

P2 Opportunities Checklist for Vehicle Maintenance Activities

| Hazardous Materials Controls | Yes | No | Compliance and P2 Opportunities |
|--|-----|----|--|
| Do you have a hazardous material inventory of all hazardous materials stored at your shop? | | | <p>A complete inventory is critical to reducing the overall number of hazardous materials stored in your shop.</p> <ul style="list-style-type: none"> • An inventory will enable shop managers to evaluate and possibly reduce the number of hazardous materials maintained at the shop. • Owners may be able to reduce hazardous materials permit fees, which are sometimes calculated by the number of hazardous materials stored at a facility. |
| Is a “high and low” amount designated for each hazardous material identified in your inventory? | | | <p>A “high and low” level is established by; determining a “high” level (the highest amount of material a shop will use in a 30 day period), and a “low” level (generally a number for which the supply will not run out until a new order is received.)</p> <ul style="list-style-type: none"> • A shop can eliminate overstocking and waste due to confusion. |
| Is your hazardous materials inventory updated monthly? | | | Checking inventory against HIGH/LOW quantity limits will help determine excesses or shortages |
| Do you use a “first-in first-out” policy to prevent materials from deteriorating in storage? | | | Rotate containers on shelf so that hazardous materials nearing expiration are placed at front of shelves. This will eliminate hazardous materials from becoming hazardous waste and requiring disposal. |
| Do you maintain and enforce a clear policy of using hazardous materials only for their intended purpose? | | | You may generate unnecessary hazardous waste if you use supplies for purposes other than their intended uses. For example, don't use parts cleaning solvents to clean your floors. |
| Shop Cleanup Management | | | |
| Are drip pans or other spill prevention methods used at fluid transfer points. | | | Fluid drainage of vehicles should occur only at designated locations that are set up to capture any spills that would occur. |
| Do you use a dry shop method for cleanup of spills in your shop area? | | | Dry shop methods for spills within the service bay will help to eliminate contaminated absorbents generated from spill cleanups. Contaminated absorbents represent a considerable cost and waste generation total for many auto repair activities. |

| Shop Cleanup Management (con't) | Yes | No | |
|--|------------|-----------|--|
| Are all drains and sumps within the service bay areas closed? | | | Closing off all drains within the service bays will help to prevent illegal discharges occurring from spills to the storm water and sanitary sewer systems |
| Are oil caddies used for the collection and transportation of used oils to collection points. | | | Oil caddies help to eliminate the potential for oil spill occurrences during fluid drainages and the transportation and pouring oils form oil pans into used oil storage containers. |
| Are funnel lids used on drums that liquid wastes are poured into? | | | Funnel lids used on storage drums at your waste accumulation points will help eliminate spills by technicians at waste storage areas and improve its appearance. |
| Storage | Yes | No | |
| Are hazardous materials storage lockers or storage racks located indoors or under cover? | | | A covered storage area is important because rainwater can increase your waste volumes and contaminate your raw materials. Also, exposure to sunlight can change the characteristic of your hazardous materials or raise the pressure inside sealed containers to dangerous levels. |
| Are all storage areas provided with secondary containment? | | | <p>Secondary containment prevents spill runoff and minimizes spill contamination of soil and water.</p> <ul style="list-style-type: none"> ▪ 30 gallons of diesel or oil can easily contaminate over 10 cubic yard of soil under certain conditions. |
| Are all containers closed when not in use? | | | <ul style="list-style-type: none"> ▪ Open containers are a spill hazard. It is a regulatory requirement to keep all containers (raw materials and wastes) closed when not in use. |
| Are your personnel trained in proper hazardous material and waste handling and storage techniques? | | | <ul style="list-style-type: none"> ▪ Waste management and waste minimization plans will not work unless your personnel are trained. |
| Do you conduct a weekly inspection of all your hazardous waste accumulation areas? | | | <p>Hazardous waste storage areas are required to be inspected weekly to determine if:</p> <ul style="list-style-type: none"> ▪ containers are properly marked ▪ containers are in good shape ▪ wastes are properly segregated ▪ spills have not occurred |
| Are hazardous wastes segregated and clearly marked? | | | <ul style="list-style-type: none"> ▪ Waste reduction requires waste segregation. ▪ Mixed waste can lower the recycle value of your wastes. ▪ Chlorinated solvents in your used oil will cost you additional money and prohibit your waste from being recycled. |

