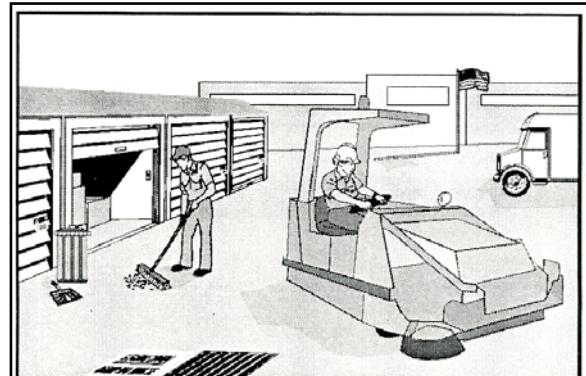


# **CHAPTER 6**

## **MANAGING THE MAINTENANCE YARD**

This chapter looks at daily practices at county road maintenance yards and suggests ways to avoid spills, site contamination, and runoff problems. BMP emphasis is on controlling the potential pollutant sources. Much of this material came from the BMPs recommended in the Caltrans Storm Water Quality Handbook – Maintenance Staff Guide and is anticipating BMPs that may soon be required. In March 2003, Phase II of EPA's Storm Water Rule will take effect for areas with small populations and the County will need a Storm Water Management Plan and General Industrial Storm Water Permit from the Regional Water Quality Control Board for each of its maintenance yards. This chapter should assist with the required strategy and its compliance.



Each maintenance yard site has different pollution risks – those close to streams and in high rainfall areas are of course at higher risk than those connected to sewer systems and with low rainfall. Unlike urban areas, rural sites often do not have a sanitary sewer system nearby that can be connected to for liquid waste disposal, nor are there developed storm water drains. Care must always be taken when dealing with potentially hazardous materials ("hazmat"). Safer alternative products are encouraged to minimize the risk of toxic spills that could contaminate surface water as well as groundwater.

The primary goals for this chapter are:

- Prevent or minimize delivery of sediment and chemicals to streams
- Protect aquatic and riparian habitat

### **6-A Facility Housekeeping Practices**

### **6-B Building & Grounds Maintenance**

### **6-C Vehicle & Equipment Maintenance**

### **6-D Material Use & Storage**

# 6-A      FACILITY HOUSEKEEPING PRACTICES

**Description:** Daily activities occurring at Maintenance facilities often involve the use of materials and products that are potentially harmful to the environment. Good housekeeping practices are intended to reduce the potential for discharge of pollutants to the storm water drainage system or watercourses by promoting efficient and safe storage, use and clean-up methods of potentially harmful materials.

## **Environmental Concerns:**

- Discharge of the following materials into the storm water drainage system or watercourses: fuel, oil (machine, hydraulic, crankcase), chemicals (acids, solvents & degreasers, corrosives, antifreeze), hazardous waste, heavy metals, nutrients, and sediments.

## **Best Management Practices:**

1. Sweep or vacuum maintenance facility floors and pavement to prevent tracking of materials outdoors. Use mopping as an alternative to hosing down work areas when possible.
2. If mopping is used to clean floors or pavement, contain and dispose of the mop water following these guidelines:
  - a) Remove any spilled oil or other liquids using dry sweep or rags.
  - b) Do not dispose of mop water into the parking lot, street, gutter, or drain inlet.
  - c) If an oil/water separator is available, pour the mop water into the separator so that the wastewater is treated before being discharged to the sanitary sewer system.
  - d) If sanitary sewer system connection is not available, provide dead-end sump to collect liquids. Periodically clean out sump and haul to sewer system.
  - e) Dispose of used rags and other contaminated materials in a safe manner.
3. Use drip pans or absorbent material under leaking vehicles and equipment to capture fluids. Promptly remove absorbent material or drip pan after use and dispose properly.
4. Recycle materials such as used oil, antifreeze, solvents or asphaltic emulsion whenever possible.
5. Ensure containers are clearly labeled.
6. Use safer alternative housekeeping products to minimize the potential discharge of toxic products to storm water drainage systems or watercourses, where practical and effective.  
[See 6-D-7: Safer Alternative Products]

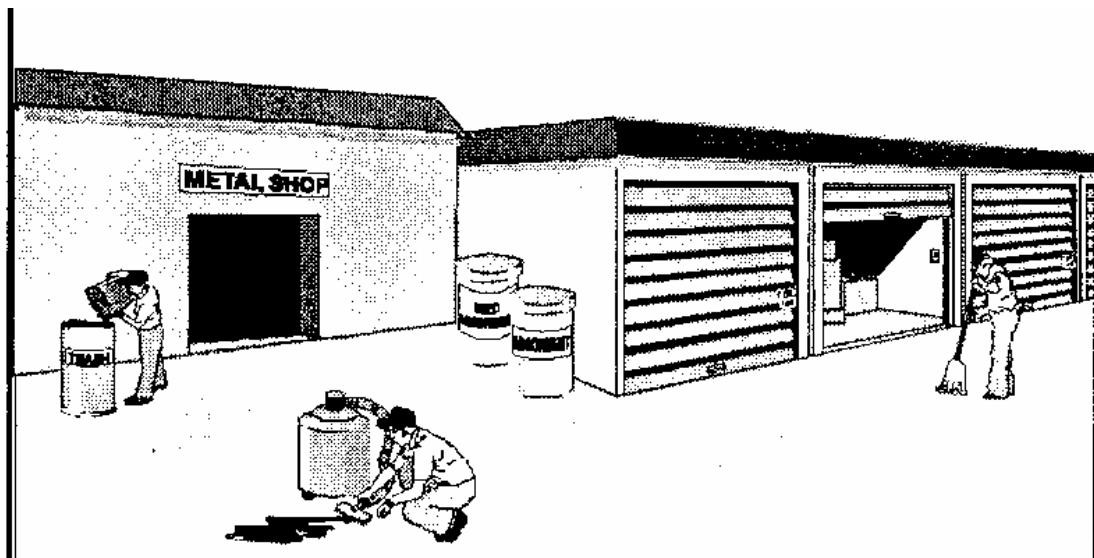
## 6-A      FACILITY HOUSEKEEPING PRACTICES

7. Perform periodic employee education about storm water management on the site.
8. Locate the expansion of existing, or the construction of new, maintenance yards outside of the 100-year floodplain.

### Permits Possibly Needed:

- Notice of Intent (NOI) to SWRCB for preparation of Storm Water Management Plan to cover all BMPs for each maintenance yard site
- Preparation and compliance with Storm Water Management Plan and General Industrial Storm Water Permit from RWQCB to cover all BMPs for each maintenance yard, by March 2003.

General, every day good practices!



*Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)*

# 6-B BUILDING & GROUNDS MAINTENANCE

**Description:** Permanent maintenance facilities require building and grounds maintenance. Building and grounds maintenance includes care of landscaped areas around the facility, cleaning of parking areas and pavements other than in the area of industrial activity, and maintenance of the storm water drainage system. Minimization of water use, proper handling and disposal of waste collected and wash waters used during building and grounds maintenance, and immediate clean-up of spills are key elements in the protection of storm water quality.

