



## CHAPTER 9

# Emergency Response

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### National Pesticide Applicator Certification Core Manual



## CHAPTER 9

# Emergency Response

This module will help you:

- ❖ Know how to implement and execute an emergency response plan
- ❖ Identify how unintended spills and fires can harm humans and the environment
- ❖ Understand how to clean up spills to reduce environmental impact
- ❖ Know how to dispose of contaminated items
- ❖ Be familiar with emergency response equipment

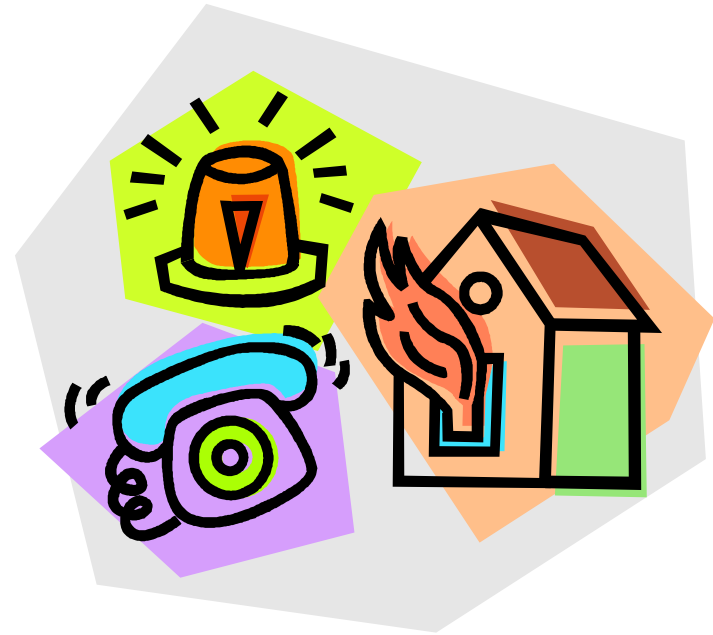
# Emergency Response

- ❖ Be prepared
- ❖ You have responsibilities to protect employees, your community and the environment



# What is a typical emergency?

- ❖ Overturned vehicle
- ❖ Ruptured hose
- ❖ Explosion or fire in storage area





# Why plan for an emergency response?

- ❖ Protects employees, community, environment
- ❖ How you respond, makes all the difference!

# Develop a Plan

- ❖ Designate an emergency coordinator
- ❖ Maintain a list of emergency response agencies

- Person, agencies to be notified
- Local emergency planning committee
- Police and fire units
- Paramedics and hospitals
- Chemical manufacturers
- Containment and hazardous waste cleanup
- Attorney

 <b>PESTICIDE EMERGENCY INFORMATION</b> 				
<small>For any type of an emergency involving a pesticide, immediately contact the following emergency information centers for assistance. Current as of March 2001</small>				
<b>Human Pesticide Poisoning</b>				
<b>POISON CONTROL</b> <small>From anywhere in the United States, call</small> <b>1 - 8 0 0 - 2 2 2 - 1 2 2 2</b>				
<b>Special Pesticide Emergencies</b>				
<b>Animal Poisoning</b> <small>Your veterinarian</small>	<b>Pesticide Fire</b> <small>Local fire department</small>	<b>Traffic Accident</b> <small>Local police department or sheriff's department</small>	<b>Environmental Pollution</b> <small>District Michigan Department of Environmental Quality (MDEQ) Office Phone No.</small>	<b>Pesticide Disposal Information</b> <small>Michigan Clean Sweep, Michigan Department of Agriculture Environmental Stewardship Division. Monday - Friday: 8 a.m. - 5 p.m. (517) 335-6529</small>
<small>Phone No.</small> <b>or</b> <small>Animal Health Diagnostic Laboratory (Toxicology) Michigan State University:</small> <b>(517) 355-0281</b>	<small>Phone No. and</small> <b>Fire Marshal Division, Michigan State Police</b> <b>M - F: 8-12, 1-5</b> <b>(517) 322-1924</b> <small>* Telephone Number Operated 24 Hours</small>	<small>Phone No. and</small> <b>Operations Division, Michigan State Police:</b> <b>*(517) 336-6605</b>	<small>Phone No. and</small> <b>MDEQ Pollution Emergency Alerting System (PEAS):</b> <b>*1-800-292-4706</b> <small>also</small> <b>*1-800-405-0101</b> <small>Michigan Department of Agriculture Spill Response</small>	<b>National Pesticide Telecommunications Network</b> <small>Provides a device on recognizing and managing pesticide poisoning, toxicology, general pesticide information and emergency response assistance. Funded by EPA, based at Oregon State University. 7 days a week; excluding holidays 8:30 a.m. - 4:30 p.m. Pacific Time Zone <b>1-800-858-7378</b> <b>FAX: 1-541-737-0761</b></small>

