Welcome to the CLU-IN Internet Seminar

CEC Training for OSCs...Pesticide Emergencies (FIFRA ER for EPA OSCs)

Sponsored by: EPA Office of Superfund Remediation and Technology Innovation

Delivered: November 13, 2013, 1:00 PM - 4:00 PM, EST (18:00-21:00 GMT)

Instructors:

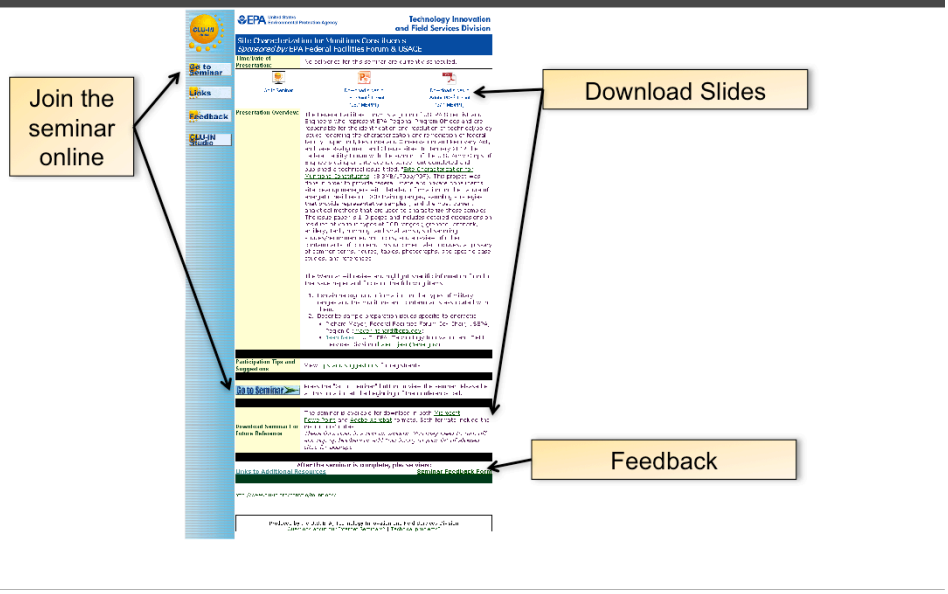
- *Kathy Halbur, EPA Region 5 (halbur.kathy@epa.gov)*
- *Dan Heister, EPA Region 10 (heister.dan@epa.gov)*
- *Jim Mullins, Tetra Tech, Inc. (james.mullins52@gmail.com)*
- *Bob Whittier, EPA Region 10 (whittier.robert@epa.gov)*

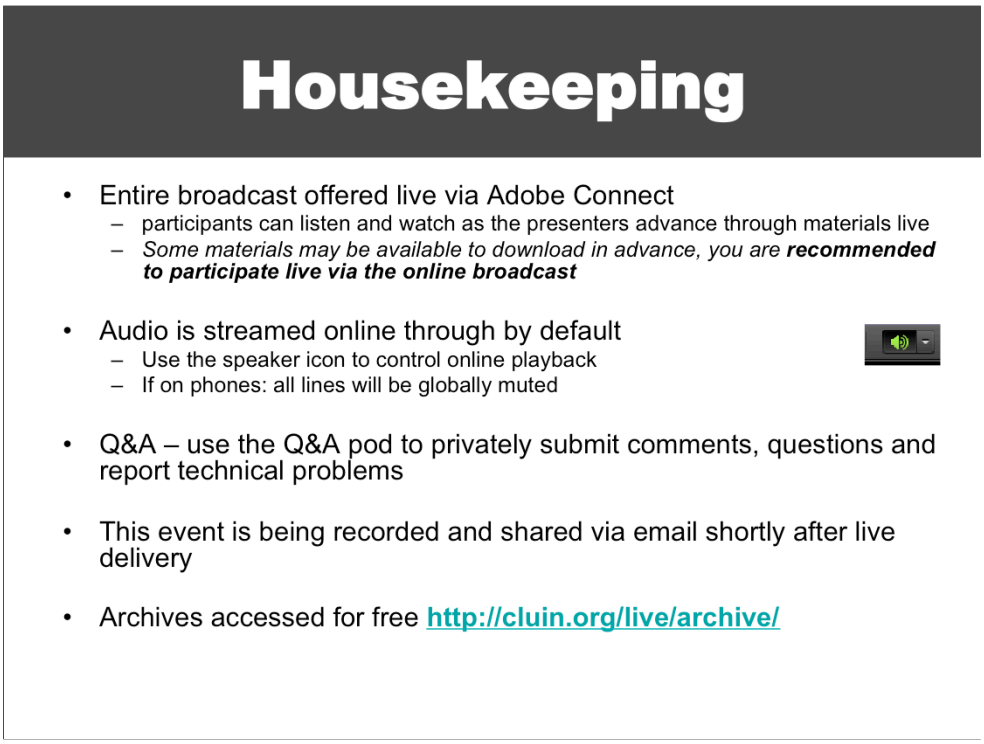
Moderators:

- *Jean Balent, U.S. EPA Technology Innovation and Field Services Division (balent.jean@epa.gov)*

Visit the Clean Up Information Network online at www.cluin.org

Seminar Homepage





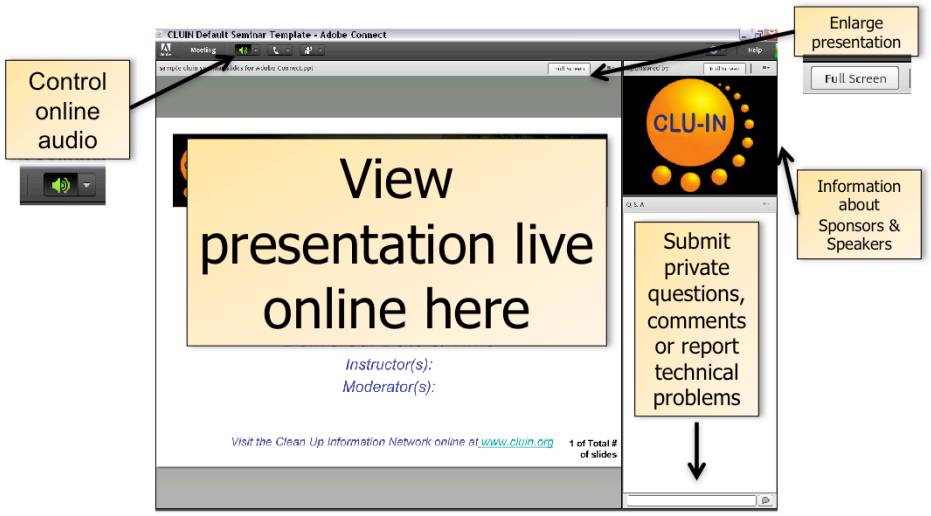
Although I'm sure that some of you have these rules memorized from previous CLU-IN events, let's run through them quickly for our new participants.

Please mute your phone lines during the seminar to minimize disruption and background noise. If you do not have a mute button, press *6 to mute #6 to unmute your lines at anytime. Also, please do NOT put this call on hold as this may bring delightful, but unwanted background music over the lines and interupt the seminar.

You should note that throughout the seminar, we will ask for your feedback. You do not need to wait for Q&A breaks to ask questions or provide comments. To submit comments/questions and report technical problems, please use the ? Icon at the top of your screen. You can move forward/backward in the slides by using the single arrow buttons (left moves back 1 slide, right moves advances 1 slide). The double arrowed buttons will take you to 1st and last slides respectively. You may also advance to any slide using the numbered links that appear on the left side of your screen. The button with a house icon will take you back to main seminar page which displays our agenda, speaker information, links to the slides and additional resources. Lastly, the button with a computer disc can be used to download and save today's presentation materials.

With that, please move to slide 3.

New online broadcast screenshot



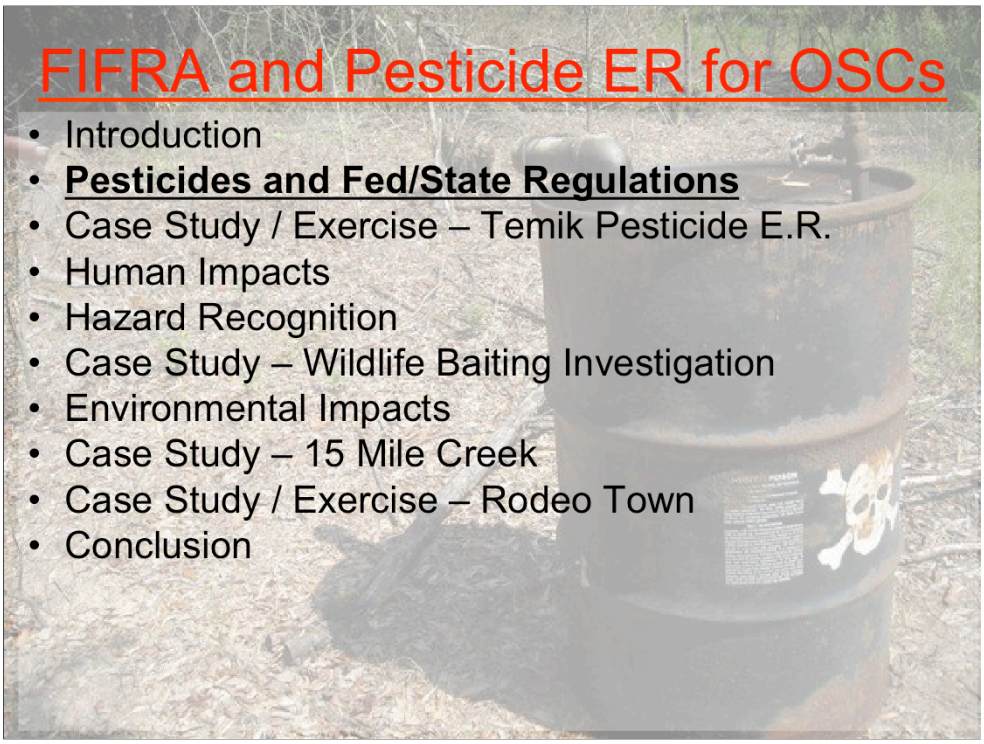
Instructor Bio

- Bob Whittier is an OSC in EPA's Region 10's field office in Alaska. Bob has 5 years experience with emergency response in Alaska, and 18 years with the Maine Department of Environmental Protection.
- Kathy Halbur is an EPA On-Scene Coordinator in Region 5. Kathy is located in Green Bay, WI. Kathy has been with EPA for nine years; six as an OSC and three years prior to becoming an OSC with ORD's NHSRC.
- Dan Heister is an On Scene Coordinator (OSC) in Region 10 in Portland, OR and has been with the USEPA for twenty-six years. Nine years were in pesticide and toxics enforcement. He has been an OSC for the last thirteen years.
- Jim Mullins is a part time employee of Tetra Tech, a support contractor to EPA. Jim retired from the EPA Region 6 Office (Dallas TX) after 25 years in the oil spill and haz mat response organization.

Disclaimer

Disclaimer

- The purpose of this presentation is to stimulate thought and discussion.
- Nothing in this presentation is intended to supersede or contravene Federal Statutes, Regulations, or Official EPA Policies.



Pesticide Course Agenda – 2013

fast

We will take about 20 min to speak to the regulations---overview.

Discuss overview and how it ties in with the rest of the presentations

A time before regulation or the Snake Oil Era

Post Snake Oil Pre Carson Era

This sample label is current as of 10/09/2002. The product descriptions and recommendations provided in this sample are for background information only. Always refer to the label on the product before using Monsanto or any other agrichemical product.

21136B6-26/CG

Roundup PRO® Herbicide

The complete broad-spectrum postemergence professional herbicide for industrial, turf and ornamental weed control.

Complete Directions for Use

EPA Reg. No. 524-475

AVOID CONTACT OF HERBICIDE WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES, BECAUSE SEVERE INJURY OR DESTRUCTION IS LIKELY TO RESULT.

2003-1

Read the entire label before using this product.

Use only according to label instructions.