| | | | |
|--|------------|-----------|--|
| Is your hazardous waste and hazardous materials storage area within a secured area? | | | <ul style="list-style-type: none"> Areas must be secured to prevent sabotage or midnight dumping to your collection area. |
| Maintenance Practices | Yes | No | |
| Does you use a battery exchange service? | | | <p>Several vendors provide a service to supply businesses with new batteries and pick up your used batteries on an exchange basis.</p> <ul style="list-style-type: none"> This will eliminate storage of lead-acid batteries at your facility and reduce waste batteries as a waste stream.. |
| Is your spent antifreeze recycled onsite or transported offsite for recycling? | | | <p>You can recycle antifreeze at your shop using various methods:</p> <ul style="list-style-type: none"> You can purchase your own ASTM certified equipment and recycle onsite (large generators). You can contract for a recycler to transport recycled antifreeze to you in exchange for your spent antifreeze. You can hire a recycler to recycle your antifreeze onsite using portable equipment. The average cost for an on-site recycler to come onto your facility and recycle antifreeze is \$2.50/gal. * This is lower than the cost to purchase virgin antifreeze and it also eliminates the cost for disposal and transportation. |
| Do you use an industrial laundry service or shop rag contract for your dirty rags? | | | <ul style="list-style-type: none"> You can contract a laundry service to supply clean rags and collect dirty one for washing. In most cases this will allow you to reduced contaminated rags that require disposal as a haz. waste? |
| Do you recycle your radiator flush water? | | | <p>If your shop is primarily a radiator shop, using a closed loop, recirculating flush system will eliminate your wastewater discharges and associated industrial wastewater permits and sampling requirements.</p> |
| When servicing brakes do you use a wet cleaning brake system that recirculates and filters the water based solution? | | | <p>Use of solvents in cleaning and degreasing operations is becoming prohibited in many areas in California.</p> <ul style="list-style-type: none"> Aqueous brake washing machines have been successfully tested by many shops and are an economical advantage to using aerosol cans for brake cleaning. |

| Parts Cleaning | Yes | No | <i>Check with your local Air Quality Management Districts to see whether they have recently adopted regulations to prohibit solvent based part washers in your area.</i> |
|--|-----|----|---|
| Have solvent parts washing equipment been switched out for aqueous based cleaning equipment? | | | Aqueous cleaners are non-flammable, safer to use, reduce air pollution and can last longer than solvent based products. Spray cabinets and ultrasonic aqueous units also save on labor and cost. |
| Are solvent tanks placed at convenient locations near work areas to reduce drips and spills? | | | Minimizing drips and spills helps to reduce the amount of solution you lose and reduces the amount of spills around the work area. |
| Do you pre rinse or wipe off dirty engine parts? | | | <p>Cleaning excessive sludge and oil off parts before cleaning in your hot tank will extend the life of your solution.</p> <ul style="list-style-type: none"> • Wipe of excess grease using mechanical cleaning methods, including wire brushing • Consider two stage parts washers with filtration units to extend cleaning solution life. |
| Does your partwasher have a rack to allow parts to drain into the sink for a few minutes after cleaning? | | | Allowing solvent time to drain from the parts will prevent spills when they are taken to the work area. Loss of fluid is also reduced when as much fluid as possible is allow to drain back into the cleaning tank. |
| Is your parts cleaning tank kept closed when not in use? | | | A lid on an open tank will help prevent evaporation, especially if the tank is heated. |
| Does a hazardous waste hauler collect parts washer waste for recycling or treatment? | | | Aqueous wastes from your parts washers generally tend to become hazardous waste after a period of use and require transportation off-site by a licensed hauler. Disposal of parts washer solutions to oil water separators, or any drains is not permitted. |
| Do you own onsite recovery equipment, such as a distillation or evaporation unit? | | | Shops that have multiple parts washers or generate large amounts of contaminated aqueous wastes may find it economically feasible to purchase on-site equipment that can treat or recycle aqueous waste to significantly reduce waste disposal costs. |
| Parts Cleaning | Yes | No | |
| Do you use a detergent based cleaning solution instead of a caustic solution when you are cleaning | | | Caustic solutions are considered hazardous. Many aqueous solutions display less toxic characteristics and can be disposed of at a lower price. |