Revised by Carolyn J. Randall, Pesticide Education Program, Michigan State University Extension

**Information  
to be  
included in  
an  
emergency  
notification  
call**

**Keep them with the  
phone number list**

**Name of reporting person:**

**Date and location of incident:**

**Description of incident:**

**Name of chemical:** \_\_\_\_\_

**Quantity of chemical:** \_\_\_\_\_

**Classification:** \_\_\_\_\_

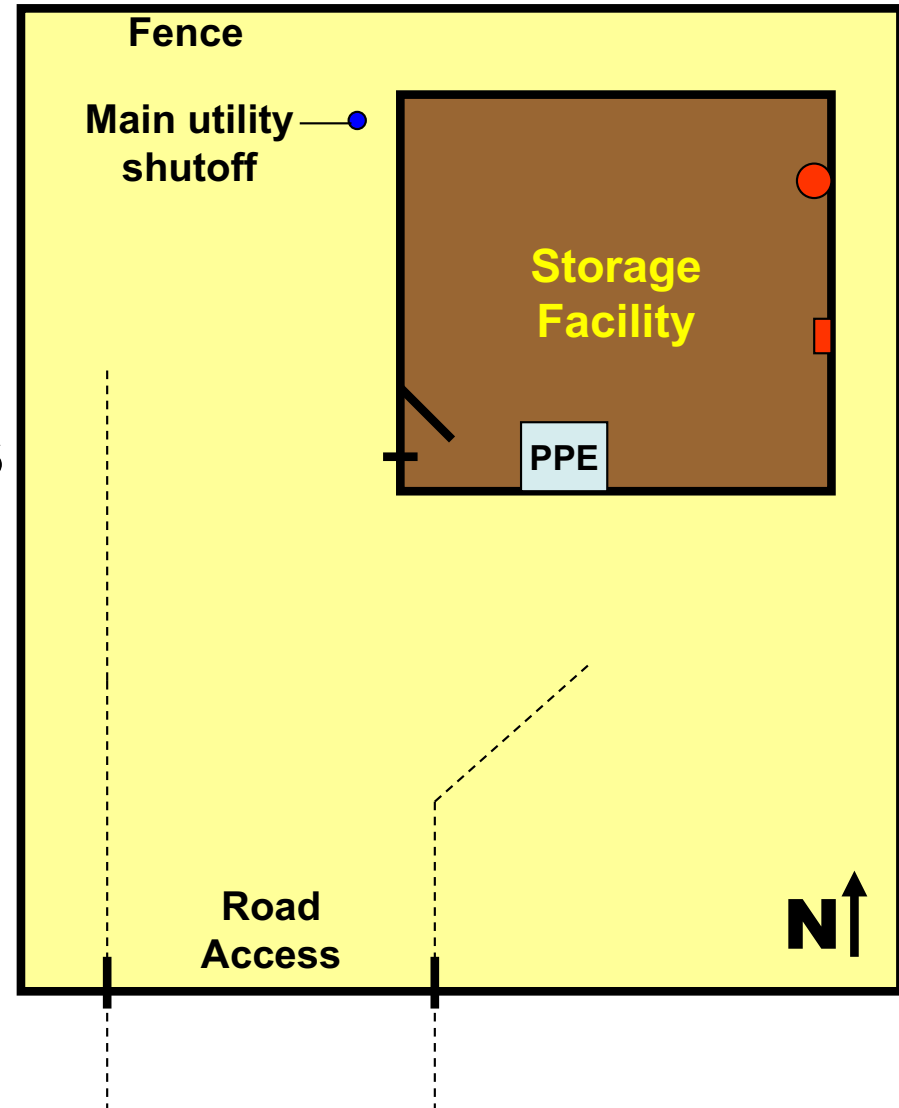
**Extent of injuries:** \_\_\_\_\_

**Potential effects on environment  
and community:** \_\_\_\_\_



# Map Your Facility!

- ❖ Map should include:
  - ❖ layout of storage areas or buildings, and bulk storage tanks
  - ❖ access roads, fences
  - ❖ main shutoffs for utilities
  - ❖ location of fire alarms, extinguishers, and protective clothing
- ❖ Send updated copies to emergency response agencies whenever changes are made!