Not all products recommended on this label are registered for use in California. Check the registration status of each product in California before using.

Read the "LIMIT OF WARRANTY AND LIABILITY" statement at the end of the label before buying or using. If terms are not acceptable, return at once unopened.

THIS IS AN END-USE PRODUCT. MONSANTO DOES NOT INTEND AND HAS NOT REGISTERED IT FOR REFORMULATION. SEE INDIVIDUAL CONTAINER LABEL FOR REPACKAGING LIMITATIONS.

1.0 INGREDIENTS

ACTIVE INGREDIENT:	
*Glyphosate, N-(phosphonomethyl)glycine, in the form of its isopropylamine salt	41.0%
OTHER INGREDIENTS (including surfactant):	59.0%
	100.0%

*Contains 480 grams per liter or 4 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its isopropylamine salt. Equivalent to 356 grams per liter or 3 pounds per U.S. gallon of the acid, glyphosate.

This product is protected by U.S. Patent Nos. 5,683,958; 5,703,015; 6,063,733; 6,121,199; and 6,121,200. No license granted under any non-U.S. patent(s).

2.0 IMPORTANT PHONE NUMBERS

1. FOR PRODUCT INFORMATION OR ASSISTANCE IN USING THIS PRODUCT, CALL TOLL-FREE, 1-800-332-3111.
2. IN CASE OF AN EMERGENCY INVOLVING THIS PRODUCT, OR FOR MEDICAL ASSISTANCE, CALL COLLECT, DAY OR NIGHT, (314)-694-4000.

3.0 PRECAUTIONARY STATEMENTS

3.1 Hazards to Humans and Domestic Animals

Keep out of reach of children.

CAUTION!

CAUSES EYE IRRITATION.

Avoid contact with eyes or clothing.

FIRST AID:	Call a poison control center or doctor for treatment advice.
IF IN EYES	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses if present after the first 5 minutes then continue rinsing eye.

- Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
- You may also contact **(314) 694-4000**, collect day or night, for emergency medical treatment information.
- This product is identified as **Roundup Pro herbicide, EPA Registration No. 524-475.**

DOMESTIC ANIMALS: This product is considered to be relatively nontoxic to dogs and other domestic animals; however, ingestion of this product or large amounts of freshly sprayed vegetation may result in temporary gastrointestinal irritation (vomiting, diarrhea, colic, etc.). If such symptoms are observed, provide the animal with plenty of fluids to prevent dehydration. Call a veterinarian if symptoms persist for more than 24 hours.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

3.2 Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

3.3 Physical or Chemical Hazards

Spray solutions of this product should be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

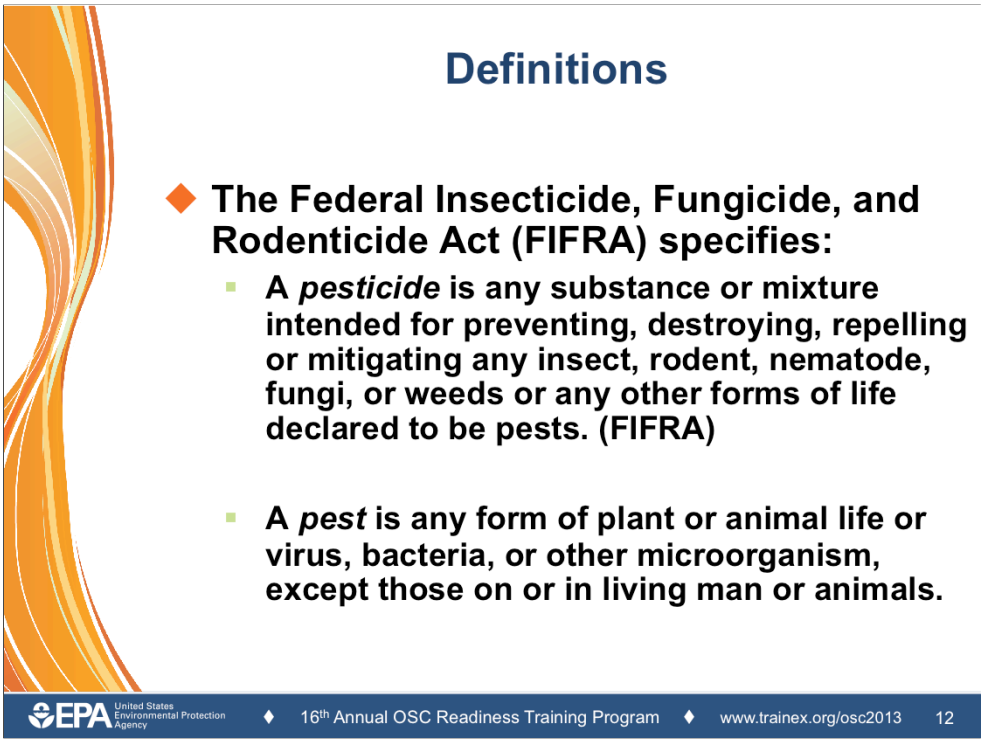
DIRECTIONS FOR USE

It is a violation of Federal law to use this product in any manner inconsistent with its labeling. This product can only be used in accordance with the Directions for Use on this label or in separately published Monsanto Supplemental Labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

1

The EPA Era, One of six pages, these are just the precautionary statements


Definitions
The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) specifies:
A *pesticide* is any substance or mixture intended for preventing, destroying, repelling or mitigating any insect, rodent, nematode, fungi, or weeds or any other forms of life declared to be pests. (FIFRA)
A *pest* is any form of plant or animal life or virus, bacteria, or other microorganism, except those on or in living man or animals.
EPA United States Environmental Protection Agency
16th Annual OSC Readiness Training Program
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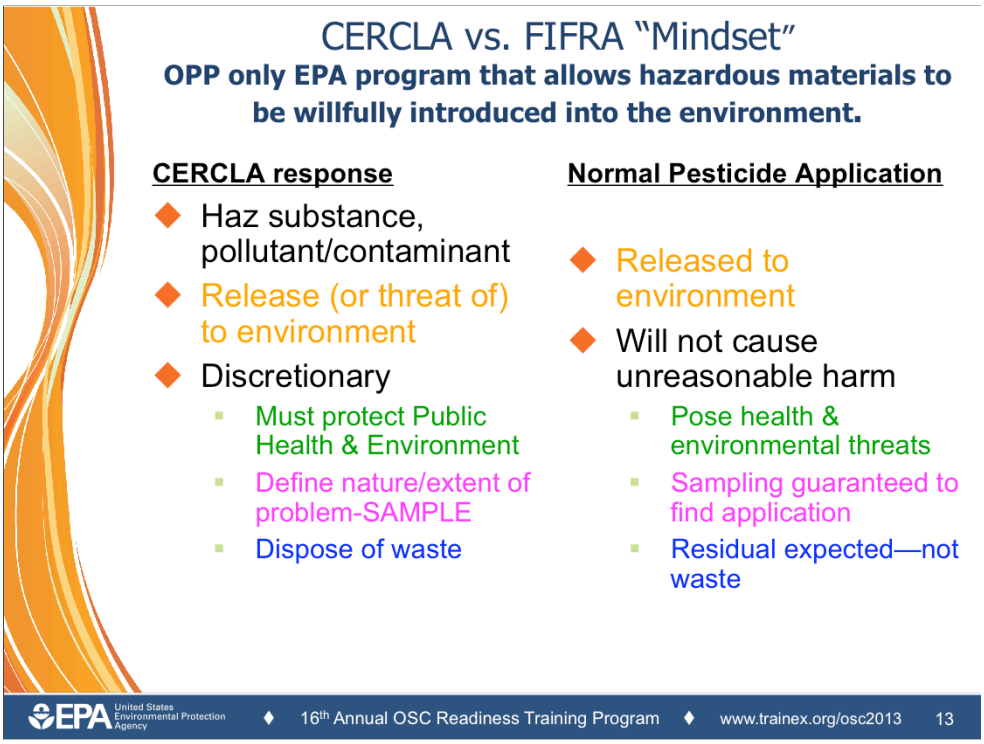
CERCLA vs. FIFRA "Mindset"
OPP only EPA program that allows hazardous materials to be willfully introduced into the environment.
CERCLA response
Haz substance, pollutant/contaminant
Release (or threat of) to environment
Discretionary
Must protect Public Health & Environment
Define nature/extent of problem-SAMPLE
Dispose of waste
Normal Pesticide Application
Released to environment
Will not cause unreasonable harm
Pose health & environmental threats
Sampling guaranteed to find application
Residual expected—not waste
EPA United States Environmental Protection Agency
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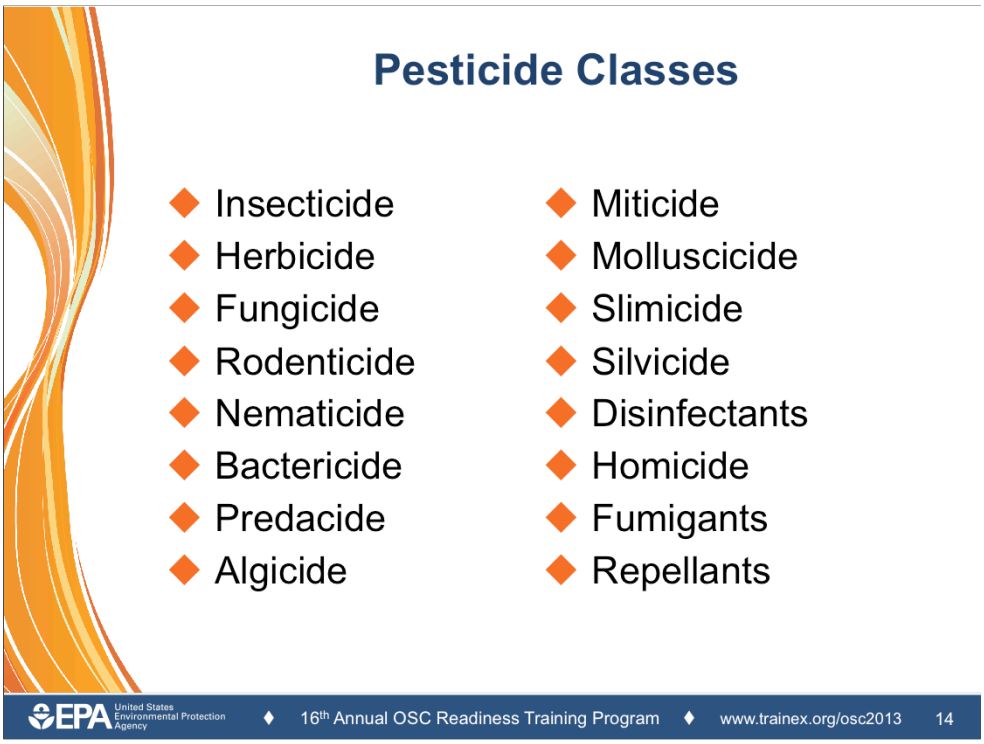
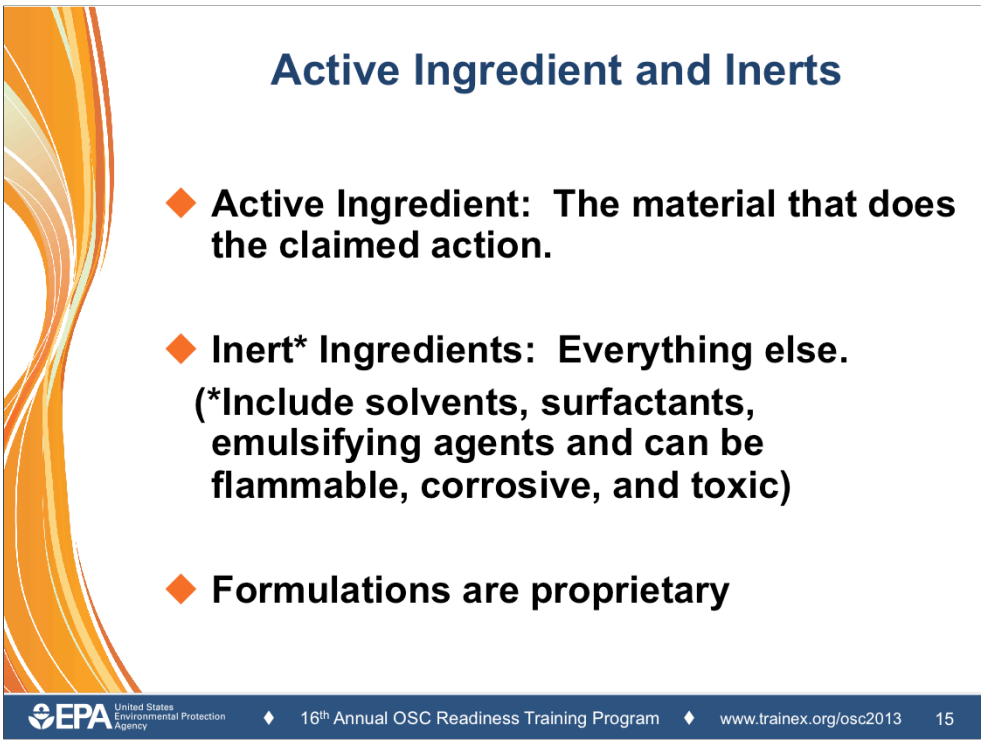
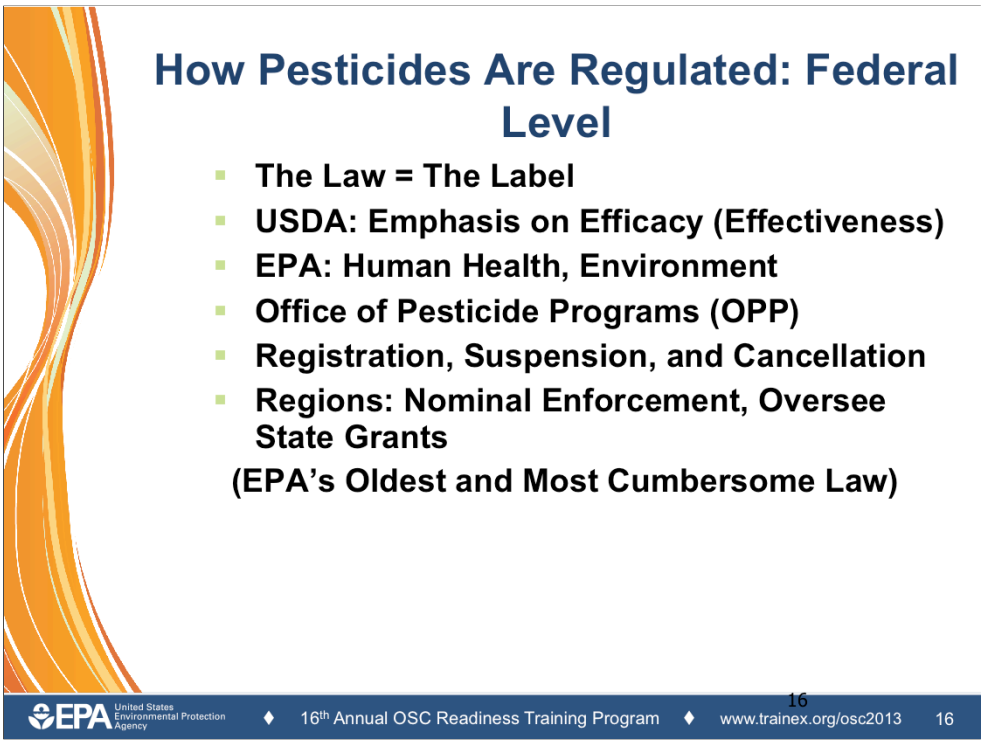