## **Environmental Concerns:**

- Discharge of the following materials into the storm water drainage system or watercourses: litter and debris, organic material, fertilizer, pesticides, and herbicides.

## **Best Management Practices:**

1. For Building Maintenance:
  - a) Minimize water use in washing activities.
  - b) Properly dispose of wash water and sediment generated by building maintenance activities. Dispose of wash water to the sanitary sewer system where feasible. Dispose of sediment as solid waste.
  - c) Regularly inspect, clean, and maintain the storm water drainage system. This is particularly important in the fall prior to the first rains.
  - d) Dispose of sweepings and cleaning wastes as solid waste.
  - e) Cover all dumpsters during the rainy season.
2. For Grounds Maintenance:
  - a) Apply fertilizer and pesticides in accordance with the label instructions. Use integrated pest management where appropriate. (See: 3-D Vegetation Management)
  - b) Avoid excessive irrigation of landscaped areas to minimize runoff containing nutrients, pesticides, and herbicides. Consider factors such as soil structure, grade, time of year, and type of plant material in determining the proper amounts of water for a specific area. Program the amount and timing of irrigation through automatic controllers to minimize runoff and encourage deep rooting of vegetation.
  - c) When flushing water lines, reuse the rinse water for landscaping purposes if possible. Note that a discharge from water line flushing is considered to be a permissible non-storm water discharge as long as large volume discharges do not adversely impact the receiving waters.

## 6-B BUILDING & GROUNDS MAINTENANCE

- d) Shut off water source and make necessary repairs on broken water lines, sprinkler valves, or nozzles as soon as possible. When digging out the irrigation line, return the soil to the same area after repair is complete.
  - e) Protect downstream storm water drainage systems and watercourses from water pumped or bailed from trenches excavated to repair water lines. For example, cover or block drain inlets with sand bags or plastic bags filled with native material. Remove covers/blocks once clean-up is completed.
  - f) Perform erosion and sediment control on erodible sites through the use of appropriate BMPs. (See: 3-A-2 Erosion Repair & Control; Appendix B-4)
3. Ensure that drains within buildings and outside storage areas do not discharge directly to the storm sewer system. Grade process and storage areas to minimize run-on into drains, such as from building downspouts. Connect on-site drains with potentially polluted runoff to the sanitary sewer system or an on-site recycling or treatment unit.
  4. Ensure that any spill can be diked and contained immediately by having necessary materials on-site and appropriate training. Clean up all smaller spills using absorbent material or a dry mop method. Place absorbent material collected by sweeping into a waste container. Dispose of the contents according to approved disposal procedures. Large spills may require a private company or Hazmat (Hazardous Materials) team for complete clean-up.

### Permits Possibly Needed:

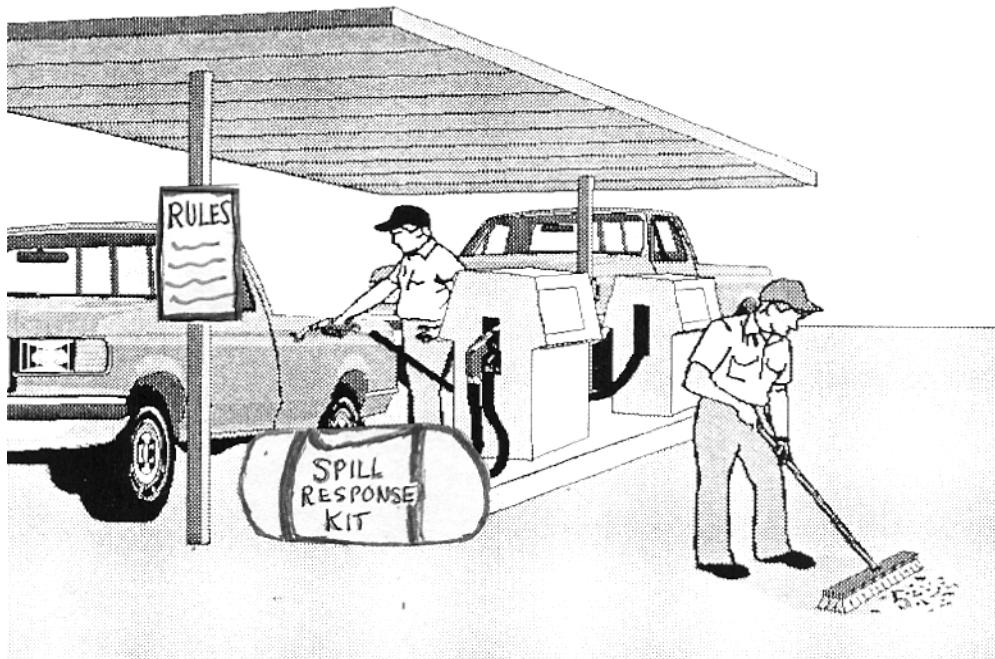
- County Pesticide Ordinance and Hazmat (Hazardous Materials) protocols.
- Comply with County Spill Prevention Control and Countermeasure Plan (SPCC) for each road maintenance yard site
- Comply with RWQCB General Industrial Storm Water Plan and Permit (March 2003)

*Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)*



## 6-C VEHICLE & EQUIPMENT MAINTENANCE

This section addresses all of the activities performed for maintaining county vehicles and equipment at the maintenance yard.



Source: *Caltrans Storm Water Quality Handbook – Maintenance Staff Guide* (1998)

### 6-C-1 Fueling

### 6-D-2 Maintenance & Repair

### 6-D-3 Pressure Washing

### 6-D-4 Oil/Water Separators

**Description:** When vehicle and equipment fueling takes place at a Maintenance facility, the potential exists for fuel to be leaked or spilled at the site. The procedures for vehicle and equipment fueling are designed to minimize contact between storm water runoff and spilled fuel, oil, or other leaked vehicle fluids at equipment fueling areas.

## **Environmental Concerns:**

- Discharge of the following materials into the storm water drainage system or watercourses: fuel, vehicle fluids, oil.

## **Best Management Practices:**

- 1) Implement the following practices for vehicle and equipment fueling activities at each maintenance facility:
  - a) Keep an ample supply of spill clean-up materials and spill control equipment near fueling areas to clean-up spills. Verify weekly that sufficient spill control clean-up materials are located near fueling areas.
  - b) Post proper fueling and spill clean-up instructions at fueling areas.
  - c) Never leave the area while equipment is being fueled.
  - d) Install automatic shut off valves at each pump, and install manual shut off valves inside and outside of shop buildings.
  - e) Provide fueling areas with secondary containment with enough capacity to contain a large spill. Pave the ground where fueling takes place, such as with concrete or chip seal, and clean up spilled fuel immediately. If ground is not paved, remove any contaminated soil and dispose as hazardous material.
  - f) Ensure that fuel tanks and fuel dispensers have current permits from the appropriate agencies.
  - g) Update spill prevention and control plans at least every 2 years.
- 2) Ensure that personnel who are involved in vehicle and equipment fueling activities adhere to the following guidelines:
  - a) When cleaning the area, use a “dry shop” principle (a damp cloth on the pumps and damp mop on the pavement).
  - b) Avoid hosing off the area.
  - c) Inspect portable fueling tanks regularly for cracks and leaks. Repair as necessary.
  - d) Handle and dispose of used spill pillows and other absorbents as hazardous waste. Be on the alert for possible fire hazards. [See: 6-D-3]

- 3) Clean up all spills. For example, use absorbent material or a dry mop method. Place absorbent material collected by sweeping into a waste container. Dispose of the contents according to approved disposal procedures.

