Appendix A-14
Spill Response Plan Materials

What is a Pesticide spill

A pesticide spill refers to any unplanned spill or leakage into the environment that occurs during storage, use, transport, or disposal of a pesticide. For example, a spill can be caused by a single container falling off a truck, or a 55 gallon barrel punctured by a forklift. A serious spill could even involve fire and the explosion of leaking containers. The spill risk increases with the size of the operation and the number of persons involved in pesticide handling The most hazardous activities involving pesticides are mixing and loading of concentrates.

The environment can be easily harmed by careless mixing and filling procedures. Areas where pesticides are mixed and equipment is filled have significant potential to contaminate groundwater and surface water if proper precautions are not taken. Carefully choose the pesticide mixing and loading area. It should be outside, away from other people, livestock, and pets. Pesticides should not be mixed in areas where a spill or overflow could get into a water supply. If possible, mix and load pesticides on a concrete pad so that spilled pesticides can be removed without entering the soil. Handling areas frequently must be near a pond or stream bank, as water is needed to fill the sprayer. If this is the case, the area should be graded to slope away from the water. If you must work indoors, or at night, be sure there is adequate ventilation and light to minimize the chance of an accident. Have a supply of clean water and soap available and, if possible, do not work alone.

If you are transporting pesticides, have an emergency plan in place for accidents. Since accidents are often caused by others, you must be ready with a spill action plan.

Education can effectively reduce the risk of a pesticide spill and the harm that it may cause. Below is a short list of items for pesticide spill prevention planning:

1. **Accident management**: first aid to injured people, keeping others from exposure and using appropriate personal protective equipment (PPE)
2. **Spill prevention,** control and clean up procedures
3. **Know the three "C's"**
    1. Control the spill (minimize the quantity released)
    2. Contain the spill (into as small an areas as possible)
    3. Clean up the spill right away
4. **Spill prevention habits**
    1. Methods of handling and storing pesticides
    2. Shop safety and fire procedures
    3. Properly securing pesticides in vehicles and storage areas
    4. Inspection procedures for storage areas

Spill response requires regular education and updating of personnel in prevention, control, and cleanup procedures. Employees are trained using regular drills and rehearsals of spill handling procedures to prepare pesticide handlers to respond appropriately to an accident.

Spill Cleanup.

Proper cleanup of the spillage is essential to remove all health and environmental hazards created by the spill. Use the buddy system when cleaning, and do not work alone. Everyone **must** be wearing the proper PPE. Assure that there is good ventilation when cleaning and decontaminating the site.

1) Dry spills. (granular, dust, wettable, dispersible and soluble powder formulations)
   a) Cover the spill with plastic or a tarp to prevent a breeze from moving the material.
   b) Put weights on the cover.
   c) Use a broom, dust pan or shovel to sweep up the spill while rolling back the tarp to expose only a small area at a time.
   d) Place spillage in metal or plastic containers. Plastic bags may be used, but only as a last resort.
   e) Secure and label the containers for later disposal. If at all possible, assess the volume of spilled material, review the label and application rates, and then apply as a legal application. Use of the product, though not necessarily for pest control, is legal and allows the material to breakdown under normal application conditions; thus, negating the possible need to handle the material as an expensive hazardous waste. If application is not possible, dispose of as a hazardous or non-hazardous waste. Pesticide Disposal

2) Liquid spills.
   a) Soak up the liquid with an appropriate absorbent. (sweeping compound, sawdust).
   b) Use a broom to work the absorbent into the spill.
   c) Gather the combined material and deposit it in

a labeled plastic or metal container.

d) Contaminated soil may need to be removed. Soil should be packaged in labeled containers for later disposal. If at all possible, assess the volume of spilled material, review label and application rates, and then apply as a legal application. Use of the product, though not necessarily for pest control, is legal and allows the material to breakdown under normal application conditions; thus, negating the need to handle the material as an expensive hazardous waste. If application is not possible, dispose of the material as a hazardous or non-hazardous waste depending on the product. Pesticide Disposal

Decontaminate the Area.

After the bulk of the spill has been removed, apply the appropriate decontamination material. The material chosen depends on the pesticide spilled.