Slimicide: Hex Chrome Disinfectatnt: Check your bleach for EPA #

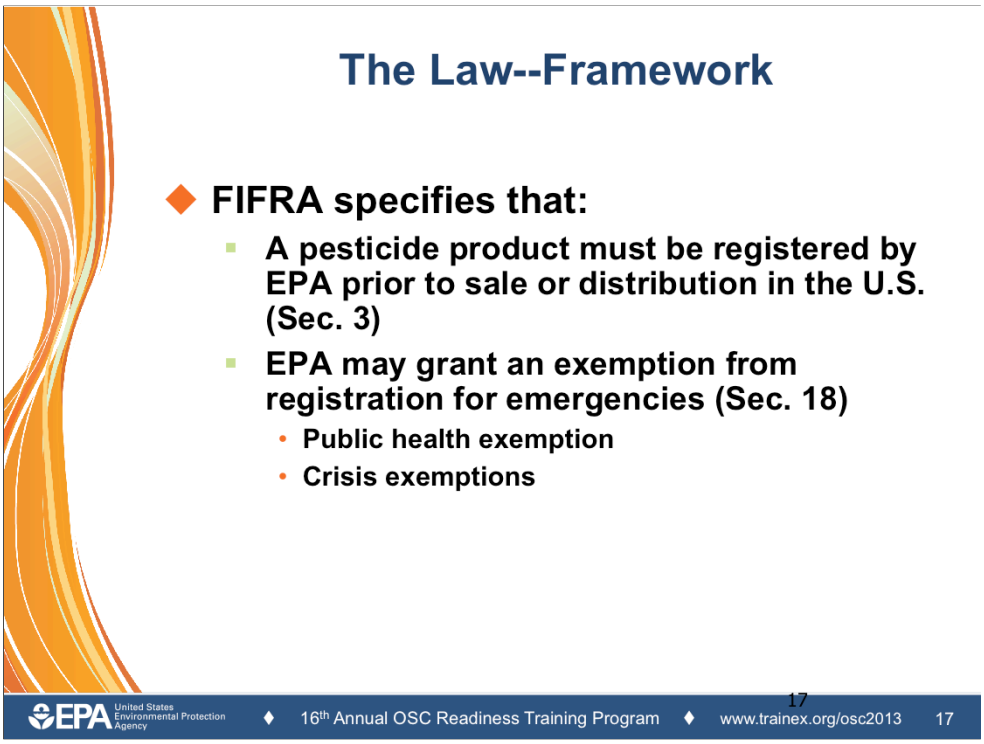


Recurring terms inevitable, Jim will be discussing fate

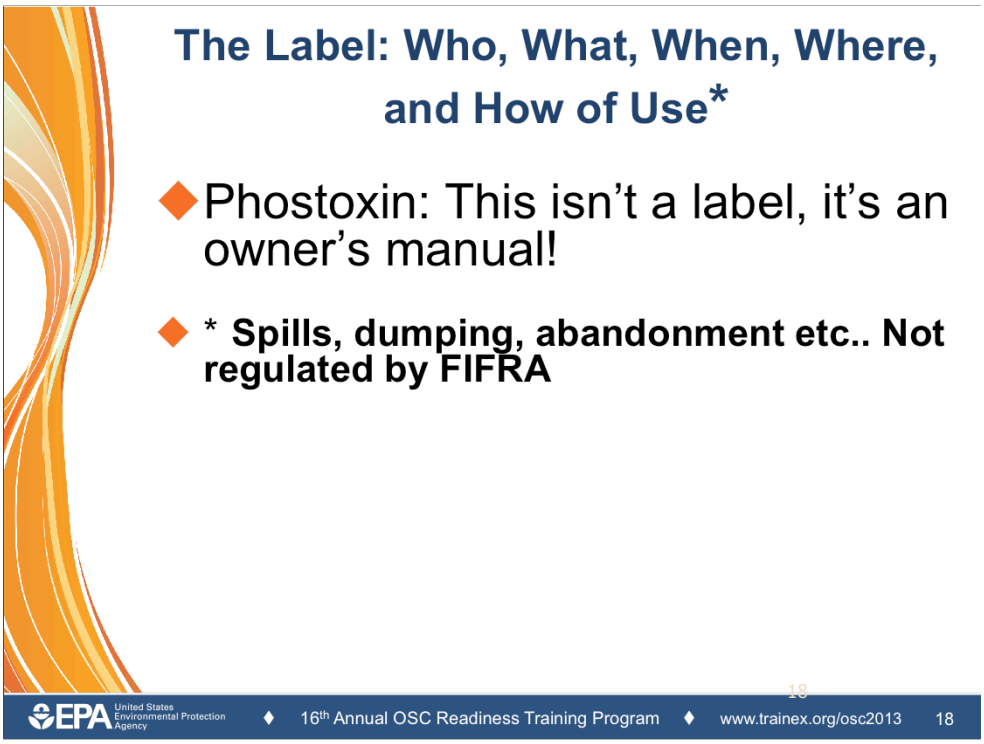


Registration is analogous to FDA registration of prescription drugs

Suspension is the beginning of the slipery slope to cancellation. Cancellation rarely has a decent strategy for existing stocks and hence we see a lot of the stuff in barns, garages, and COOPs



Most relevant to OSC's Crisis exemption: Capitol Hill Anthrax


The Label: Who, What, When, Where, and How of Use*
Phostoxin: This isn't a label, it's an owner's manual!
* Spills, dumping, abandonment etc.. Not regulated by FIFRA
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EPA United States Environmental Protection Agency
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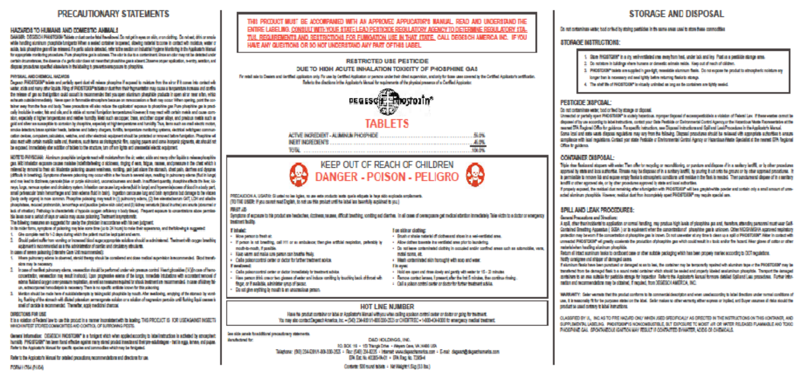
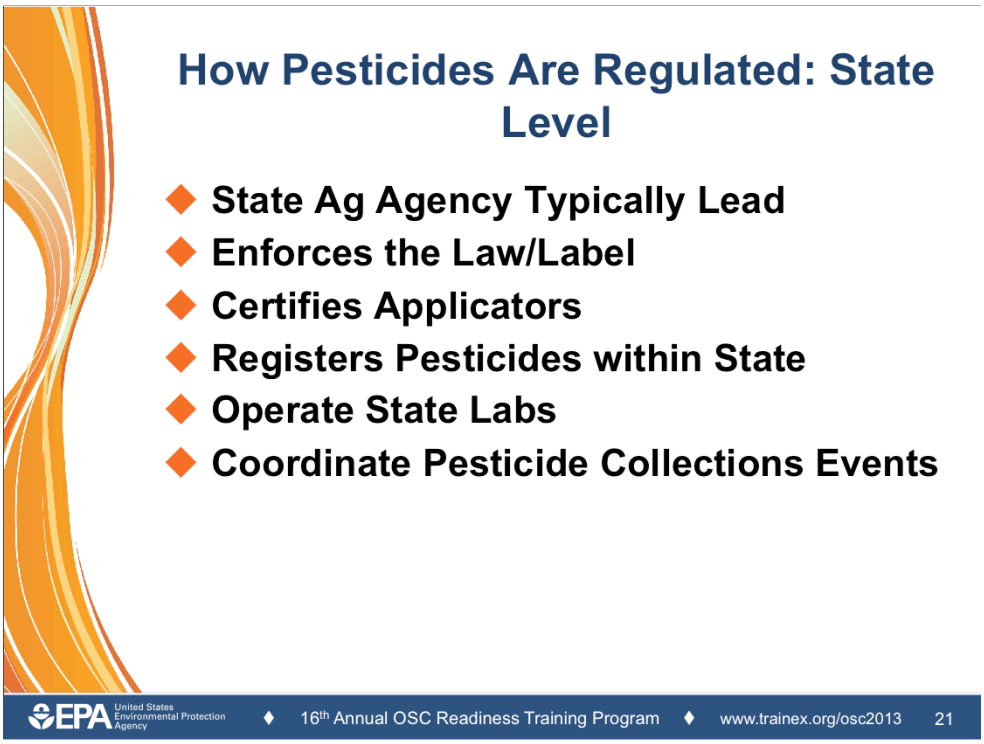
Aspirin vs Vicodin