## Permits Possibly Needed:

- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan for each maintenance yard site.
- Comply with General Industrial Storm Water Management Plan and Storm Water Permit from RWQCB (3/03).
- Comply with fuel storage tank regulations of the SWRCB



Some safe fueling practices (with operator taking picture while observing fueling).

# VEHICLE & EQUIPMENT MAINTENANCE & REPAIR

6-C-2

**Description:** Vehicle and equipment maintenance and repair may include vehicle fluid removal, engine and parts cleaning, body repair, and painting. This BMP is intended to reduce the discharge of potential pollutants from areas in which vehicle maintenance and repair activities are conducted by employing controls which minimize contact between storm water and the activity areas and products used in each activity.

## **Environmental Concerns:**

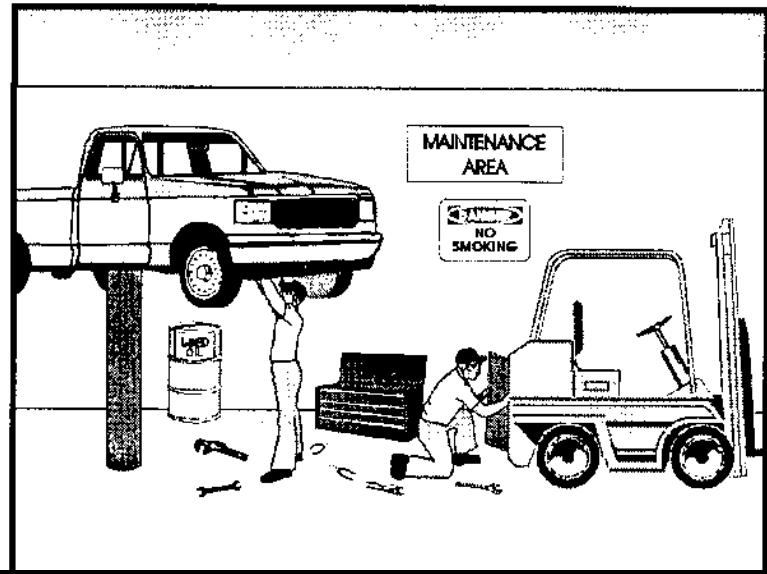
- Discharge of the following materials into the storm water drainage system or watercourses: oil, vehicle fluids, fuel, solvents, paint products, or metals

## **Best Management Practices:**

1. Perform vehicle and equipment maintenance in a designated covered facility, where feasible.
2. For Vehicle Fluid Removal:
  - a) Transfer contents to designated vehicle waste fluid storage barrels or tanks as soon as possible. (See: 6-D-2 Used Oil Recycling)
  - b) If required, drain fluid into a pan and immediately transfer fluid to the designated waste vehicle fluid storage barrel or tank. A larger drip pan may be placed under the primary drain pan to catch any spilled fluids.
  - c) Promptly remove drip pan after use.
  - d) Ensure safeguards, such as oil shut-off valves, are installed and maintained.
3. For Engine and Parts Cleaning:
  - a) Use self-contained sinks or tanks when working with solvents. Periodically check degreasing solvent tanks for leaks. Make necessary repairs as soon as possible.
  - b) Allow parts to drain over solvent sink or tanks, rather than allowing the solvents to drip or spill onto the floor.
  - c) Allow parts to dry over the hot tank, if available. If rinsing is required, rinse over the hot tank.
  - d) Recycle wastewater from steam-cleaning or pressure washing procedures as much as possible. Wastewater from steam-cleaning cannot be poured into storm drains. Discharges of this wastewater to any sanitary sewer system may require permits and/or pretreatment (oil/water separator). [See: 6-C-4 Oil/Water Separators]

# VEHICLE & EQUIPMENT MAINTENANCE & REPAIR

6-C-2



Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)



# VEHICLE & EQUIPMENT MAINTENANCE & REPAIR

6-C-2

- e) Designate specific areas in service bay for parts cleaning. Do not wash or rinse parts outdoors, since the discharge may enter a storm drain. Drains should be appropriately labeled to indicate whether they flow into a treatment system such as an oil/water separator, the sanitary system, or directly to the storm water drainage system.

## 4. For Body Repair and Painting:

- a) When receiving damaged vehicles, inspect for fluid leaks and use drip pans, if necessary.
- b) Minimize use of hose-off degreasers to clean body parts before painting. Instead, brush off loose debris and use rags to wipe down parts. Dispose of rags as solid waste or hazardous waste, depending on what is on them.
- c) Use a shop vacuum to clean-up dust from sanding material. Do not use vacuums for flammable liquids. Debris from wet sanding can be allowed to dry overnight and then swept or vacuumed. Dispose of dust as solid waste.
- d) Minimize waste paint and thinner by carefully calculating paint needs based on surface area and using proper sprayer cup size.
- e) Do not use water to control overspray or dust in the paint booth unless you collect this wastewater. Treat this water prior to discharge into a sanitary sewer system, if available.
- f) Clean spray guns in a self-contained cleaner. Recycle the cleaning solution when it becomes too dirty to use. Do not discharge cleaning waste to the sewer or storm drain.

## 5. For Drain Control:

- a) Keep internal floor drains plugged unless they drain to the sanitary sewer. Permanently seal any internal drains that still connect to the storm drain. Use dry clean-up methods, such as sweeping, when possible.
- b) Keep spill control equipment and covers available to protect external drain inlets.

## Permits Possibly Needed:

- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan for each site
- Comply with General Industrial Storm Water Management Plan and Storm Water Permit from RWQCB for each site (to be in place by 3/03).

# PRESSURE WASHING

6-C-3

**Description:** When vehicle and equipment pressure washing is conducted at a Maintenance facility, it is essential that the wash water not be disposed to the storm water drainage system. Alternative disposal methods include recycling or discharge to a sanitary sewer system. Proper vehicle and equipment pressure washing minimizes contact between storm water runoff and the equipment washing area, and ensures that the wash water is not discharged to the storm water drainage system or watercourses.