# Provide an Area Map Too!



Fire, police, paramedics can't waste time trying to find your facility!

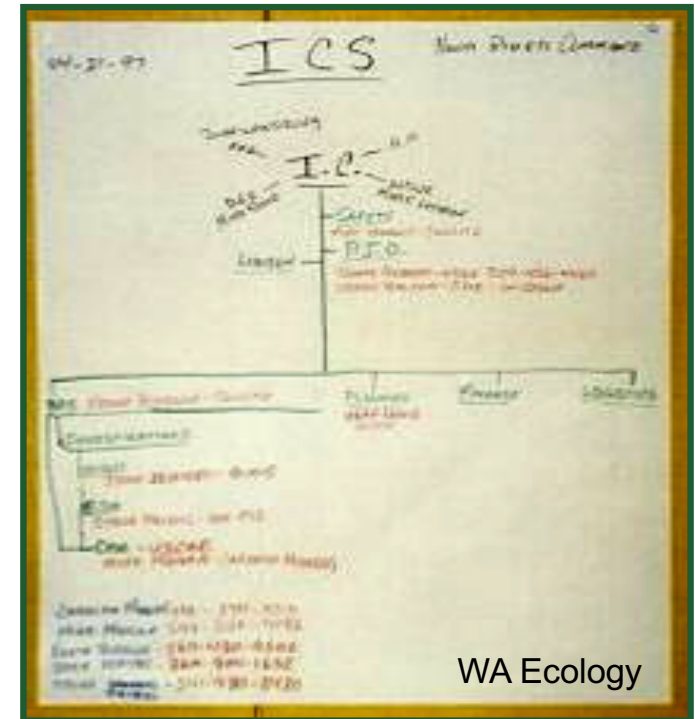


# Keep an Inventory!

- ❖ Product names, volumes, and locations
- ❖ Keep copies of labels, MSDS, protective equipment
- ❖ Keep a set of documents away from storage area
- ❖ Emergency equipment:
  - ❖ tools for diking, trenching, pumping, vacuuming
  - ❖ containment and cleanup materials
  - ❖ fire extinguishers, personal protective equipment

# Outline your Actions

- ❖ Plan step-by-step procedures according to each possible emergency: fire, spill or leak, transport accident, etc.
- ❖ Designate responsible personnel beforehand
- ❖ Write down everything that happens!
- ❖ Share the outline with local responders



# Pesticide Fires

## *How to Avoid a Pesticide Fire*

- ❖ Assess the flammability and storage hazards of pesticide products
- ❖ Look on the label for “Do not use or store near heat or open flame”
- ❖ Fires usually involve oils or petroleum solvents



# Pesticide Fires

## *Potential Problems*

- ❖ Pesticides may give off highly toxic vapors or smoke that may harm firefighters, nearby residents, animals, or plants
- ❖ Residues may be present in debris and soil
- ❖ Runoff from the fire site may be highly toxic



# Take Precautions to Reduce Fire Hazards!

- ❖ Put storage facility far from people, animals
- ❖ Always keep storage locked!
- ❖ Clearly post warning signs



# Take Precautions to Reduce Fire Hazards!

- ❖ Store combustibles away from heat sources
- ❖ Do not store containers in sunlight, especially glass!
- ❖ Install fire alarms
- ❖ Keep foam-type fire extinguishers approved for chemical fires available



# Take Precautions to Reduce Fire Hazards!

- ❖ Notify the fire department of the location and contents of the storage facility
- ❖ Develop an emergency plan and train workers to execute it
- ❖ Keep an inventory of all pesticides in storage





# If there is a chemical fire:

1. **Evacuate** the area!
2. **Call 911**, and tell what chemicals are involved
3. Keep people away; establish a perimeter and protect downwind
4. **Have MSDS notebook ready!**



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## **Grandview fire didn't contaminate surrounding area**

*This story was published Thursday, March 31st, 2005*

By Jeff St. John, Herald staff writer

The fire that destroyed the Wilbur-Ellis Co. farm chemical warehouse in Grandview in late January did not contaminate the surrounding area with pesticides or other dangerous chemicals.

That finding is based on air samples taken by the state during the first two days of the fire and on surface, ground and water tests taken afterward.