Aspirin vs Vicodin

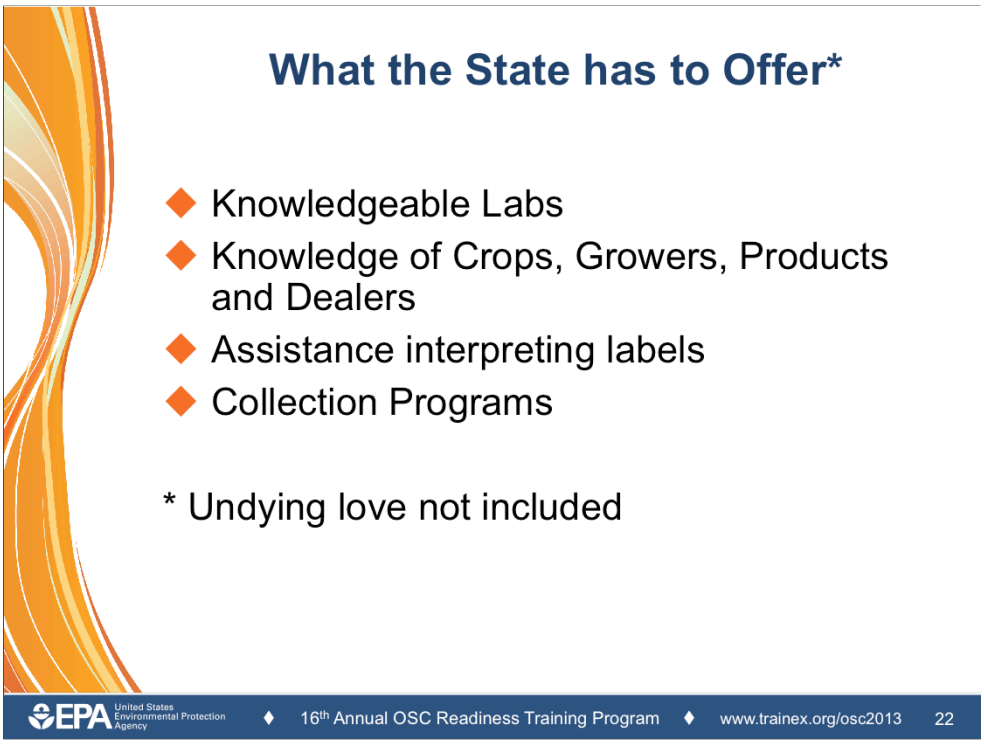
, Double H records proved valuable in establishing RP,



Degesch, the folks who brought you Zyklon B



Last two bullets most important to OSC



The mission of State Ag is to foster agriculture in the state not bust farmers, that doesn't mean they won't help.

What's Wrong Here?

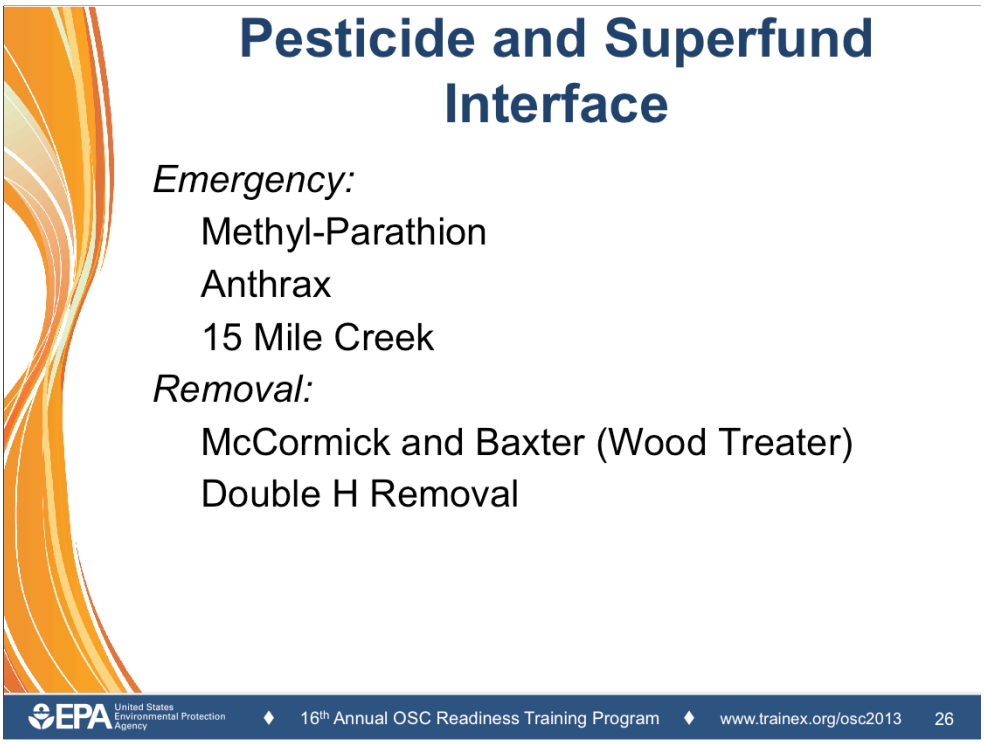
A mint field somewhere in Oregon.

Aerial applicator

- Over sprays field
  - Sprays non-approved crop
  - Sprays farm workers
  - Injuries
- CERCLA or FIFRA response?

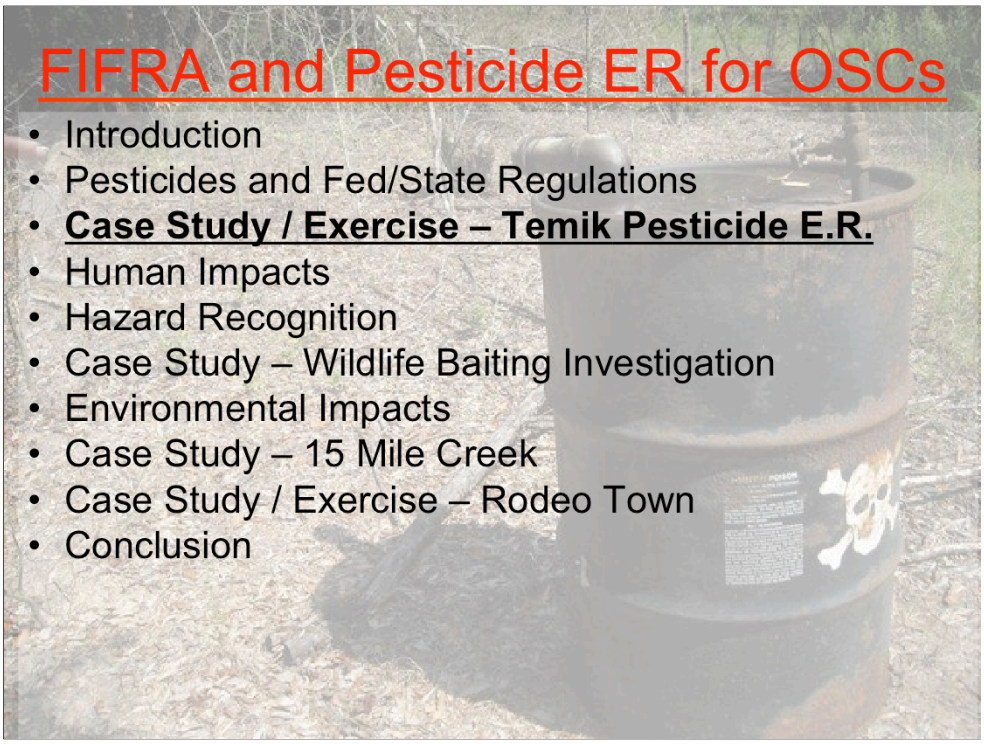
Aerial applicator

- Engine fails
  - Crashes into river
  - Spills pesticide
  - Fish kill
- CERCLA or FIFRA response?



I will go into great detail on 15 Mile Creek.

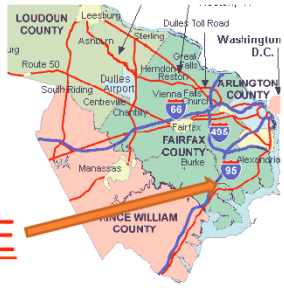
Questions? Comments

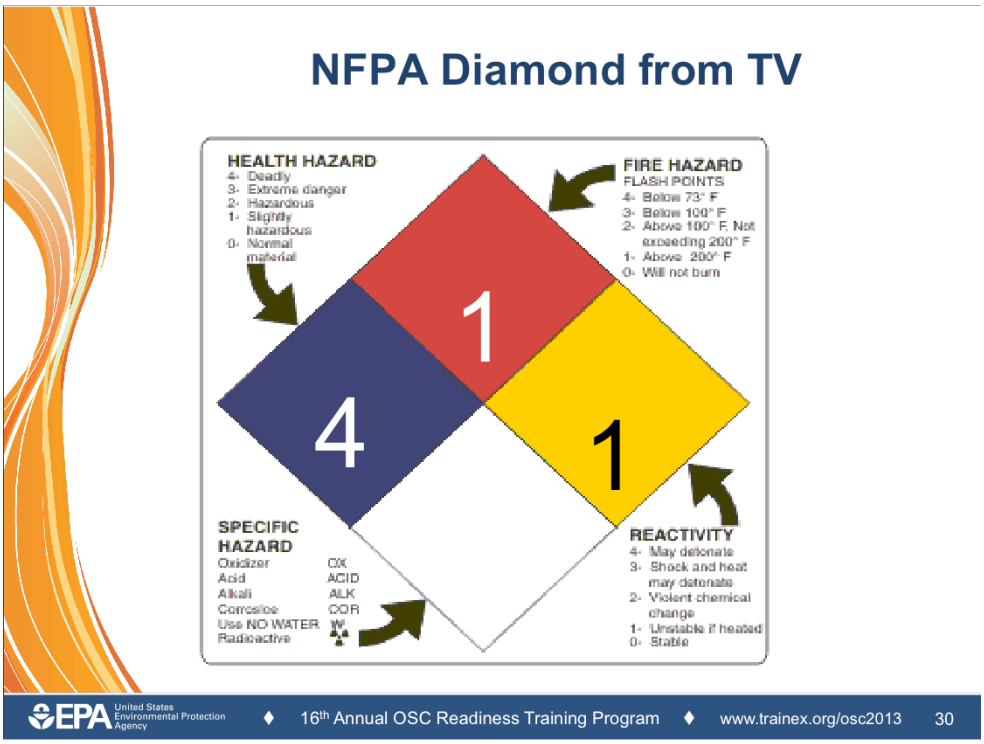


Pesticide Course Agenda – 2013

REOC Region 3

- TV in Response Center shows a truck accident with a fire.
- Fire Dept has closed I-95
  - I-95 carries 45,000 vehicles per day
  - Aerial news pics are good