## Environmental Concerns:

- Discharge of the following materials into groundwater (via septic system), the storm water drainage system, or watercourses: oil, fuel, cleaning products (detergents), vehicle fluids, sediment, and metals

## Best Management Practices:

1. Locate vehicle and equipment pressure washing activities within a structure or building equipped with a connection to the sanitary sewer system or a closed loop system.
2. If a washing area must be located outside, the area should have the following characteristics:
  - a) surrounded by berms or graded to minimize contact with storm water running onto the area;
  - b) paved with concrete;
  - c) draining to a dead-end sump or directly into the sanitary sewer system;
  - d) no draining of the wash water containing cleaning solutions such as detergents and degreasers, or hydrocarbons, to the storm water drainage system or watercourses.
3. Designate an area for pre-wash of vehicles and equipment to capture solid materials, where feasible.
4. Inspect vehicle and equipment washing areas periodically.
5. Service the sump regularly.
6. Implement good housekeeping practices. (See: 6-A Facility Housekeeping Practices)
7. Inspect containment structures (such as berms) to ensure they are intact.

## Permits Possibly Needed:

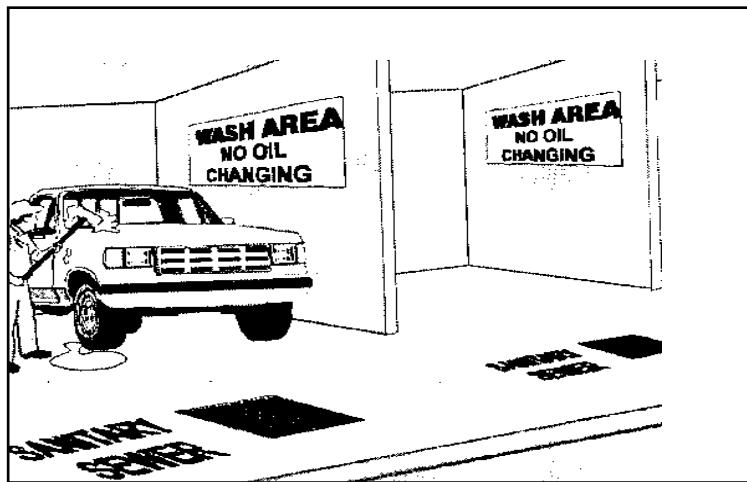
- Waste Discharge Permit from the North Coast RWQCB to set limits for petroleum hydrocarbons is required if wastewater discharges to a septic system leach field. The

# PRESSURE WASHING

6-C-3

discharge of detectable levels of petroleum constituents to groundwater is prohibited. A monitoring well may be required adjacent to the leach field to monitor the groundwater on a monthly schedule.

- Sewage treatment districts may require pretreatment and monitoring of wash water discharges to sanitary sewer.
- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan for the site.
- Compliance with General Industrial Storm Water Management Plan and Storm Water Permit from RWQCB (3/03).



*Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)*



# OIL/WATER SEPARATORS

## 6-C-4

**Description:** Maintenance facilities which have vehicle wash racks or other vehicle washing areas typically have oil/water separators installed at the vehicle wash areas. Additionally, Maintenance facilities may have portable oil/water separators for pretreatment of mop water and other wash waters prior to disposal to the sanitary sewer. Oil/water separators may be used when floating product or high concentrations of oil and grease are present in wastewater and source controls will not be effective. This BMP promotes proper maintenance of oil/water separators, which reduces the potential for water pollution. These procedures are for separators that use gravity separation with baffles. Other types of separators may require other maintenance guidelines.

### **Environmental Concerns:**

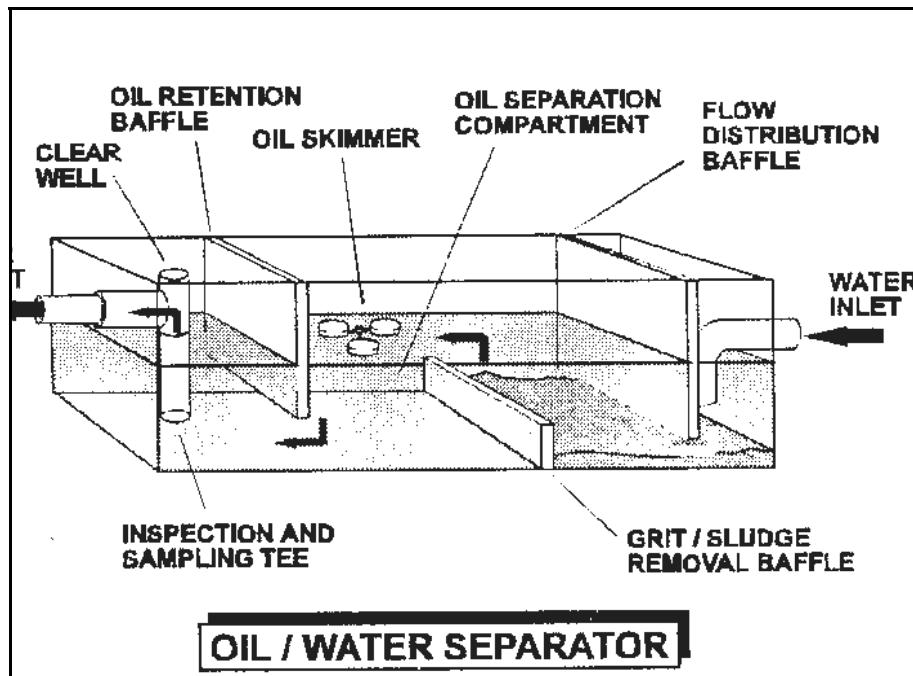
- Discharge of oil, grease, or other hydrocarbons into the storm water drainage system , watercourse, or groundwater
- Discharge of soluble oils and hydrocarbons into the soil via leach fields

### **Best Management Practices:**

1. Oil/water separators require frequent maintenance throughout the life of the structure. The following procedures should be implemented by Maintenance personnel who are responsible for operation and maintenance of oil/water separators:
  - a) Inspect and clean oil/water separators on a regular basis. Scheduled maintenance includes removal of accumulated oil and grit to maintain effective performance.
  - b) Dispose of oil properly, following all applicable hazardous waste disposal guidelines. Recycle oil if possible. (See: 6-D-2 Used Oil Recycling)
  - c) Grit removed from the oil/water separator may be classified as hazardous waste if it is contaminated with oil or heavy metals. Check with the local Hazmat Manager for proper procedures for disposal.
  - d) Record maintenance dates of oil/water separators in order to track upkeep and to prolong the life of the device.
2. Do not discharge oils & hydrocarbons into septic tanks or leach fields.

### **Permits Possibly Needed:**

- Separator may be a requirement of a Waste Discharge Permit from the RWQCB (SEE: 6-C-3 Pressure Washing)
- County Spill Prevention Control and Countermeasure (SPCC) Plan
- Compliance with RWQCB General Industrial Storm Water Management Plan and Storm Water Permit (by 3/03)



Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)

# 6-D MATERIAL USE & STORAGE

This section covers the handling, storage, and disposal of the hazardous, non-hazardous, and raw materials used in the Maintenance Yard.

Hazardous material practices are included even though counties have already had to address many of these issues in separate county Hazmat programs, Hazardous Materials Business Plans, and Spill Prevention Control and Countermeasure (SPCC) Plans.