# If the fire is small...

- ❖ **Contain** with fog, foam, or dry powder
- ❖ If only water is available:
  - ❖ use as fine spray or fog, don't over-wet
  - ❖ **Caution:** water jets can break bags, glass
    - ❖ **may spread contamination**
  - ❖ **Contain** the water and spilled chemicals

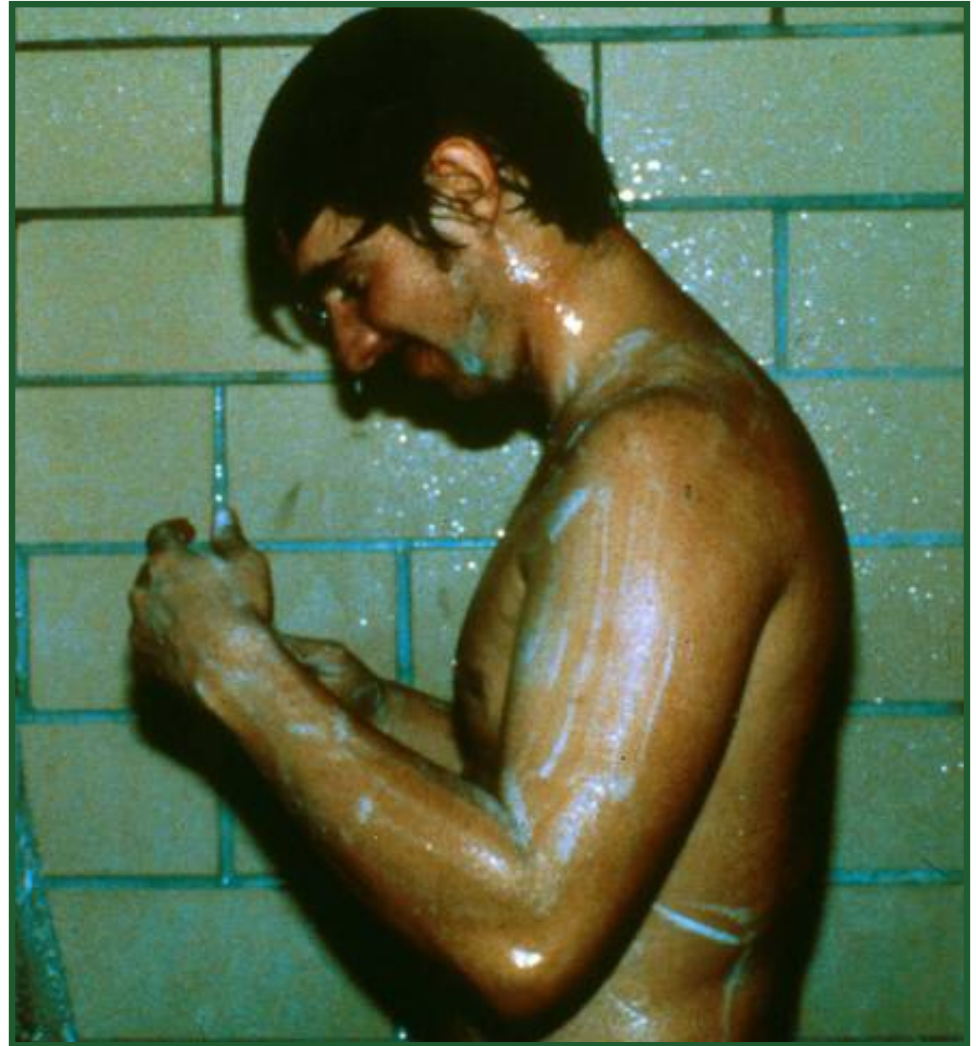
# If the fire is large...

- ❖ Consider withdrawing and **letting it burn** -- using water may lead to widespread contamination
- ❖ Build dikes to contain water if necessary



# After the fire...

- ❖ Clean or dispose of all clothing
- ❖ Everyone involved should shower
- ❖ Do not clean up or salvage until area has cooled



# Pesticide Spills

- ❖ Protect yourself and others first (PPE), and administer first aid
  - ❖ Different spill = different hazards
- ❖ Then respond to the spill, which may be very small to very large



## The 3 C's

Control - Contain - Clean up



# Control the Spill

- ❖ Always wear PPE!
- ❖ FIRST stop the leak or spill - CONTROL
  - ❖ Upright equipment so it no longer spills
  - ❖ Put smaller containers into larger containers
  - ❖ Try to plug larger leaks -- get help!