This is why the EOC has local TV feeds

OSC look for these signs

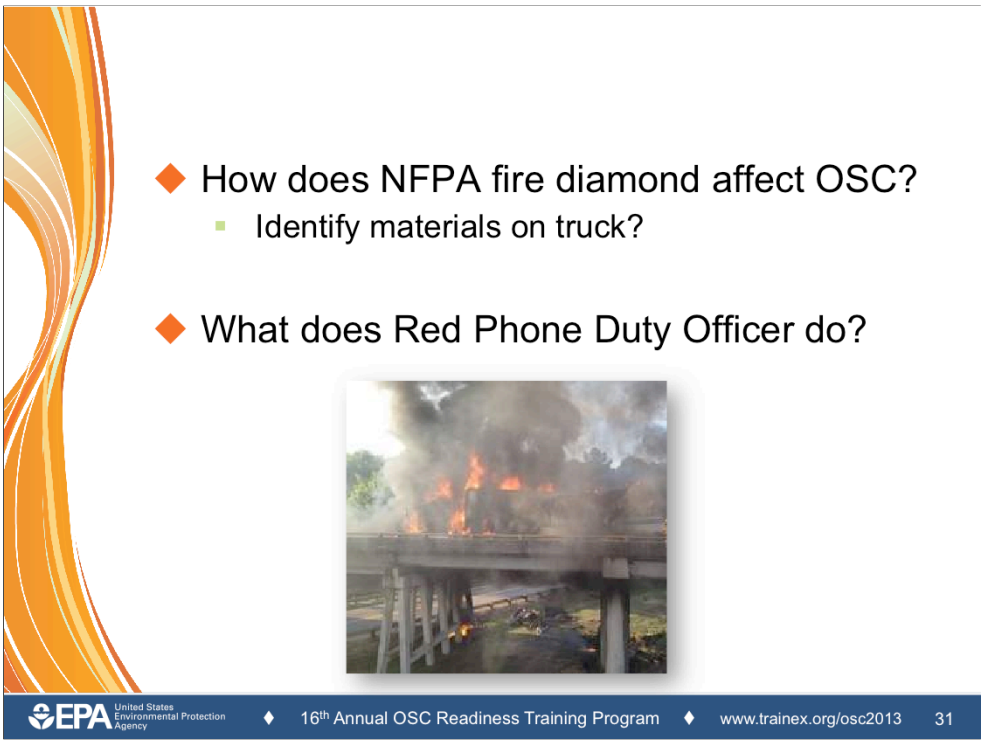
What does this tell you?

-highly toxic

-flash point above 200 F

-Unstable if heated

-no specific hazaef info



Diamond is aimed at firefighters, not OSCs. It does not clearly identify the material. This diamond came from a mfg of Temik, and the explanations outside the diamond are added on (not from mfg)

RED Phone Duty Officer Response

- A Calls Fire Department
- B Calls State Police
- C Calls boss - "I 95 closed for vehicle fire"
- D No action
- E Calls HQ

Pick as many as apply……..choice D is only incorrect

Lets discount item D---read the newspaper---not your lazy OSC—however with limited info available, this option is supportable

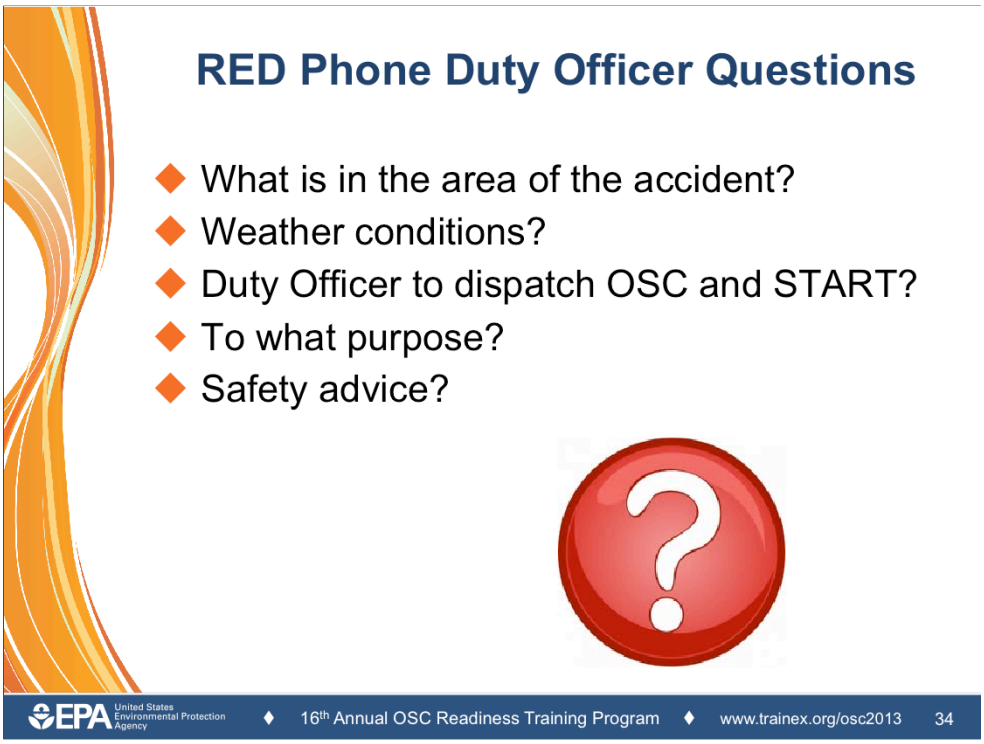
"E" is likely most correct….and in the order listed. Who will call HQ? Regional protocol (thresholds?) for calling HQ?

New Fire Department Info

- Driver killed
- Truck engulfed
  - Company name/logo destroyed
- Slow info gathering
  - Fire not being fought
  - Pesticides (NOS) on board?
  - FD seeking more info – will call back

No passengers on board

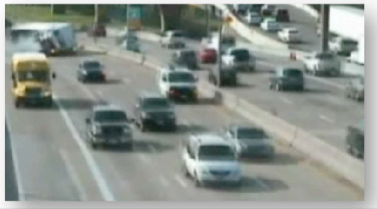
FD ELECTED to NOT fight fire due to potentialpesticide danger



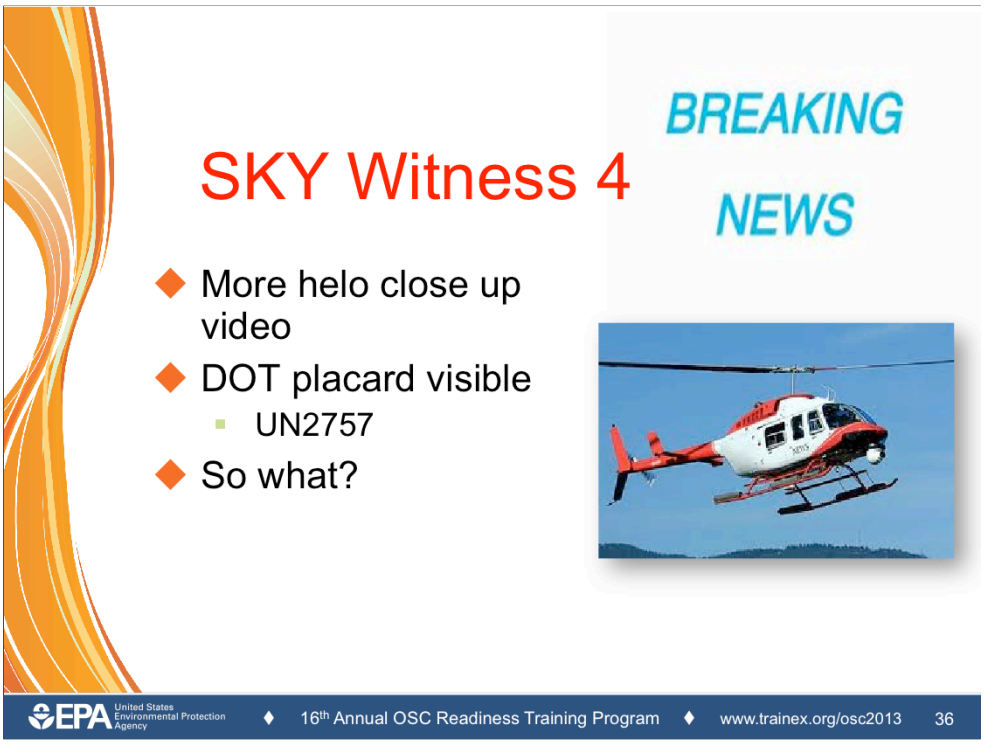
Engage students with each question …"book answers" on next slide

Answers

- Dense residential area near accident
- July in North VA—near 95F, 30-50% chance of scattered PM thunderstorms
- Response OSC & START dispatched
  - Coordinate with Battalion Chief on scene
  - Possible air monitoring
  - BIG Freeway shut down
- Stay far away – use binoculars



Fast slide

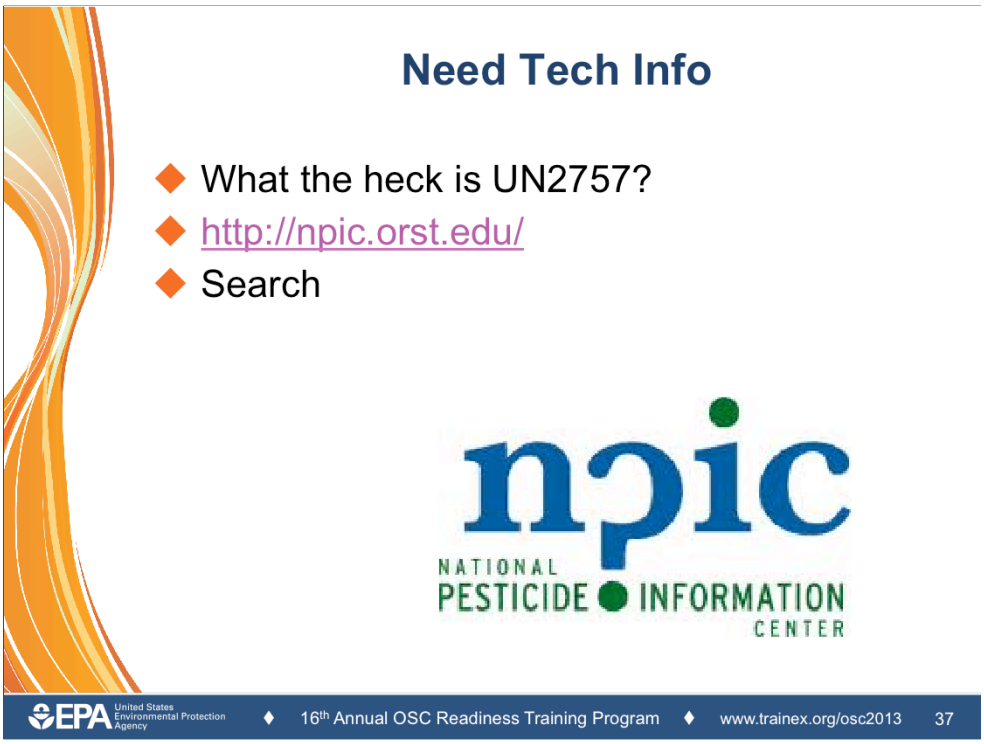


What is UN number?

US DOT (U.S. Department of Transportation) has definitions for each hazmat placard used in transportation. Title 49 of the United States Code of Federal Regulations (49CFR) also known as the Federal Motor Carriers Safety Regulations (FMCSR) requires the use hazardous materials placards when shipping hazardous materials cargo and dangerous goods in the United States. Canada, Mexico and many other countries have similar regulations that also require the use of these placards.

Four Digit UN Numbers on Placards UN/NA numbers found on bulk placards refer to specific chemicals or groups of chemicals and are assigned by the United Nations and/or the United States Department of Transportation. USDOT 2004 Emergency Response Guidebook will help you find out what the four digit numbers you see on placards mean.

What value to OSC?



Npic does not find UN2757 (in any combination I tried)

Google does

Need Tech Info

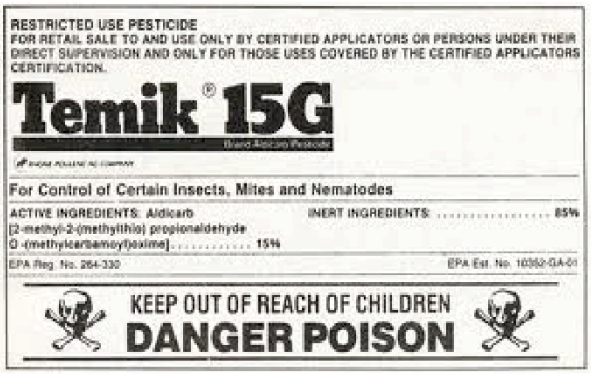
- https://www.google.com/webhp?hl=en&tab=mw
- UN2757
- Results: Carbamate Pesticide, Solid, Toxic
- Specific pesticide or family of pesticides?