## **6-D-1            Waste Minimization, Handling & Disposal**

### **6-D-2            Used Oil Recycling**

### **6-D-3            Storage of Hazardous Materials**

### **6-D-4            Outdoor Storage of Raw Materials**

### **6-D-5            Outdoor Loading / Unloading of Materials**

### **6-D-6            Above Ground Tank Leak & Spill Control**

### **6-D-7            Safer Alternative Products**

# WASTE MINIMIZATION, HANDLING & DISPOSAL

6-D-1

**Description:** This practice is intended to reduce the potential for the discharge of potential pollutants generated during waste handling and disposal activities to the storm water drainage system or watercourses by minimizing exposure of the waste to storm water. Hazardous waste generators have specific waste minimization requirements that must be documented.

## **Environmental Concerns:**

- Discharge of the following material into the storm water drainage system or watercourses: litter and debris, sediment, or organic and inorganic material

## **Best Management Practices:**

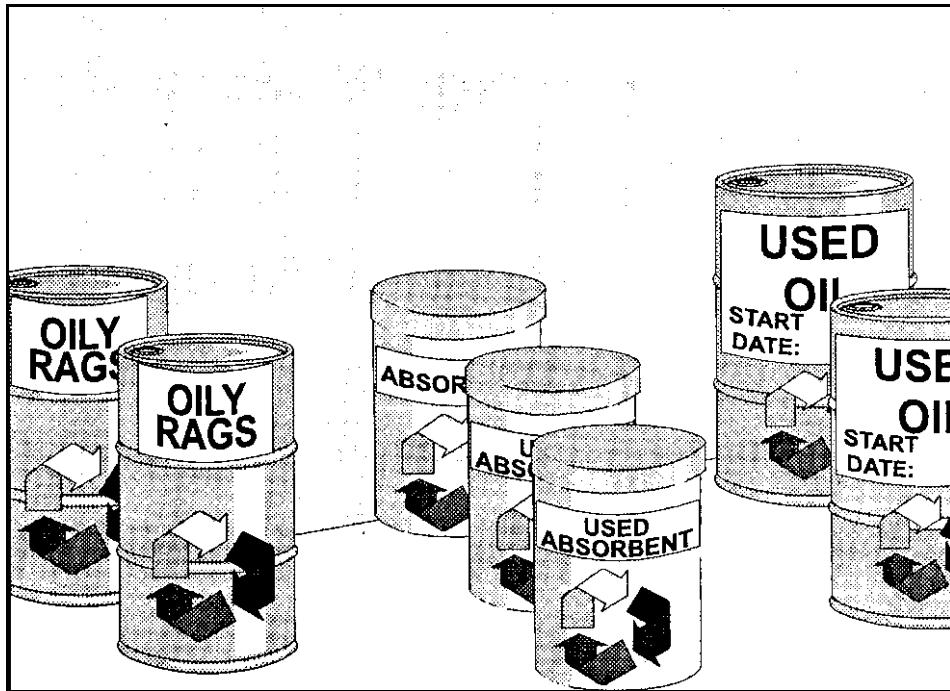
1. Methods for reducing the discharge of potential pollutants in waste include source reduction, reuse and recycling, tracking of waste generation, safe storage and disposal practices, and minimizing contact between storm water and waste.
2. Purchase or order supplies in smaller quantities to minimize excess or expired materials, when possible.
3. Closely evaluate waste streams: processes generating waste, chemical spill records, shelf life expiration, and product or raw material inventory records.
4. Inspect waste storage areas to ensure that materials stored in the area are not leaking, and if they do leak, take immediate measures to repair the leak.
5. Train staff to minimize wastes (e.g., use all paint, stop leaks and spills, and recycle all oil). Allow empty paint containers to evaporate prior to disposal.
6. Reduce or minimize waste handling activities when it is raining, the ground is frozen, or the ground is saturated.

## **Permits Possibly Needed:**

- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan for site and County Hazmat protocols.
- Comply with RWQCB General Industrial Storm Water Management Plan and Storm Water Permit for each site (3/03).

# WASTE MINIMIZATION, HANDLING & DISPOSAL

6-D-1



Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)

**Description:** This BMP applies to vehicle and equipment maintenance activities and other activities occurring at Maintenance facilities which generate oil. Used oil is classified as a hazardous waste and is harmful to the environment. Recycling waste oil in conformance with State regulations removes it from classification as a hazardous waste.

This practice applies primarily to uncontaminated used crankcase oil and waste equipment oil. It does not apply to waste oil containing chlorinated hydrocarbons (e.g., methyl chloride) or other hazardous substances.

### **Environmental Concerns:**

- Discharge of oil into the storm water discharge system or watercourses

### **Best Management Practices:**

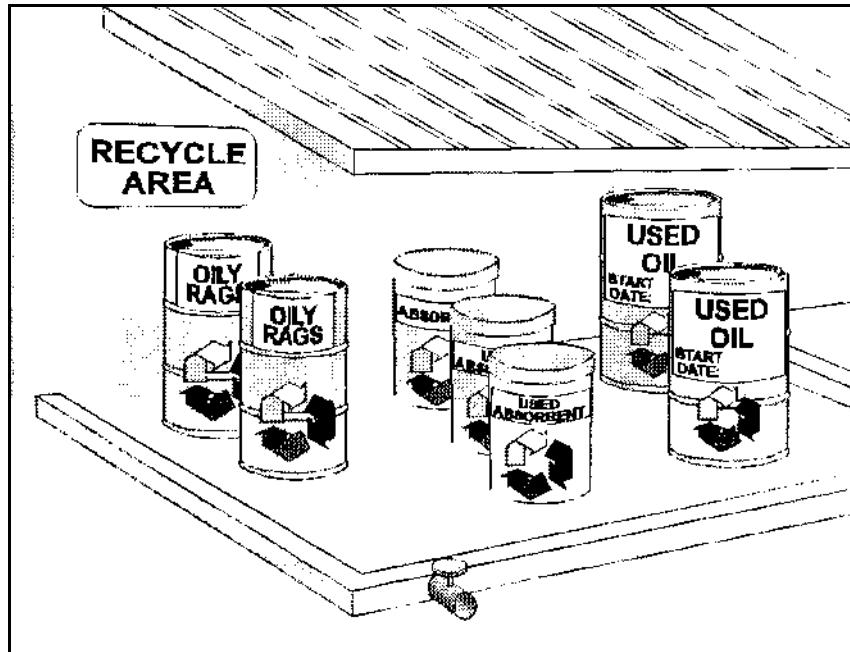
1. Handle waste oil following the requirements for hazardous waste generators (manifest, accumulation time, biennial report, etc.).
2. Establish the following procedures for all activities that use oil:
  - a) Locate a designated waste oil drum or tank near the activities that generate used oil.
  - b) Designate containers for used oil filters.
  - c) Cover all waste oil containers stored outside and provide secondary containment.
  - d) Clearly label all containers “Used Oil” or “Used Oil Filters” and include the accumulation start date.
  - e) Do not mix waste oil with any other type of waste or material, so that the oil can be recycled.
3. Manage the waste oil and filters in the following way:
  - a) Drain the oil in the used filters into the waste oil drum or tank, and close the drum/tank cover securely after use.
  - b) Place the used oil filter in the designated drum and close the cover securely.
  - c) Oily rags and wipes are a potential fire hazard. Place oily rags and papers in a fire-proof can designated for this purpose. Use a rag cleaning service for disposal of the rags if possible. If the rag or wipe is potentially contaminated with a listed hazardous waste, handle it as hazardous waste.
4. Typically, empty oil containers can be disposed of as solid waste if the containers are smaller than 5 gallon size. If the container size is 5 gallons or larger, send it for metal reclamation or reconditioning. Follow local regulations, which may vary.