# Control the Spill

- ❖ Have a cell phone handy!
- ❖ Alert police if spill is on a highway
- ❖ Alert other state agencies if pesticides are involved
- ❖ Have the label and MSDS available for responders





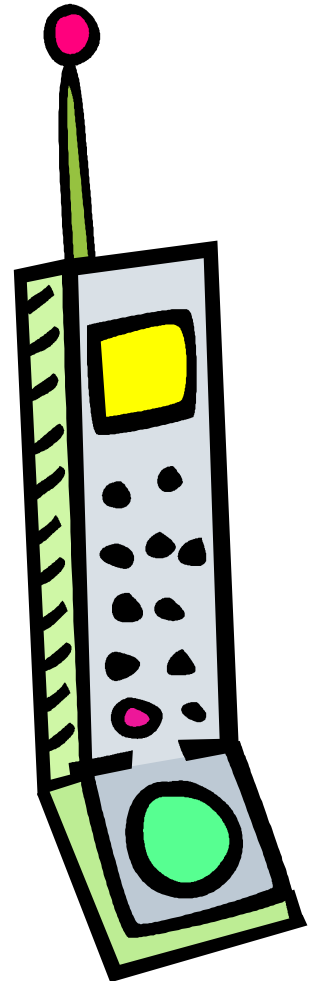
# For Large Spills...

- ❖ Send someone to get help
- ❖ DON'T leave the site unattended!



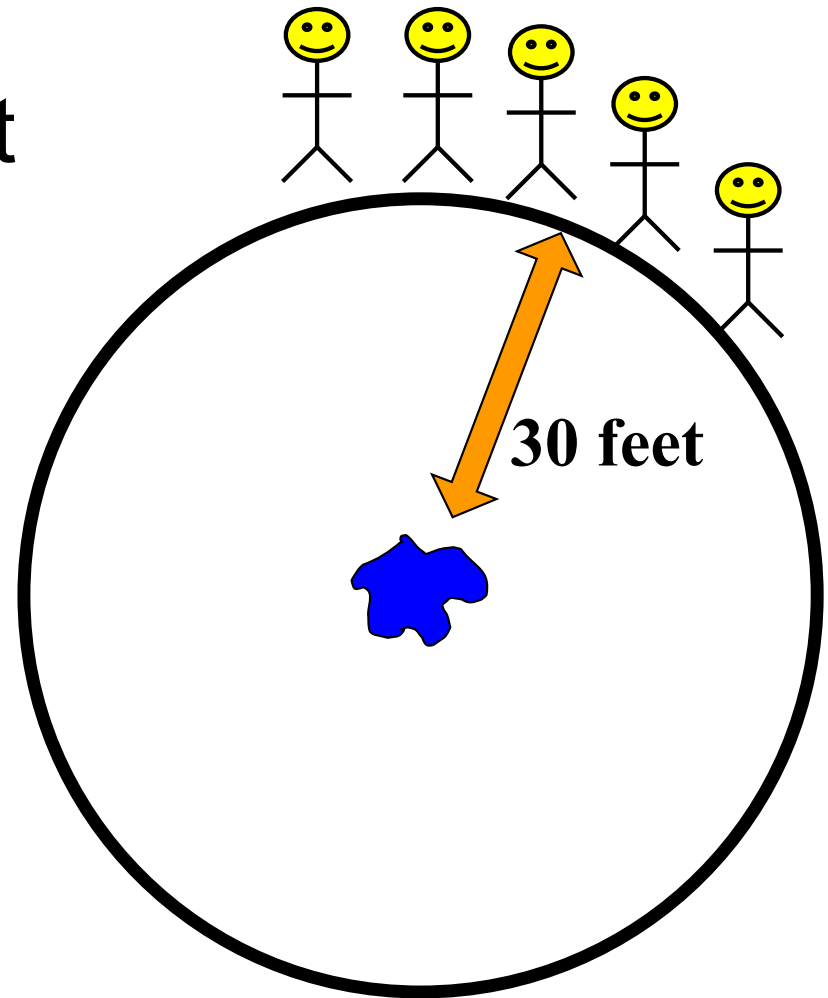
# For Major Spills, CALL...

