

Waste Minimization at Vehicle Maintenance Shops

Sierra helps the facility meet the SPCC requirements by performing a pre-visit assessment in conjunction with a facility site visit.

The US Environmental Protection Agency (USEPA) addresses hazardous waste management through the Resource Conservation and Recovery Act (RCRA), first introduced in 1976. RCRA regulates hazardous waste generation, storage, treatment, and disposal. For a waste to be considered hazardous, the material must first be a solid waste and then must meet criteria as a “characteristic” waste or as a “listed” waste. Vehicle maintenance activities may generate hazardous waste that would be subject to the RCRA requirements.

If managed judiciously, most vehicle maintenance shops (outside the state of California) may be able to avoid generating hazardous waste without any impact on their operation. Sierra believes that not generating hazardous waste is the simplest approach to manage it.

PROBLEM STATEMENT

Vehicle maintenance shops may generate hazardous waste and would like to be able to reduce or eliminate it.

STRATEGY & SOLUTION

The following are key areas for the maintenance facility manager to review:

Waste Assessment: Identifying wastes produced by work processes. The first step identifies existing (documented) and previously undocumented waste streams. Typically, potential hazardous waste sources at a vehicle maintenance shop include:

- Used anti-freeze
- Oily waste sump sludge
- Parts cleaning tank sludge
- Used solvents
- Used caustic parts washing solution
- Used oil, transmission fluids, lubricants



Source Modification/Elimination: Reducing the source or cause of the hazardous waste is a powerful technique that can be used to significantly decrease and even eliminate hazardous waste generation. Some proven source reduction methods include:

- **Avoiding Contamination:** Different fluids, such as oils, can become contaminated with hazardous waste which, by the mixture rule, leads to the entire mixture being considered hazardous waste. For example, 50 gallons of used oil (non-hazardous) combined with one gallon of hazardous paint may result in 51 gallons of hazardous waste.
- **Source Elimination:** Many organic solvents are hazardous, yet there are non-hazardous solvents readily available that perform as well as the hazardous solvents. Replacing the hazardous solvent is an immediately effective means of completely eliminating the generation of hazardous waste.
- **Best Practices:** Many vehicle maintenance shops pre-scrub parts to remove large particles. These particles can dissolve in a parts cleaning tank. If the large particles contain lead, the sludge may be hazardous due to lead concentration. Pre-scrubbing the parts to remove large particles may be an effective way to reduce the amount of hazardous waste generated.
- **Waste Characterization:** Testing a waste that was previously considered hazardous may determine that the waste is now non-hazardous.

Housekeeping Guidelines: After waste assessment and source reduction, it usually becomes necessary to implement corrective action to ensure hazardous waste reduction efforts remain in place. The corrective action usually entails minimal to moderate changes to the vehicle maintenance shop's existing operational procedures. Frequently, these changes require that wastes be segregated to prevent cross-contamination. Additionally, it is a best practice to implement an inspection program and to provide secondary spill containment. These two measures alone can greatly reduce the possibility of spills and leaks.

Training: To be most effective, the changes should be documented in writing and implemented as procedures. After implementation, employees should be trained on the changes to existing procedures and practices. Key employees, including those involved in container inspection, may require additional training. In most cases, it is recommended that environmental training be performed yearly. New employees should be trained within 30 days of starting on the job.

RESULT

A deliberate and thorough approach to reducing hazardous waste is the most proactive approach for managing hazardous waste. This approach reduces the burden of managing hazardous waste at vehicle maintenance shops and allows management to more effectively utilize their precious resources.