# USED OIL RECYCLING

6-D-2

## Permits Possibly Needed:

- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan for site and County Hazmat protocols.
- Comply with RWQCB General Industrial Storm Water Management Plan and Storm Water Permit for each site (3/03).



Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)

# STORAGE OF HAZARDOUS MATERIALS

6-D-3

**Description:** Maintenance facilities store a variety of products that may be harmful to the environment if they come in contact with surface waters. This BMP is intended to reduce the potential for the discharge of materials from hazardous material storage sites to the storm water drainage system or watercourses by minimizing exposure of the materials to storm water and safeguarding against accidental release of materials.

## **Environmental Concerns:**

- Discharge of the following materials into the storm water drainage system or watercourses: acids, solvents, paint products, pesticides, fertilizers, fuels, oils

## **Best Management Practices:**

1. Follow the Hazardous Materials Business Plan filed for the Maintenance site with the County Dept. of Public Health. Hazardous materials storage must conform to this plan.
2. For Hazardous Materials Storage (General):
  - a) Store hazardous materials in a designated area containing similar and chemically compatible materials. Do not store incompatible products in the same storage area without some type of physical barrier separating the containers. For example, do not store oxidizers, such as hydrogen peroxide, with organics, or flammable materials such as oil.
  - b) Store hazardous materials under cover and away from areas that might drain into the storm water drainage system or watercourses, where feasible,. Store granular materials at least 10 feet from waterways, storm drains, curbs, and gutters and under cover.
  - c) Keep labels on containers and ensure that covers or caps are secure.
  - d) Install safeguards to prevent accidental releases such as overflow protection devices, automatic shutdown transfer pumps, protection guards around tanks and piping to prevent vehicle or forklift damage, and labeling. Limit access to unauthorized persons.
  - e) Use mats during delivery and storage.
  - f) Train personnel on proper handling procedures and familiarize them with the procedures in the emergency response plan. Training subjects and schedule may be listed in the Hazardous Materials Business Plan for the site.
  - g) Maintain hazardous materials storage areas to minimize exposure to storm water by storing materials on paved surfaces, covering from rain and snow, minimizing storage and handling of materials, and regularly inspecting storage facilities.

# STORAGE OF HAZARDOUS MATERIALS

6-D-3

- h) Maintain an ample inventory of appropriate spill clean-up materials near the storage area. Keep absorbent and baking soda on hand to soak up spilled fluids and to neutralize spilled acid from cracked batteries.
- i) Attend to any spills immediately.
- j) **Notify County Environmental Health office and the State Office of Emergency Services (OES) at 800-852-7550 when a hazardous spill occurs.** [See: 8-C Accident Clean-Up, for Notification Process]
- k) Store hazardous liquid and solid materials with secondary containment (Uniform Fire Code Article 80, Section 8003.1.3.3).
- l) Store used lead acid batteries, including cracked batteries, in secondary containment.
- m) Have proper storage instructions posted at all times in an open and conspicuous location.

## 3. For Regular Maintenance of Outdoor Container Storage Area:

- a) Inspect storage areas regularly or weekly and before and after rainfall events. Ensure all containers are properly labeled, covered, securely fastened, and in good condition. Check for external corrosion or other signs of wear of material containers (CCR Title 22 Section 66265.174).
- b) If a container is corroded or leaking, have trained and qualified personnel or the local Hazmat Manager transfer wastes to a new clean container. Label the new container appropriately and properly dispose of the old container. The old container may be classified as hazardous waste.
- c) Repair and/or replace perimeter controls, containment structures, and covers as necessary to ensure their proper functioning.

## 4. For Paint Storage Area:

- a) Inspect all pallets of paint to ensure that they are securely fastened before moving.
- b) Load and off-load paint on level ground when using a forklift to minimize possible spills and ruptures of paint containers.
- c) Where feasible, store paint materials in an area with a canopy or roof designed to direct run-on away from the area.

## 5. For Wood Post Storage Area:

- a) Cover wood post storage areas during the rainy season.

# STORAGE OF HAZARDOUS MATERIALS

6-D-3

## 6. For Disposal:

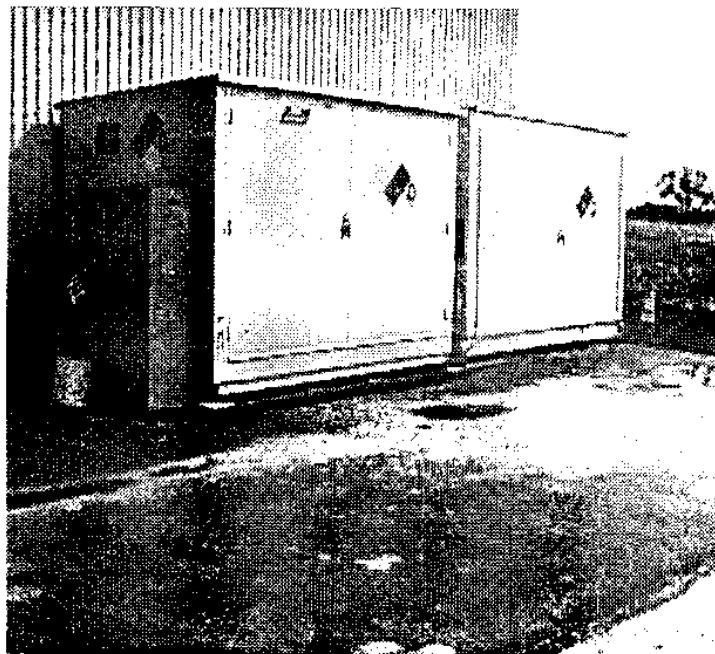
- a) Dispose of hazardous waste only at authorized treatment, storage and disposal facilities. Illegal dumping of hazardous waste is a violation subject to fine and/or time in jail.
- b) Use licensed hazardous waste haulers for threshold quantities as required by state and federal regulations.
- c) Cover trailers carrying hazardous materials during transit. Illegal transit of hazardous waste is a violation subject to fine and/or jail time.