- ❖ State/local emergency management office
- ❖ **CHEMTREC** for emergency response info and technical assistance **1-800-424-9300** (emergency only)
- ❖ Emergency number on the label



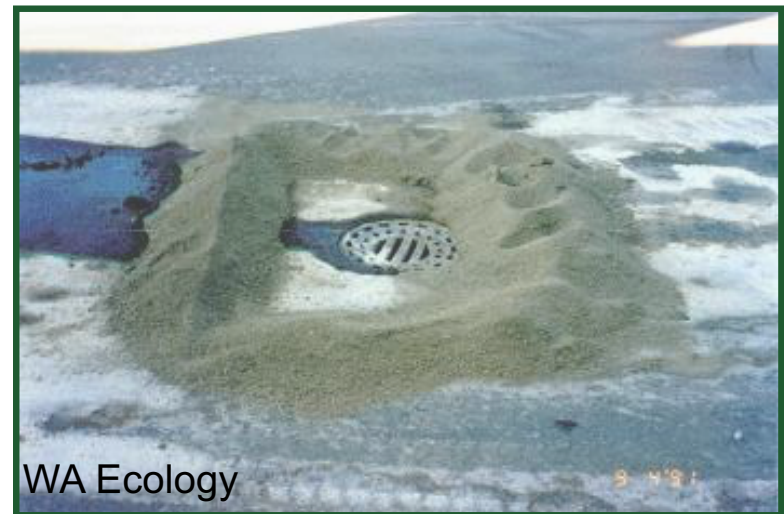
# Control the Spill

- ❖ Rope off the area and keep people out!
- ❖ Create perimeter  $> 30$  feet away
- ❖ Avoid contact with drift, fumes
- ❖ Do not use flares if spilled material is flammable!
- ❖ Evacuate people from downwind areas



# Contain the Spill

- ❖ Do everything possible to prevent its spread
- ❖ Build a dike or dam
- ❖ The spill **MUST NOT** get into any body of water (including sewers and drains)!!!



# Contain the Spill

- ❖ If a water body is contaminated, contact the appropriate state agencies immediately!
- ❖ Notify local emergency planning coordinator
- ❖ DO NOT DELAY-- downstream users must be notified quickly!



