection program for small businesses.</p>

## Simple Settling Units for Wet-Sanding and Mop Wastewater

Settling units can be used to remove zinc and other metals from wastewater generated by activities such as wet sanding and mopping. Even shops with a sump or oil-water separator might find it beneficial to settle out wet-sanding and mop wastewater prior to discharge to the separator or sanitary sewer. Settling units can range from simple compact containers to complex treatment systems. Unless the shop has a high volume of wastewater from sanding or mopping, you might want to consider one of the simpler units—since complex treatment systems can be very expensive to purchase, install, and maintain. In fact, the shop might be able to make its own simple settling unit using an empty plastic 30-gallon drum, for example, and a little creativity.

In choosing or designing a settling unit, consider the following factors:

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- The potential volume of wastewater and the size of a container that will ensure adequate settling time. To determine the appropriate size, calculate the volume of wastewater—wet-sanding and/or mop water—that is generated each day. The settling unit should be able to contain at least double or triple this daily volume.
- A method for removing the clear wastewater from the unit without disturbing the sludge on the bottom. A valve or spigot should be located no lower than halfway down the side of the unit.
- A strategy (method and frequency) for removing sludge from the bottom of the unit. Sludge should be removed on a regular basis and never allowed to build up higher than one-quarter of the container's height. Remove sludge only after draining off the clear wastewater on top. Sludge can either be removed from the bottom of the settling unit or scooped out by hand from the top. Removal might require a large opening with a secure cap because sludge can clog a valve or spigot. Some shops use a container with a conical bottom to facilitate both settling and sludge removal.
- A location in the shop that is convenient but out of the way enough so the settling unit will not be disturbed accidentally. The unit can be placed on the ground or elevated.
- To settle wastewater for longer than overnight, a system comprised of several containers used in sequence.

## ***Multiple Settling Units in Series***

A sequence of two or more settling containers is one way to increase settling time for the wastewater. For example, some shops construct their own tow-drum units. Wastewater is held in the first drum for 24 hours and allowed to settle; then the clear water on top is drained into the second drum for an additional 24 hours or more prior to discharge to the sanitary sewer.

**Note:** Be sure to follow sludge-removal precautions detailed in the previous section.

The decision to use a settling unit with a single container versus one with multiple containers could depend partly on the metals concentrations in the wastewater and the time required to allow the metals to settle out to acceptable levels. Also, there must be adequate space in the shop in a convenient location where the unit(s) will not be disturbed.

## ***Testing Settled Wastewater***

After installing a settling unit, have the settled wastewater tested at least twice to make sure the system allows for enough settling time. Overnight settling might be sufficient for some shops' wastewater, but others might require 48–72 hours of settling to comply with local discharge limits. An analytical laboratory should test the settled wastewater for lead, nickel, and zinc. The results should confirm whether or not enough there is settling time to ensure that the wastewater is acceptable for discharge.

## **Treatment Control BMPs**

If treatment controls are installed at the facility, see section 4 of this Handbook for information on inspecting and maintaining the BMPs.

For information on designing treatment controls, see section 5 of the *Development Planning Handbook*.

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## More Information

### Booklets, Checklists, Fact Sheets, and Pamphlets

Alameda County Clean Water Program. 2012. *Tips for a Cleaner Bay: How Your Vehicle Service Facility Can Prevent Stormwater Pollution*. Available online at [http://www.cleanwaterprogram.org/uploads/IIDC\\_Vehicle\\_2012.pdf](http://www.cleanwaterprogram.org/uploads/IIDC_Vehicle_2012.pdf).

California Department of Toxic Substances Control. 2010. *California Green Station Program, Vehicle Service and Repair (VSR)*. Webpage includes fact sheets, training modules, and other resources. Available online at <https://dtsc.ca.gov/green-station/>.

California Department of Toxic Substances Control. 2001. *Case Studies in Aqueous Parts Cleaning*. Available online at <https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/01/CasestudiesAuto02.pdf>.

Sacramento Stormwater Management Program. n.d. *Best Management Practices For Industrial Storm Water Pollution Control*. Available online at <https://www.beriverfriendly.net/newdevelopment/stormwaterqualitydesignmanual/>.

San Bernardino County Stormwater Program. n.d. *Gas Station –Illegal Discharge*. (Pamphlet). Available online at <http://sbcountystormwater.org/PDF/SBC-Gas-Station-Handout.pdf>.

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U.S. Environmental Protection Agency. 1999. *Best Environmental Practices for Auto Repair: Aqueous Part Cleaning*. Available online at <https://www.epa.gov/sites/production/files/2016-02/documents/autoclean.pdf>.

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U.S. Environmental Protection Agency. 1999. *Profit through Prevention, Best Environmental Practices for Fleet Maintenance*. Available online at <https://www.epa.gov/sites/production/files/2016-02/documents/profit.pdf>.

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California Coastal Commission. 2002. *Model Urban Runoff Program Appendix 4W BMPs for Vehicle Service Facilities*. Available online at <http://www.montereysea.org/docs/program/MURP.pdf>.

California Department of Toxic Substances Control. 2006. *Pollution Prevention in Auto Body and Paint Shops, Sanding Waste Management*. Document #801. Accessed at [https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/01/TD\\_FS\\_SandingWaste.pdf](https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/01/TD_FS_SandingWaste.pdf).

City of Santa Cruz. Revised 2010. *Vehicle Service Facilities: Best Management Practices – Chapter 1 of Best Management Practices Manual for the Storm Water Program*. Available online at <http://www.cityofsantacruz.com/home/showdocument?id=6038>.



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U.S. Environmental Protection Agency. 2017. *Auto Repair and Fleet Maintenance Pollution Prevention*. Webpage includes fact sheets and videos. Available online at <https://www.epa.gov/saferchoice/best-workplace-practices-automotive-repair-and-fleet-maintenance>.