## Permits Possibly Needed:

- Transport and disposal of contaminated material and hazardous waste must be in accordance with the rules and regulations of the following agencies:
  - U.S. Dept. of Transportation (USDOT)
  - U.S. Environmental Protection Agency (USEPA)
  - California Environmental Protection Agency (CAL-EPA)
    - California Dept. of Toxic Substances Control (DTSC)
  - California Div. of Occupational Safety and Health Administration (CAL-OSHA)
  - Local Regulatory Agencies (e.g., County Dept. of Public Health)
- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan for site and Hazmat Plan protocols.
- Comply with RWQCB General Industrial Storm Water Management Plan and Storm Water Permit for each site (3/03).

# STORAGE OF HAZARDOUS MATERIALS

6-D-3



Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)

# OUTDOOR STORAGE OF RAW MATERIALS

6-D-4

**Description:** Maintenance facilities and activities based out of Maintenance facilities store a variety of products (e.g., asphalt, sand, soils, treated wood posts, and mulch) that may be harmful to the environment if they come in contact with storm water runoff. The BMP is intended to reduce the potential for the discharge of products from outdoor raw material storage sites to the storm water drainage system or watercourse by minimizing exposure of the products to storm water.

## **Environmental Concerns:**

- Discharge of the following materials into the storm water drainage system or watercourses: soils, aggregates, asphalt and concrete products, mulches, road abrasives, salt, wood products

## **Best Management Practices:**

1. Store materials away from areas that might drain into the storm water drainage system or other watercourse. Route stormwater run-on away from material storage areas through grading or sloping of the site, where feasible.
2. Cover the storage areas with a canopy or roof that is designed to direct run-on away from the storage area, where feasible.
3. Cover (tarp) dry materials that are not under a roof or canopy to prevent water intrusion during the winter season, where practical.
4. Protect storm drain inlets with sand bags, geotextile dams, filtration socks, berms, hay bales, etc. (See: 3-A-2 Erosion Repair & Control; Appendix B-8 & B-9)
5. Promote good housekeeping procedures, including sweeping of surfaces where material is blown or washed from the storage area, keeping materials covered, and keeping storage containers in good condition. (See: 6-A Facility Housekeeping Practices)
6. Inspect storage areas regularly.

## **Permits Possibly Needed:**

- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan for the site
- Comply with RWQCB General Industrial Storm Water Management Plan and Storm Water Permit for each site (3/03)

# OUTDOOR STORAGE OF RAW MATERIALS

6-D-4



Note water repellent coverings on storage piles

*Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)*

# OUTDOOR LOADING/ UNLOADING OF MATERIALS

6-D-5

**Description:** This BMP describes procedures and practices for the loading and unloading of materials in a manner which minimizes the discharge of the materials to the storm water drainage system or watercourses.

## **Environmental Concerns:**

- Discharge of the following materials into the storm water drainage system or watercourses: pesticides, fertilizers, cleaning products, petroleum products, asphalt, concrete, paint products, hazardous materials (acids, lime, glues, adhesives, solvents, and curing compounds)

## **Best Management Practices:**

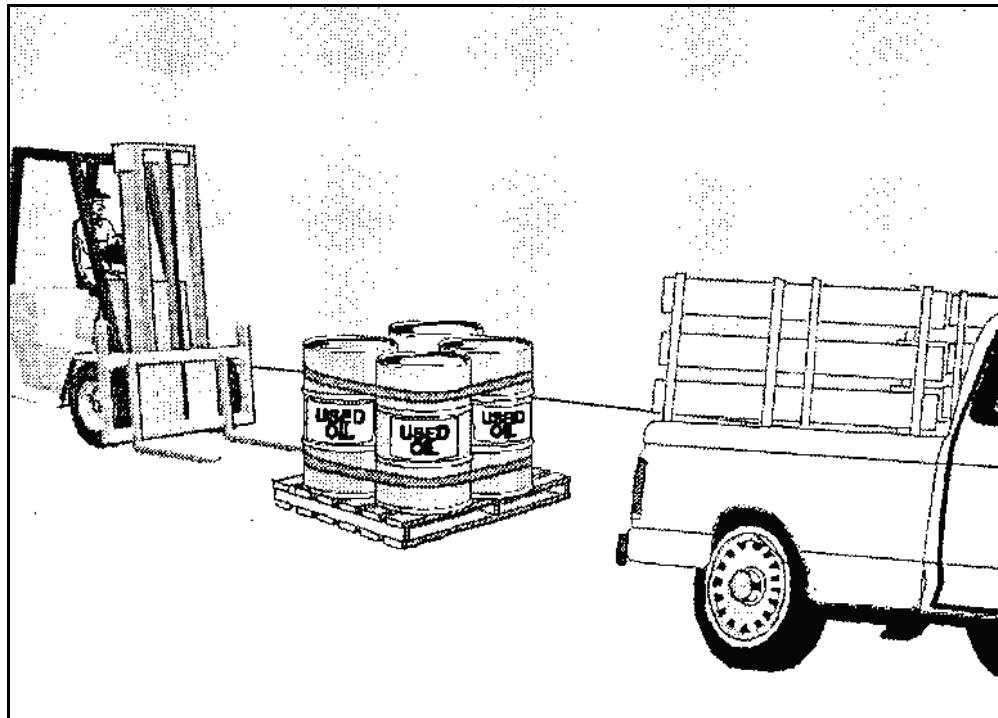
1. Conduct outdoor loading and unloading on paved surfaces, where feasible.
2. Store an ample supply of spill clean-up materials in readily accessible locations in the vicinity of the loading/unloading area.
3. Limit exposure of the materials to precipitation. (See: 6-D-4)
4. Regularly check loading and unloading equipment for leaks before and after use.
5. Contain any leaks that occur during the transfer of materials.
6. If practical, place drip pans under hoses when making connections and during liquid material transfer. Promptly remove drip pan after use.
7. Inspect loading/unloading areas before and after precipitation events, and as needed during other times to promote good housekeeping.
8. Repair and replace perimeter controls, containment structures, and covers as needed to keep them properly functioning.

## **Permits Possibly Needed:**

- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan
- Comply with RWQCB General Industrial Storm Water Management Plan and Storm Water Permit for each site (3/03)

# OUTDOOR LOADING/ UNLOADING OF MATERIALS

6-D-5



Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)

# ABOVE GROUND TANK LEAK & SPILL CONTROL

6-D-6

**Description:** Maintenance facilities may use above ground storage tanks for storage of bulk quantities of liquids. Often the liquids stored are potentially harmful to the environment. This BMP is intended to reduce the discharge of potential pollutants to the storm water drainage system or watercourses from above ground storage tanks by installing safeguards against accidental releases. Most tanks are now double walled for added protection.