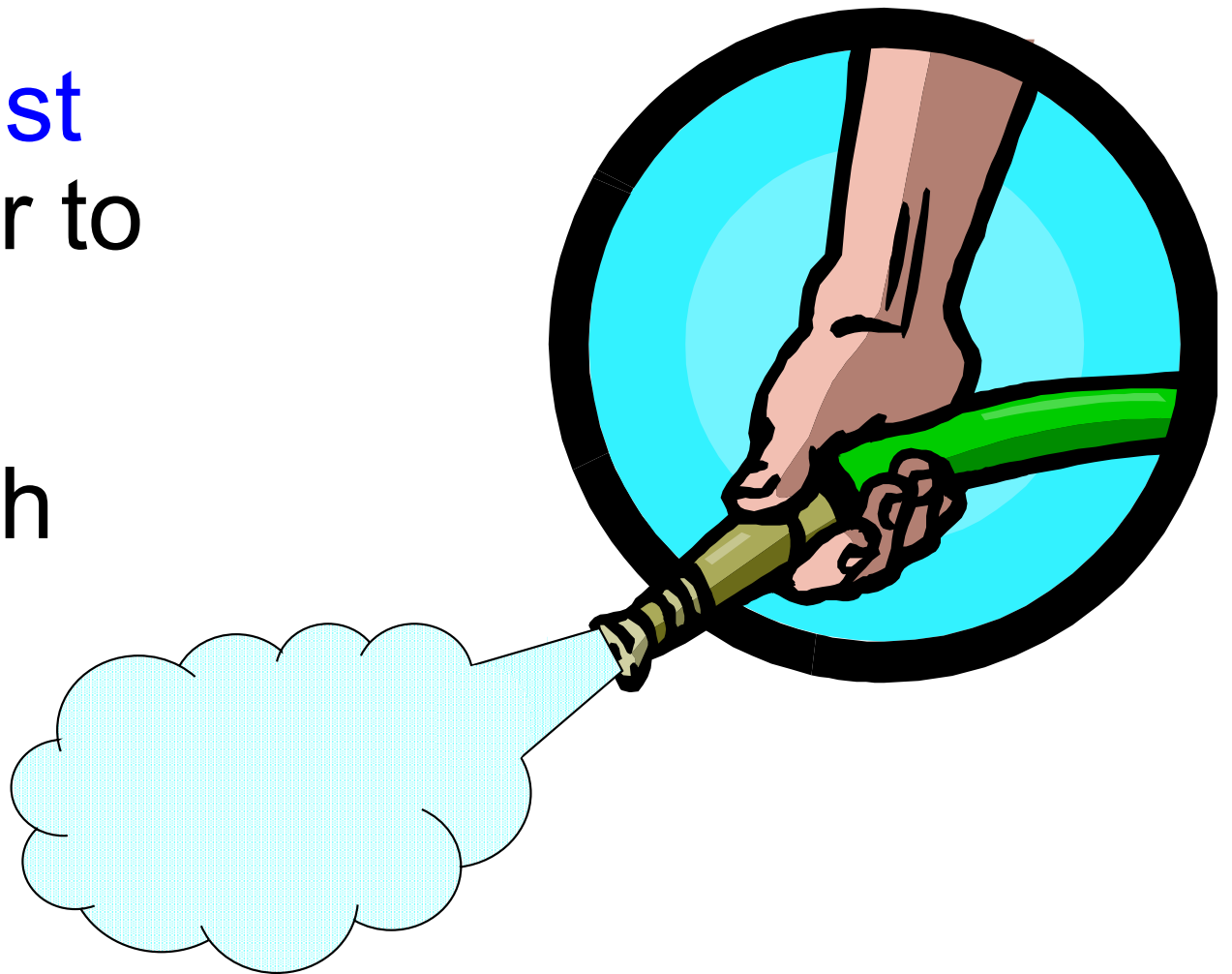
# Contain the Spill

- ❖ Spread absorbent materials over entire spill; absorbent flakes, fine sand, vermiculite, clay, pet litter
- ❖ Avoid using sawdust on strong oxidizers
- ❖ Pillows, tubes, or pads: offer easy method, but must be disposed of properly
- ❖ May be able to apply at labeled or lower rate, no waste generated



# Containing Dust, WP, and Granule Spills

- ❖ Lightly mist with water to contain
- ❖ Cover with plastic to contain





# Clean Up the Spill

- ❖ Add absorbent material, sweep it up, and put into a lined drum
- ❖ Use 30% bleach or hydrated lime to neutralize the area
- ❖ Use a **coarse broom** to work it into the area



# Clean Up the Spill

- ❖ Wear protective equipment!
- ❖ Do not use lime and bleach together!
- ❖ Repeat as necessary!



# If soil is contaminated:

- ❖ Remove top 2-3 inches of soil
- ❖ Dispose of as hazardous waste if you can't dilute it with clean soil and apply to a labeled site
- ❖ Cover with 2 inches of lime, then fresh topsoil
- ❖ Activated charcoal may be effective for minor spills



# Clean Contaminated Equipment

- ❖ Wear protective equipment
- ❖ Use 30% bleach in water or alkaline detergent
- ❖ Do not mix bleach and detergent!



# Clean-up

- ❖ Discard brooms, shoes, cloth hats
- ❖ Don't save disposables and highly-contaminated clothing
- ❖ Wash yourself thoroughly with soap and water



# Write Everything Down!

**It's for your own legal protection**



# Write Everything Down!

**Keep records of activities during the emergency and conversations with regulatory authorities, emergency personnel, and general public**