Dispatched OSC Reports In

- Fire extinguishment not attempted
- Fire Dept reports TEMIK pesticide on board
- Battalion Chief to EPA
  - Should I call for evacuation?
  - Can EPA perform air monitoring?
  - What is needed if we have rain?
  - Should we restrict air space (news choppers)?

Red Phone Duty Officer Tech Support

- http://npic.orst.edu/
- Temik


RESTRICTED USE PESTICIDE
FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATORS CERTIFICATION.

Temik® 15G

Brand Aldicarb Pesticide

For Control of Certain Insects, Mites and Nematodes

ACTIVE INGREDIENTS: Aldicarb [2-methyl-2-(methylthio) propionaldehyde O-(methylcarbamoyl)oxime] 15%

INERT INGREDIENTS: 85%

EPA Reg. No. 264-330

EPA Est. No. 10350-GA-01

KEEP OUT OF REACH OF CHILDREN

DANGER POISON

Exercise in use here

EPA Recommendations to FD
NPIC Data on Temik

- Water solubility?
  - EPA Recommendation on fire fighting/rain?
- Toxicity
  - Temp evac?
    - Threshold for lifting?
  - Air monitoring?
  - Air space restrictions?

What are you going to tell the Battalion Chief?

Public Affairs Wants Statement

- What can you give in next 3 minutes?
- Who will get this together for PA?

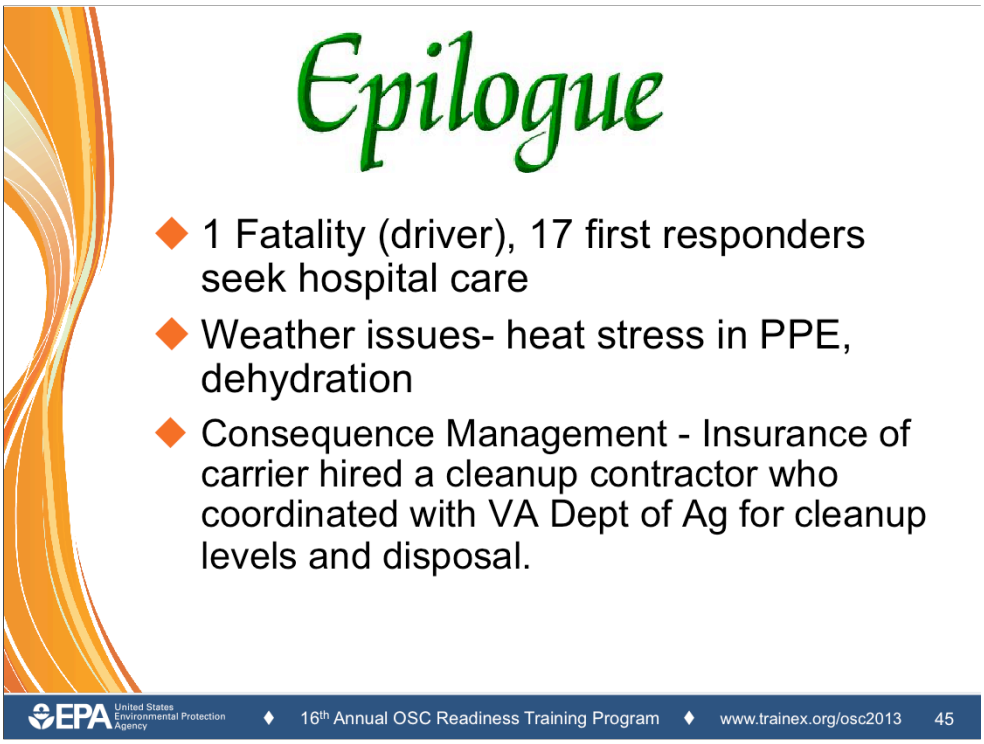
NPIC info

Delegated FIFRA State Agency

- Will VA Dept AG help here?
  - Why?

Epilogue

- 9 hrs for fire to burn out
- START did air monitoring downwind?
- Residential area
  - Evac 3 schools & 3 dozen homes
  - Others shelter in place for 12 hrs
- I-95 closed for 12 hrs
- Media “circus”


Epilogue
1 Fatality (driver), 17 first responders seek hospital care
Weather issues- heat stress in PPE, dehydration
Consequence Management - Insurance of carrier hired a cleanup contractor who coordinated with VA Dept of Ag for cleanup levels and disposal.
EPA United States Environmental Protection Agency
16th Annual OSC Readiness Training Program
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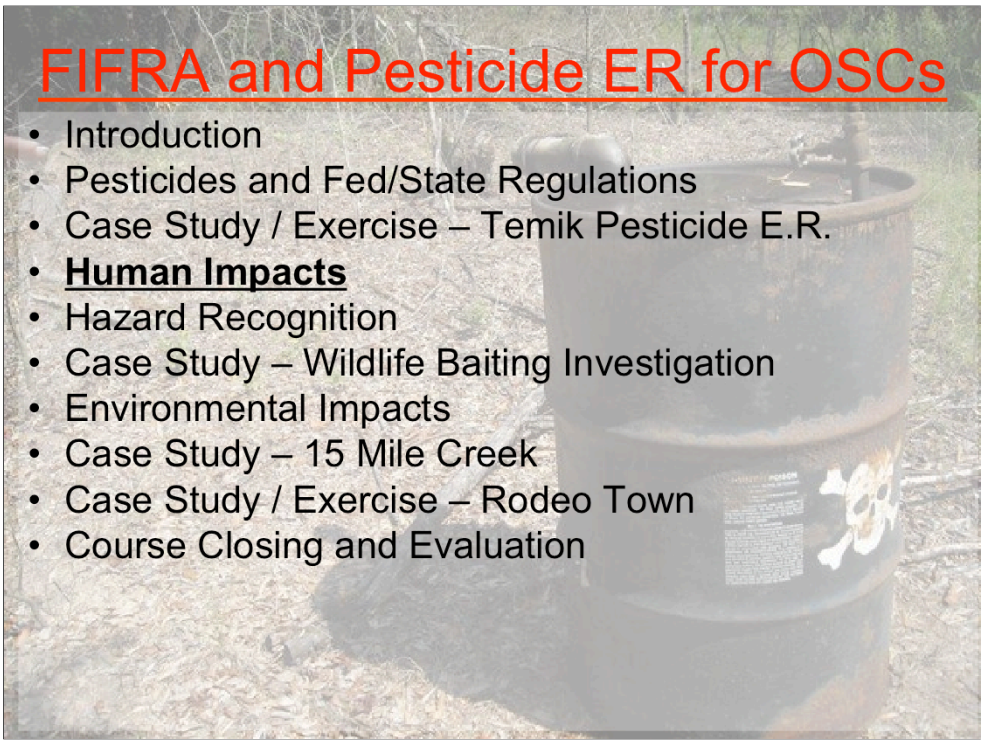
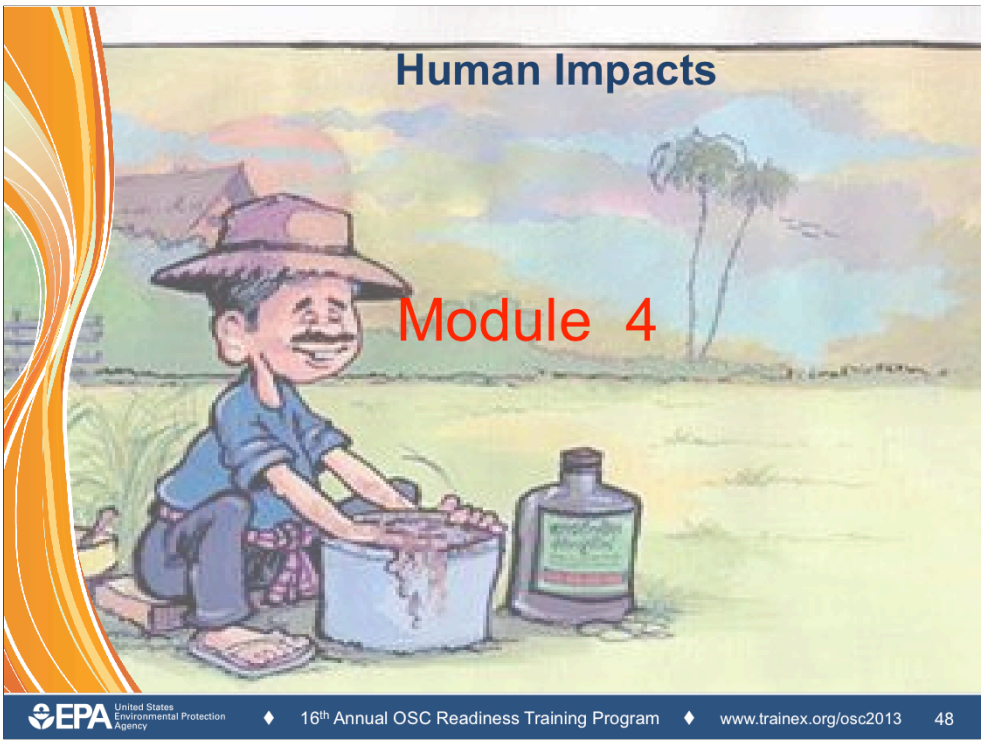
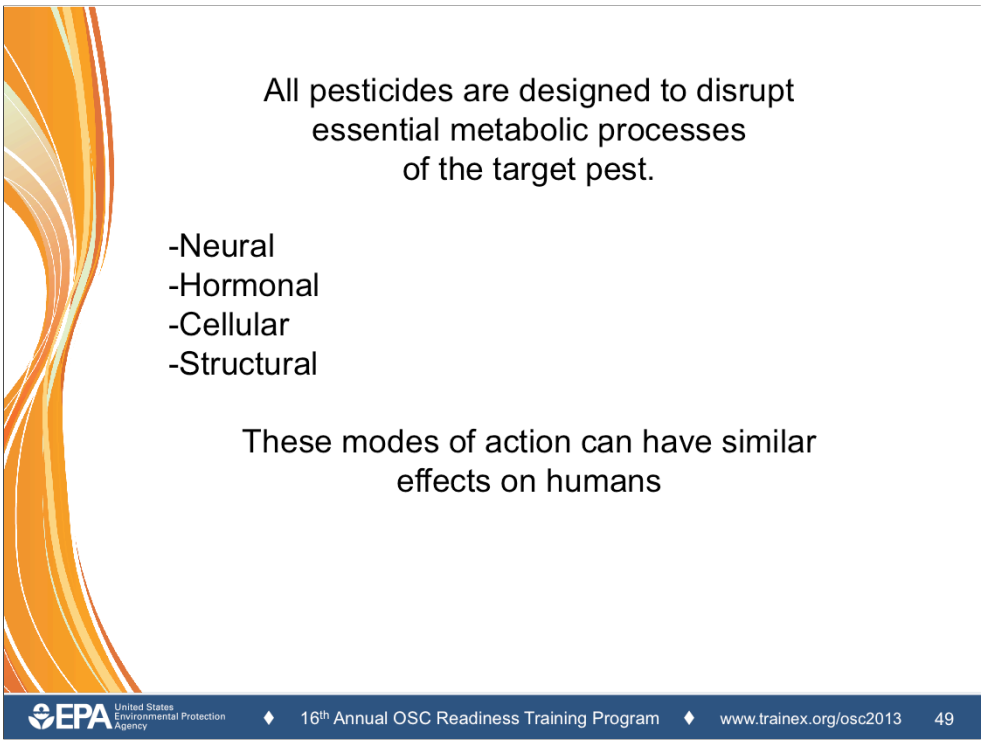
This exercise is based on a real example of a truck wreck in April 1994 on I-30 near Dallas. TX.