## **Environmental Concerns:**

- Discharge of the following materials into the storm water discharge system or watercourses: fuel, oil, paint, herbicides, asphaltic emulsion

## **Best Management Practices:**

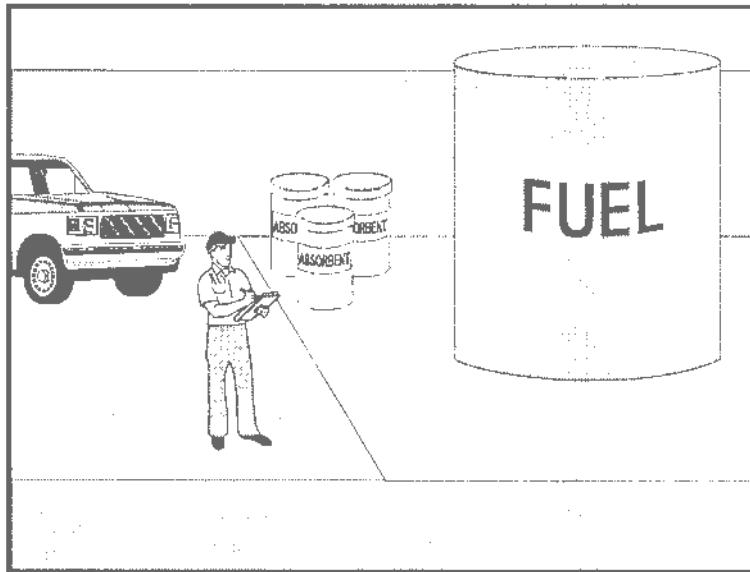
1. Control any spills immediately. For example, soak up wet spills using an absorbent material or dry mop. Place absorbent material collected in a waste container and dispose of the contents according to approved waste disposal procedures.
2. If a large spill or rupture should occur, call 911 and contact the Road Supervisor and the local Hazmat Manager. It may be necessary to use a private clean-up company or a Hazmat team for clean-up. [See also: 8-C Accident Clean-Up]
3. Block all storm drain inlets during a spill, and unblock after clean-up is completed.
4. Keep an appropriate spill kit near above ground tanks. Such a kit includes an ample supply of clean-up materials (absorbent materials, shovel, rags, and plastic bags). Update and replenish the spill kit as changes occur in the types of materials stored.
5. Inspect existing above ground storage tanks, secondary containment, and associated valves and piping for external corrosion, structural failure, and loose connections.
6. When required, review appropriate Spills Prevention Countermeasures and Control (SPCC) plan for the Maintenance facility.
7. Inspect or test rainwater in secondary containment prior to releasing.
8. After releasing rainwater from secondary containment, ensure that drain valve is closed.

## **Permits Possibly Needed:**

- Comply with County Spill Prevention Control and Countermeasure (SPCC) Plan for site and Hazmat Plan protocols
- Comply with RWQCB General Industrial Storm Water Management Plan and Storm Water Permit for each site (3/03)

# ABOVE GROUND TANK LEAK & SPILL CONTROL

6-D-6



Source: Caltrans Storm Water Quality Handbook – Maintenance Staff Guide (1998)

# SAFER ALTERNATIVE PRODUCTS

6-D-7

**Description:** A variety of products that may be harmful to the environment if they come in contact with surface waters are used in maintenance facilities and activities. In some cases, a harmful product may be replaced with one less harmful which serves the same purpose. The less harmful product is referred to as a safer alternative product. The primary purpose of using safer alternative products is to reduce the potential for discharging toxic products to storm water drainage systems or watercourses. However, some alternative products may not be available, effective, or cost-effective in every situation.

## Environmental Concerns:

- Discharge of the following materials into the storm water drainage system or watercourses: automotive products, cleaning products, paint products, pesticides, fertilizers, building products

## Best Management Practices:

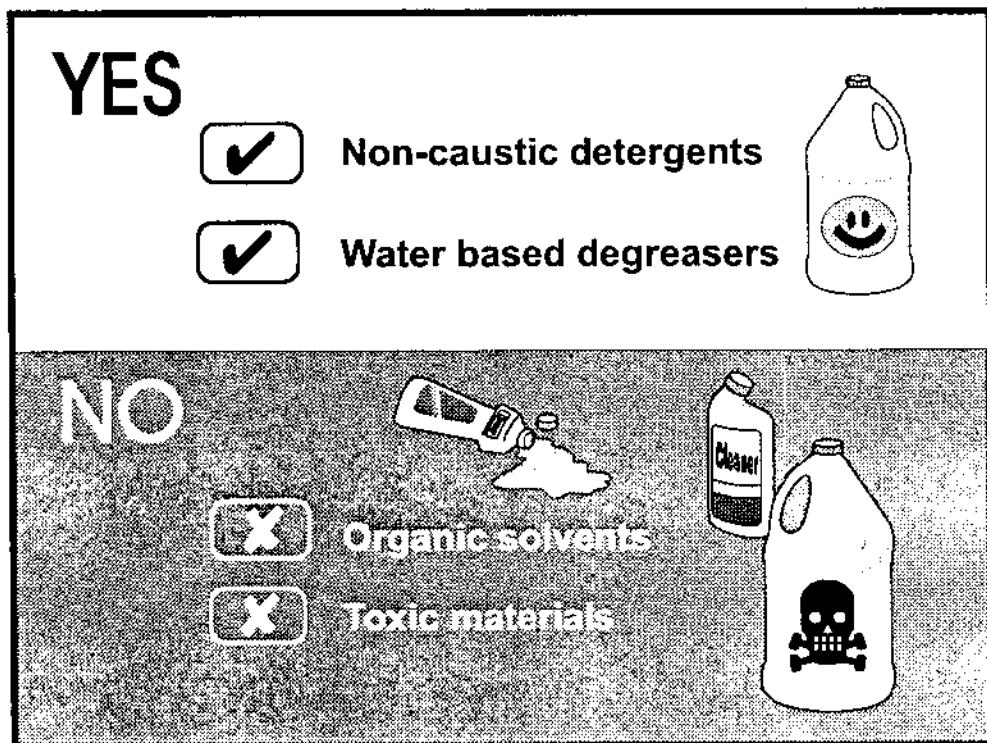
1. When safer alternative products exist for cleaning products, paints, pesticides, automotive products, and fertilizers, *use* where practical and effective.
2. Supervisors responsible for ordering products should select products based on the guidelines below:
  - a) Automotive products - In some cases, less toxic alternatives are not available for all automotive products (e.g., lubricants, coolants, hydraulic fluids), but there are less toxic alternatives to car polishes, degreasers, and windshield washer solutions.
  - b) Cleaning products - Vegetable-based or citrus-based soaps and asphalt release agents are available to replace petroleum-based soaps/detergents.
  - c) Paint products – Water-based paints, wood preservatives, stains, and finishes are available.
  - d) Pesticides/Herbicides – Specific alternative products or methods exist to control most insects, fungi, and weeds. Use “general use” (non-restricted use) herbicides.
  - e) Fertilizers – Compost and soil amendments are natural alternatives to chemical fertilizers.
  - f) Building products – Pressure-treated wood posts are alternatives to wood posts treated with creosote.
3. Use training to create awareness among employees regarding the use of safer alternatives.
4. Even safer alternative products can result in the discharge of harmful materials to storm water drainage systems or watercourses. Use safer alternative products in strict accordance

# SAFER ALTERNATIVE PRODUCTS

6-D-7

with manufacturers' recommendations. (See: 6-A Facility Housekeeping Practices; 6-D-1 Waste Minimization, Handling, and Disposal)

**Permits Possibly Needed:** None



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