1) Apply the appropriate solution and allow 1 to 6 hours for the chemicals to work.
2) Use an absorbent to collect the residues.
3) Dry decontaminants are sprinkled in a thin layer over the spill area. The powder needs to be activated with water. A watering can is used to wet the powder lightly.
4) Liquid decontaminants may be applied lightly to the spill area with a watering can.
5) The decontamination procedure is repeated until all the spilled pesticide is removed.

6) Tools are cleaned with soap and water or an appropriate decontaminant.
7) Collect all used decontaminants and rinse water for disposal.

Pesticide Decontaminants

Depending on the particular pesticide, chlorine bleach, caustic soda (lye, sodium hydroxide) or lime can be used to decontaminate most spills. Many pesticides, especially the organophosphate pesticides, decompose when treated with lye or lime. Fewer pesticides are decomposed by bleach (sodium hypochlorite). Other pesticides cannot be effectively decontaminated, and should only be treated with detergent and water to help in removal. Check the pesticide label and Material Safety Data Sheet (MSDS) for information on cleaning up spills. Only use a little liquid. Sprinkle absorbent material on the clean-up solution, and then put the absorbent material into the disposal container with the other contaminated materials.

A practical guide for applying decontaminants is as follows:

Percent AI% ingredient	*Amount of decontaminant needed*
I-10%	Use an amount of decontaminant equal to the quantity of pesticide spilled.
11-79%	Use an amount of decontaminant equal to 1.5 times the quantity of pesticide spilled,
80-100%	The amount of decontaminant used should be equal to twice the quantity of spilled pesticide

WARNING: There is a slight potential for creating toxic by-products when using these procedures. In critical situations, samples of affected components (soil, sediment, water, etc.) should be taken and sent to a laboratory for analysis in order to determine if decontamination was successful.

Lye (caustic soda) or Lime

Pesticides amenable to treatment using lye or lime may be decontaminated when mixed with an excess quantity of either of these materials. These materials can be used in either the dry form or in solution. A 10% solution of lye or lime can be made as follows:

Mixing directions: Mix 0.75 pounds of lye or lime in 3.5 quarts of water to make 1 gallon of 10% solution.

Caution: Lye can cause severe eye damage to persons not properly protected. Protect against contact by wearing unventilated goggles, long-sleeved work clothes with coveralls, neoprene gloves, and chemical-resistant apron. An approved respirator also should be worn. Do not use lye on aluminum surfaces.

Bleach Treatment.

Certain pesticides can be degraded by treatment with bleach (sodium hypochlorite). Generally, one gallon of household bleach, which contains approximately 5 percent sodium hypochlorite, should be used per pound or gallon of pesticide spilled. If bleaching powder is used, first mix it with water (one gallon of water per pound of bleach), and add a small amount of liquid detergent. For safety purposes, a preliminary test must be run using small amounts of bleach and the spilled pesticide. The reaction resulting from this test must be observed to make sure the reaction is not too vigorous. Do not mix chlorine bleach with amine-containing pesticides or store near them. Co-mingling of these materials can cause a violent reaction resulting in fire. Calcium hypochlorite is not recommended as a decontaminating agent because of the fire hazard.

Spill Kit Contents

Spill kits should be labeled and designated for use in handling pesticide spills only, and should be strategically placed where spills are most likely to occur. The label should list the contents, and the kit should be sealed to discourage item loss.

Shop kit	Vehicle kit
1 instruction sheet 1 55-gallon open-head drum 4 pairs nitrile gloves 2 pair goggles 2 respirators and pesticide cartridges 2 aprons (chemical resistant) 2 pairs rubber boots 2 pairs of cotton coveralls 1 dustpan 1 shop brush 1 square-point 'D' handle shovel 1 dozen polyethylene bags w/ties 1 push broom with synthetic fibers 1 gallon liquid detergent 3 gallons household bleach 80 lbs absorbent material 1 bung wrench 1 drum spigot 1 l-3/8' open-end wrench 1 drum pump (manual) 30 ft ½" polyethylene tubing or 1 25-ft garden hose blank labels	1 instruction sheet 1 5-gallon pail 2 pairs of nitrile gloves 1 pair goggles 1 respirator and cartridges 1 pair coveralls 1 dustpan 1 shop brush 10-30 lbs absorbent material 1 pint liquid detergent 6 polyethylene bags w/ties 1 portable eyewash blank labels 1 first aid kit 1 pair rubber boots 1 apron

SOURCE: http://pesticidestewardship.org/spill/Pages/SpillDecontamination.asp

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