| | | | |
|---|------------|-----------|--|
| aluminum engine parts? | | | |
| Does your parts washer remove the sludge and solids from your solution and reactivate the remaining solution for reuse? | | | <p>When purchasing parts washer tanks consider systems with recirculating and filtration systems</p> <ul style="list-style-type: none"> • Partswasher equipped with mechanical filtering for sludge and oil skimming options allow the operator to extend solution life (up to one to two years for some systems). Skimmed oil can be recycled with your used oil, and sludge should be disposed of separately. |
| Do you lease your own hot tank(s) or jet spray washer(s)? | | | <p>Purchasing your own cleaning tanks can be an economical advantage to continuously paying for leased equipment and services. Operators who own their own tanks are allowed more options for the management of their waste and pollution prevention opportunities. Sources for information on equipment and service suppliers can be obtained in the DTSC P2 web directory.</p> |
| Vehicle Washing | Yes | No | |
| Have you identified the location and destination of all drains and sumps on your property? | | | <p>Owner operators of shops need to know where all open drains on a property flow to, whether it is the storm sewer, sanitary sewer or local surface waters.</p> |
| Is the use of detergents prohibited at the washrack? | | | <p>Emulsifying detergents inhibit the separation of oil and water which is necessary for the operation of the oil water separator to prevent oil discharges to the sanitary sewer or other waterways.</p> |
| Is your washrack and other areas where vehicle cleaning occurs connected to an oil-water separator? | | | <p>Local agencies require treatment of your waste wash water if it is disposed of to the sanitary sewer for treatment at a municipal sanitary treatment facility.</p> |
| Is any water in the washing process recycled? | | | <p>Recycling and reuse of wash rack water can reduce or eliminate the need for industrial waste water permits and sampling requirements.</p> |

| | | |
|---|--|--|
| Do you screen out sludge and solids from washrack activities before they reach the oil-water separator? | | <p>Sludge and solids are a major contaminant of auto repair shop's wastewater discharges to the sewer systems.</p> <ul style="list-style-type: none"> Minimizing these wastes from your cleaning tanks and sumps can reduce your clean-out frequency resulting in lower disposal costs and waste generation. |
| Does a hazardous waste hauler collect your aqueous waste for recycling or treatment? | | <p>If you transport your aqueous waste off-site you must determine if it is considered a hazardous waste. If your waste is tested as hazardous you must use a hazardous waste hauler to remove your hazardous waste.</p> |
| Do you own on-site aqueous waste treatment equipment? | | <p>If your shop generates large amounts of aqueous wastes, an on-site aqueous waste treatment system may be more beneficial than offsite disposal. Options to consider are:</p> <ul style="list-style-type: none"> Aqueous evaporation units Aqueous treatment units that remove hazardous constituents and recycle the water. |

Using Waste Reduction

Many waste reduction techniques cost little or nothing to use. For example:

- Improve inventory control
- Reduce quantities in storage
- Use FIFO policy for hazardous materials usage
- Inspect/inventory storage areas regularly
- Place equipment at convenient locations within the shop