Pesticide Course Agenda – 2013

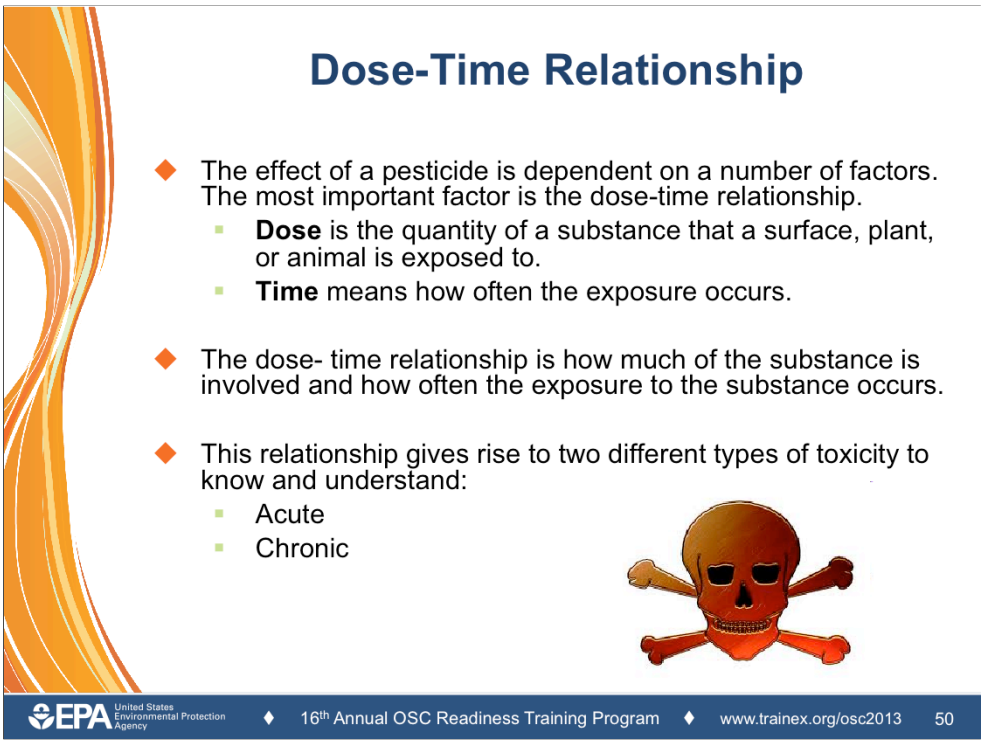


Pesticides are designed to be absorbed by a target organism, unfortunately they aren't particular.



Origin of the term Pest—any plant, animal, organism not desirable. "cide"—from Latin root meaning "cut" or "kill"

The nerves of a cockroach function exactly like those of an alligator or a human. Many of the pesticides started out as "chemical cousins" of WW1 and WW2 chemical nerve agents. Post war use of the technology applied as "pesticide"



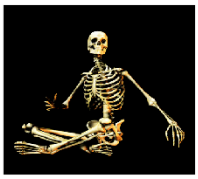
Acute definition-- having a sudden onset

Chronic definition--marked by long duration or frequent recurrence

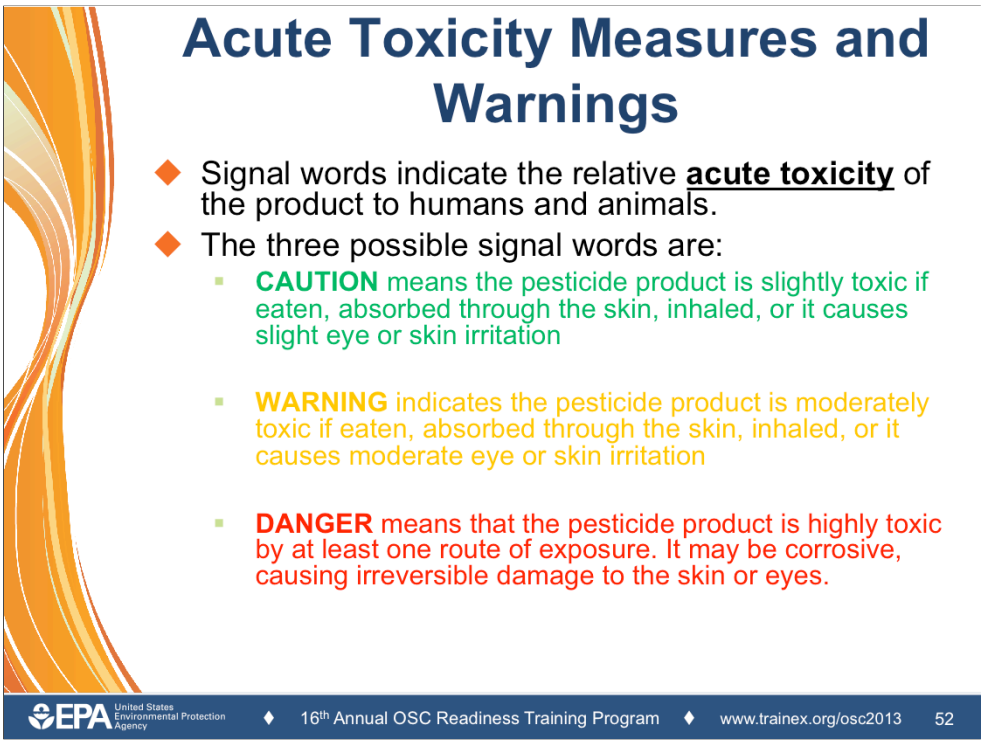
Definitions are not specific time (2 min or 3 days or 6 months)

Acute Toxicity

- Acute toxicity of a chemical refers to its ability to cause systemic damage as a result of a one-time short-term exposure to a chemical.
- The signal words on the label are based on the acute toxicity of the pesticide.



- Acute toxicity may be measured as acute oral (through the mouth), acute dermal (through the skin), and acute inhalation (through the lungs).



The colors are a crude acute toxicity analogy to a traffic light.

Green-lowest acute tox

Yellow –increased tox

Red-most tox

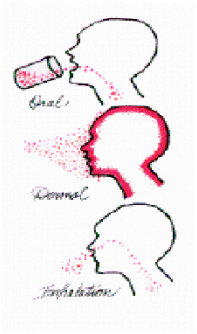
Chronic Toxicity

- Chronic toxicity refers to harmful effects produced by long-term, low-level exposure to pesticides.
- There is not a standard measure like LD_{50} for chronic toxicity.

By definition, the testing for chronic toxicity takes a long time----may be years of data gathering

Routes of Entry

- There are three ways in which pesticides may enter your body.
  - **Dermal** (through the skin)
  - **Inhalation** (through the nose and respiratory system
  - **Oral** (through the mouth and digestive system)



Different rates of exposure via each route of exposure

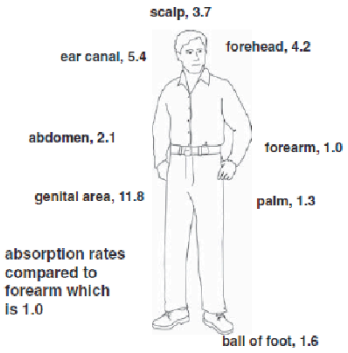
Dermal Entry

- Wet, dry or gaseous forms of pesticides can be absorbed through the skin.
- Entry may occur any time a pesticide is mixed, applied, or handled, and is often undetected.
- Skin varies in its capacity to act as a barrier to pesticide absorption.

If time---use reference and determine which route of exposure is most significant for Carbofuran?

Comparative Rates of Dermal Absorption for Different Parts of the Body

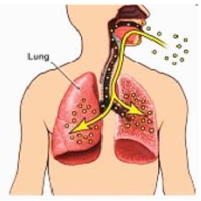
- Absorption continues to take place on the affected skin area as long as the pesticide is in contact with the skin.
- Seriousness of the exposure depends on the size of the skin area contaminated, the length of time the material is in contact with the skin, and the amount of pesticide on the skin.



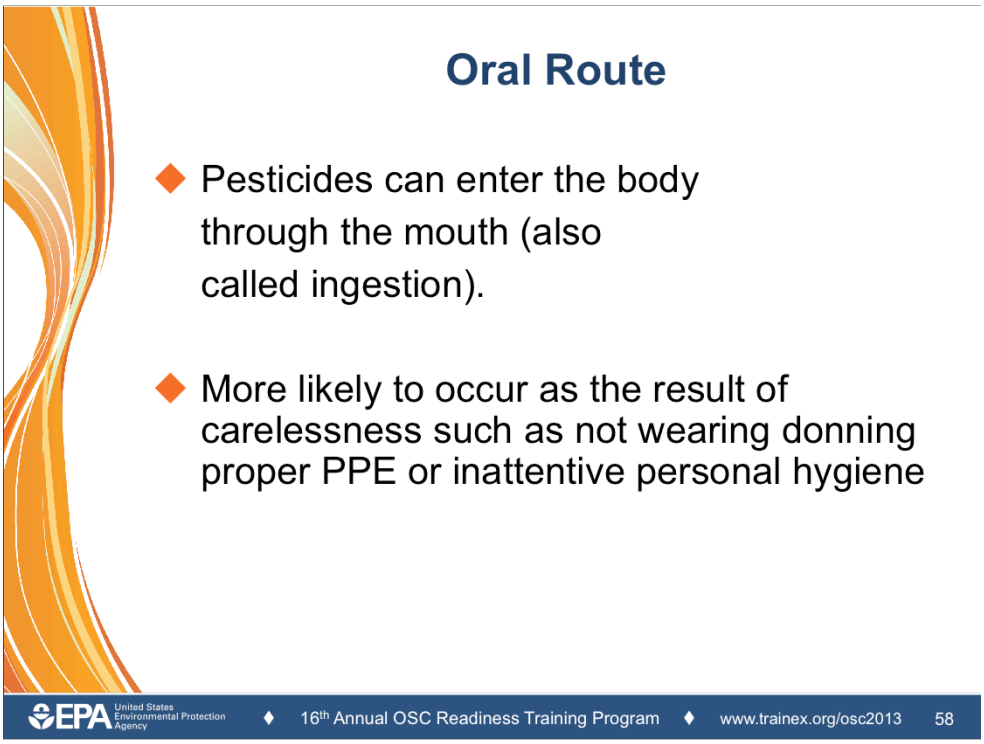
Dermal sorption of a given pesticide varies on different parts of the body.

Inhalation Route

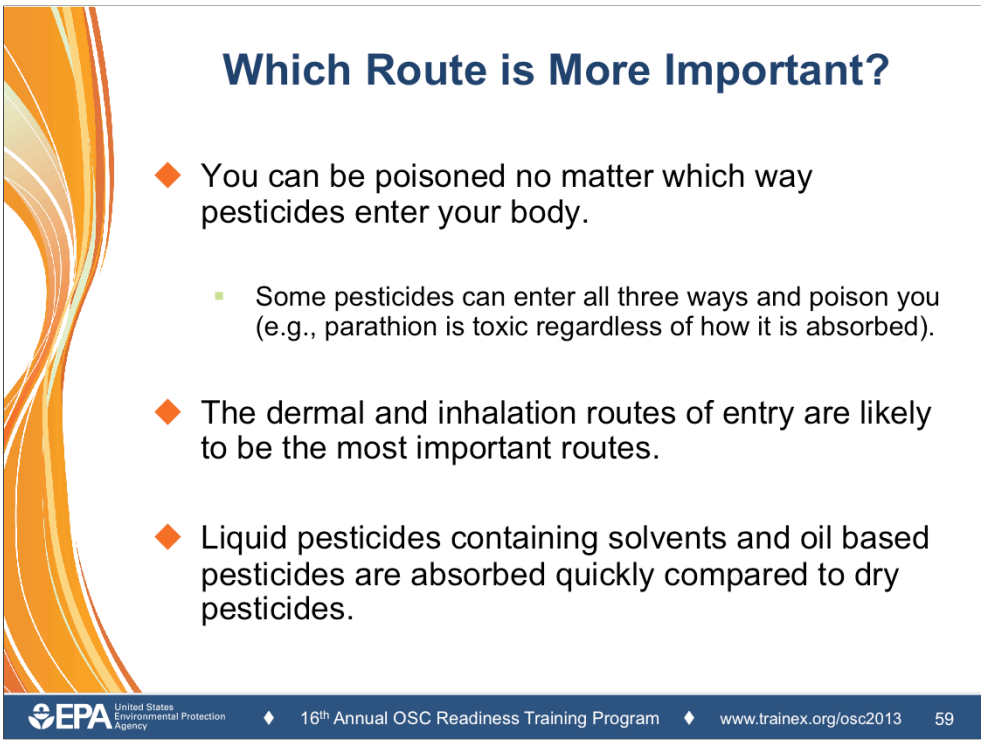
- Whether as dusts, fumes, or spray mists, pesticides can drawn into your lungs as you breathe.