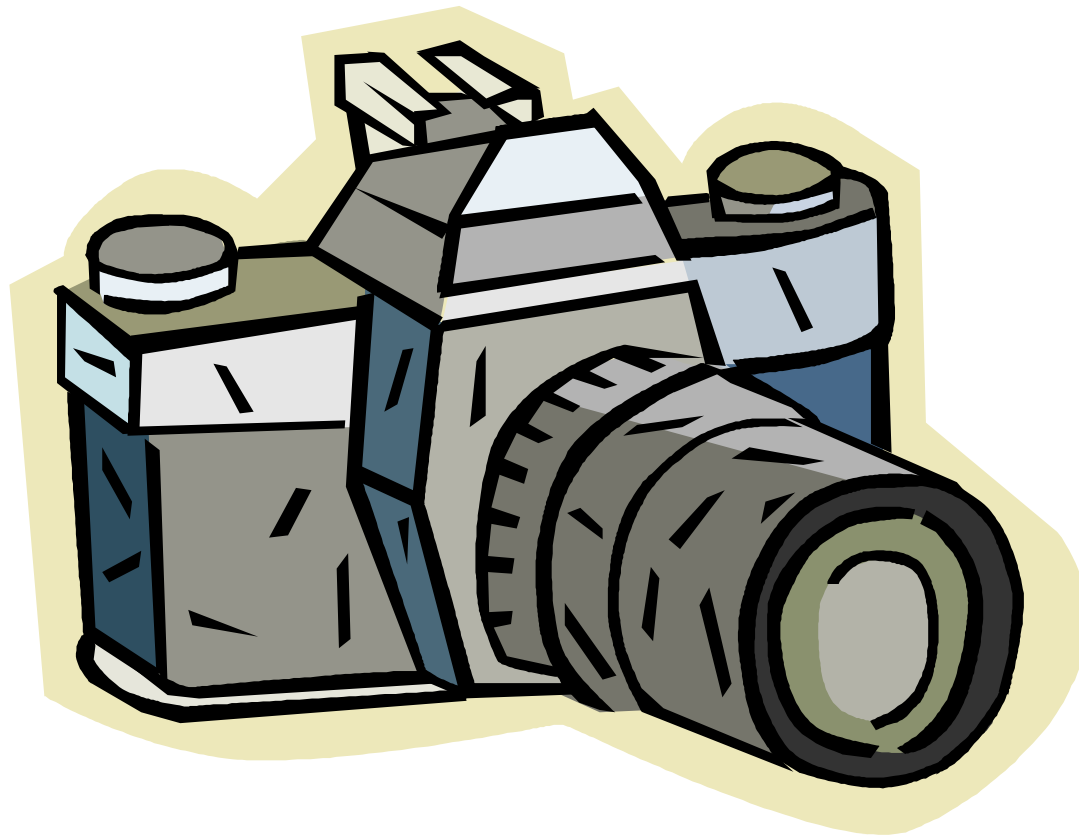
Good documentation is critical





# Take photographs!

Capture any damage, as well as  
the cleanup process



# Prevent Spills First

- ❖ Inspect and maintain vehicles and equipment
- ❖ Understand your spray system thoroughly
- ❖ **Be a safe driver!**



# Keep a Spill Kit Nearby!

whenever you are handling pesticides,  
including in storage areas and  
transport vehicles



# A Spill Kit Should Include:

- ❖ emergency phone numbers
- ❖ personal protective equipment
- ❖ absorbent materials: pillows, containment tubes, clay, sawdust, pet litter, activated charcoal, vermiculite
- ❖ shovel, broom, dustpan, sweeping compound
- ❖ fire extinguisher rated for many chemical fires
- ❖ large, sturdy plastic drum



# SOA DEC Regulations

## discharge notification & containment

**18 AAC 90.040. Discharge notification and containment required.** (a) As required by 18 AAC 75.300(a)(1)(A), if there is a discharge of a pesticide from a vessel, vehicle, container, or area that is used to store, transport, or dispose of a pesticide, the person having responsibility for the vessel, vehicle, container, or area that is used to store, transport, or dispose of a pesticide shall notify the department of the discharge as soon as that person has knowledge of the discharge. The person shall safely contain that discharge.

(b) For purposes of this section, "discharge" means the release of a pesticide in a manner that is not in compliance with this chapter. (Eff. 2/15/98, Register 145; am 9/30/2007, Register 183)



## CHAPTER 9

# Summary

- ❖ Develop an emergency response plan; thoroughly train all employees in its details
- ❖ Some pesticides are highly flammable--respond to fires appropriately
- ❖ Respond to pesticide spills with the **3 C's**:  
**C**ontrol, **C**ontain, and **C**lean up spills
- ❖ Prevention is the best solution
- ❖ Keep spill kits handy!





## CHAPTER 9

Q1. When responding to an emergency, the notification call should include what information?

1. Name and callback number of the person reporting the incident
2. Precise location of the incident
3. The exact name, quantity, and classification
4. The extent of any injuries

A. 1 only

B. 1 and 2 only

C. 1, 2, and 3 only

D. 1, 2, 3, and 4





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## CHAPTER 9

Q2. Concerns from pesticide fires include all of the following except one option. Which option is not a concern with fires?

- A. Highly toxic vapors downwind of fire
- B. Contaminated runoff from the fire site
- C. Back-siphoning into a water supply
- D. Pesticide residues in the debris or soil after a fire



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Q3. Which of the following should be the first action in response to a pesticide spill?

- A. Dispose of contaminated absorbent material
- B. Spread absorbent material over the spill
- C. Decontaminate the area where the spill occurred
- D. Stop the leak or spill



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# Acknowledgements

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## CHAPTER 9

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- ❖ Narration was provided by Carol Ramsay, Washington State University Urban IPM and Pesticide Safety Education



## CHAPTER 9

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