Vehicle Service and Repair Shop P2 Strategies

The following table lists the waste reduction options with their associated activities that are discussed in the checklist. Use it to identify options that can be used in your shop and refer back to this table from time to time to ensure you are taking advantage of all the options at your disposal.

| Process/Waste | Pollution Prevention Opportunities |
|---|--|
| Absorbents, Spill Cleanup & Prevention | <ul style="list-style-type: none"> ⇒ Use hydrophobic mops (4-Step Dry Shop Clean-up Method) to clean oil spills and recycle used oil ⇒ Use reusable absorbent pads ⇒ mop antifreeze from spills and collect for recycling ⇒ Use oil caddies for oil collection and transfer to accumulation drums |
| Aerosol Cans | <ul style="list-style-type: none"> ⇒ Use refillable spray cans. Evaluate non-hazardous, non-chlorinated n-hexane free solutions as alternatives ⇒ If unable to empty through normal means use an aerosol can puncturer and recycle scrap metal. ⇒ Empty aerosol can completely through normal use and recycle ⇒ Use aqueous brake cleaning equipment |
| Antifreeze | <ul style="list-style-type: none"> ⇒ On-site antifreeze recycling – use ASTM certified equipment ⇒ Use off-site recycling and coolant exchange services ⇒ Use propylene glycol for less toxic alternative |
| Brake pads/shoes | <ul style="list-style-type: none"> ⇒ Return brake shoes to manufacturers. ⇒ Recycle shavings pads and shoes (scrap metal recyclers) ⇒ Use aqueous brake cleaners ⇒ Eliminate the use of chlorinated solvents for cleaning |
| Excess and expired raw materials | <ul style="list-style-type: none"> ⇒ Use FIFO (first in first out) ⇒ Establish “High and Low” quantities for each material ⇒ Conduct a regularly scheduled inventory of hazardous materials |
| Lead-acid batteries | <ul style="list-style-type: none"> ⇒ Use a Battery Exchange/Maintenance Service ⇒ Repackage and store damaged batteries in plastic or fiberglass containment (covered if outdoors). |
| Oil Filters | <ul style="list-style-type: none"> ⇒ Purchase reusable oil filters for fleet vehicle ⇒ Hot drain and recycle used oil filters ⇒ Crush used oil filters |
| Oil & Fuel Filters | <ul style="list-style-type: none"> ⇒ Hot drain filters and recycle if possible ⇒ Segregate from oil filters and dispose of properly |
| Solvents from Parts Cleaning | <ul style="list-style-type: none"> ⇒ Use hot water aqueous parts washers ⇒ Wipe off heavy grease before cleaning with a wire brush or shop towel. ⇒ Keep parts washer covers closed |

| | |
|---|---|
| | <ul style="list-style-type: none"> ⇒ utilize parts washers with filtration and sludge separation technologies to extend cleaning solution life. ⇒ Use non-hazardous solvent alternatives. ⇒ Use a two stage cleaning system ⇒ Use aqueous parts cleaning system with ultrasonic or mechanical agitation |
| Shop Towels | <ul style="list-style-type: none"> ⇒ Use a shop rag service through an industrial launderer ⇒ Don't saturate rags going to an industrial launderer ⇒ Segregate rags used for solvent cleaning, from grease and oil contaminated rags if shipping for haz waste disposal |
| Used Oil | <ul style="list-style-type: none"> ⇒ Engine Oil analysis ⇒ Install by-pass filters to extend oil changes ⇒ Use drip pans and oil caddies ⇒ Prevent contamination of used oils from brake fluids and chlorinated solvents ⇒ Insure your used oil is sent to an oil recycler ⇒ Purchase re-refined oils |
| Vehicle Washing & Wash water | <ul style="list-style-type: none"> ⇒ Equip inlet drains with grates and a gradiated mesh from larger to smaller to prevent sediments from entering wash sump. ⇒ Berm and cover existing outdoor washracks ⇒ Use a closed loop system that recycles wash water. ⇒ Store hazardous materials away from wash racks |