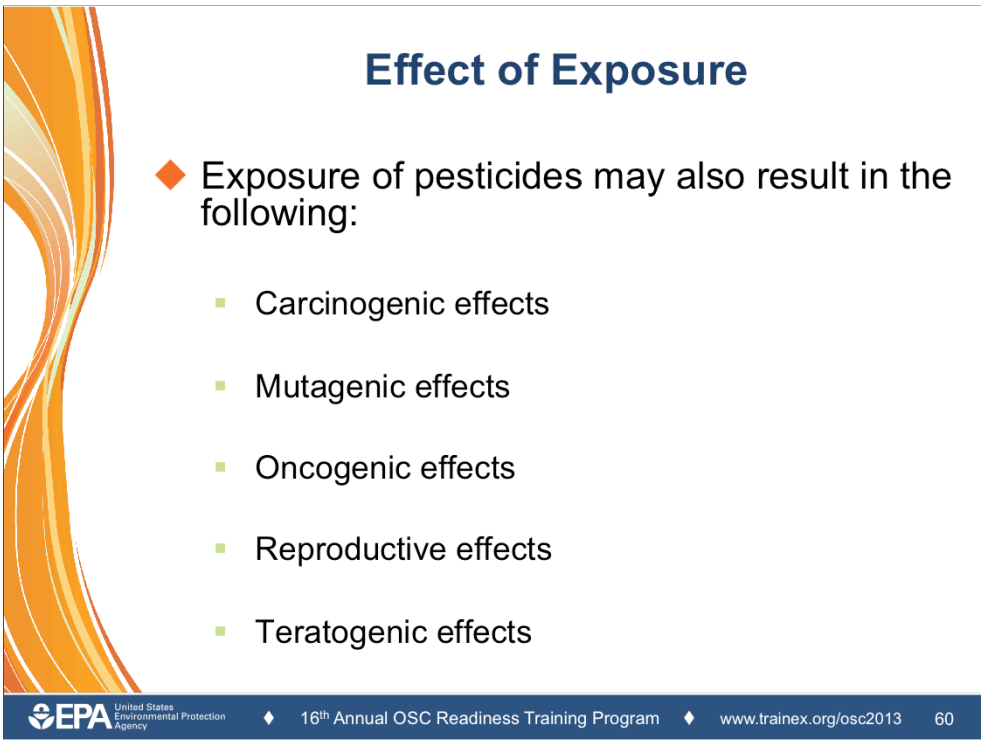
- Inhalation of pesticides can occur by breathing smoke from burning containers; breathing fumes from pesticides while hazcating; and inhaling fumes while consolidating mixtures.



Hygiene issue….wash hands frequently.



If time—ask students to use references to evaluate these bullets for pesticide Carbofuran



carcinogen -Agent (chemical, physical or biological) which is capable of increasing the *incidence* of malignant *neoplasms*, thus causing cancer.

mutagen - An agent, such as a chemical, ultraviolet light, or a radioactive element, that can induce or increase the frequency of mutation in test animals

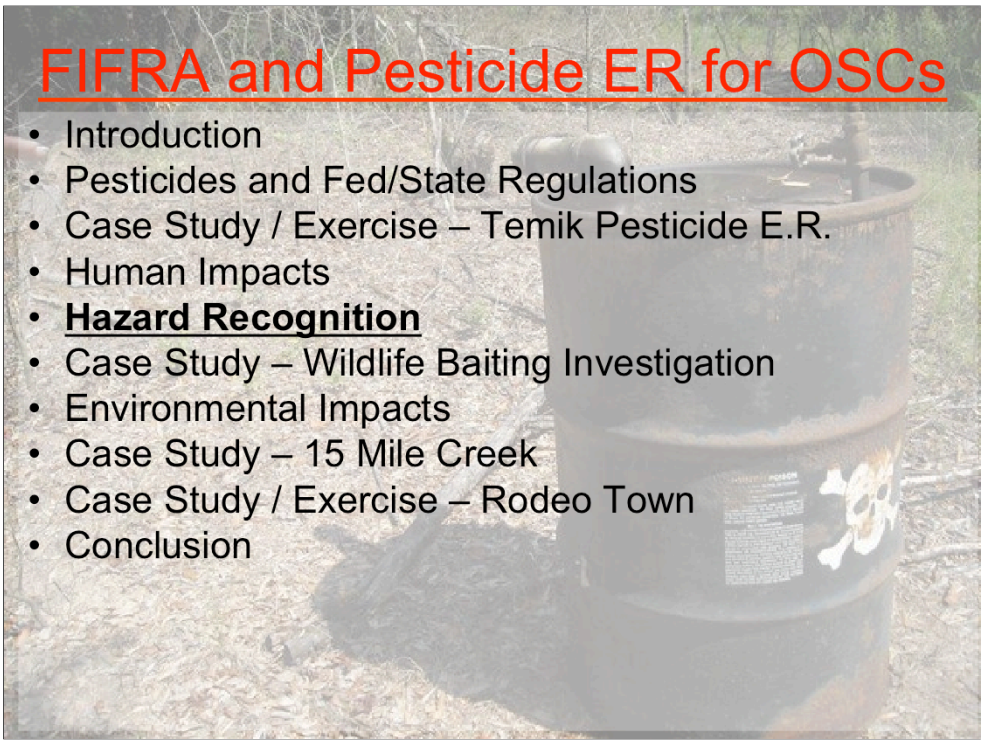
oncogenic -- giving rise to tumors or causing tumor formation; said especially of tumor-inducing viruses

A *teratogen* is any substance that can cause malformation of the fetus during pregnancy.

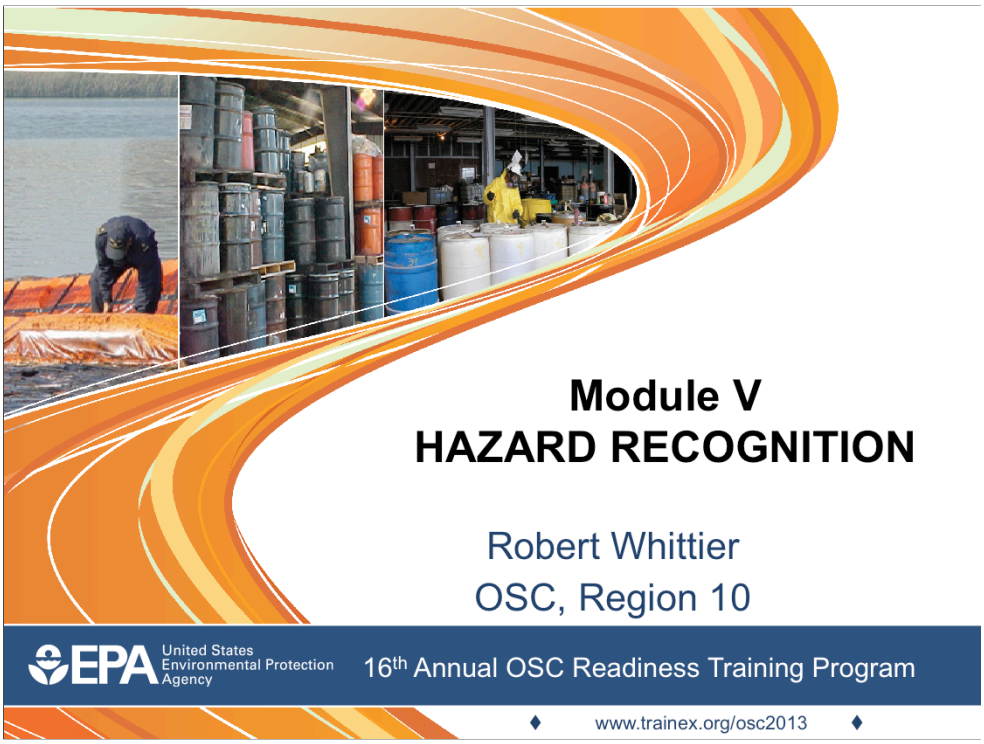
In Review

- The effect of a pesticide is dependent on a number of factors – the most important is the dose-time relationship.
- There are three ways pesticides may enter your body – dermal, inhalation, and oral
- The effects of toxicity and exposure are many and varied.
- There are two component categories associated with pesticides – active and inert


Questions?



Pesticide Course Agenda – 2012



Module V
HAZARD RECOGNITION

Robert Whittier
OSC, Region 10

EPA United States Environmental Protection Agency

16th Annual OSC Readiness Training Program

www.trainex.org/osc2013

HAZARD RECOGNITION

- Anatomy of the label
- Nomenclature, Formulations
- PPE & Decon
- Pesticide References

By way of introduction much of this module focuses on the pesticide label.

-The READ & FOLLOW is on every label & is really fundamental

-possibly the most "under complied with" part of the label

-many issues with pesticide use and disposal would be much better managed if this instruction were closely followed

-we want to start by telling OSCs there is a lot of job relevant info on labels

-*protecting the health and safety of workers & public is always #1 objective*

BUT YOU MUST READ THE LABEL!!!!

label info will not otherwise reach you—no osmosis, no magic. Just read

Side note—the label has evolved over the 60+ year history of the program…and many of these changes made the label longer, more detailed, and provided additional info….unfortunately some of that discourages reading…Dan will discuss in more detail

Oh…and there is one more really good reason on next slide

Terrific Reason to Read/Follow the Label

- "It is a violation of Federal Law to use this product in a manner inconsistent with its labeling."

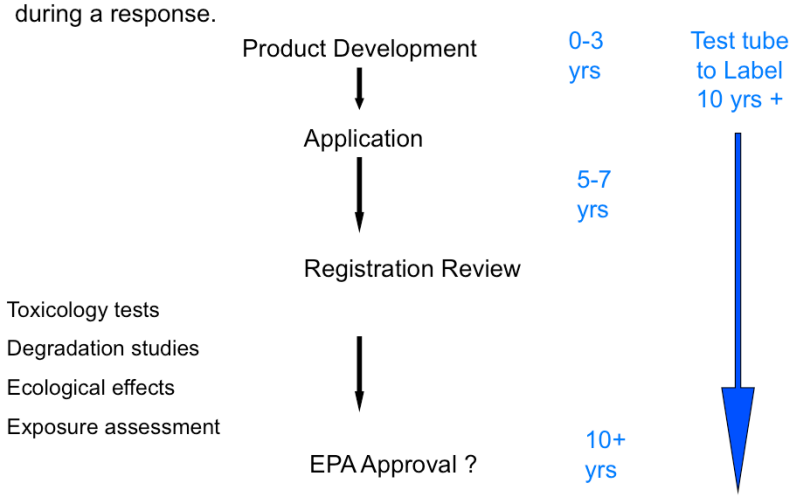
30 sec

This is a typical "MISUSE STATEMENT on most labels

Lets begin now that you have been given the "READ" mantra

“The Label”

A considerable amount of research and development goes into pesticide labeling provides useful information to the applicator, and to the OSC during a response.



What a Pesticide Label is depends on who you are….

To the manufacturer:

The label is a permit to sell.

To the federal or state government:

The label is the means to control the sale, use, distribution, storage, and sale of the product.

To the buyer or user:

The label is the source of information on how to use the pesticide correctly and legally.

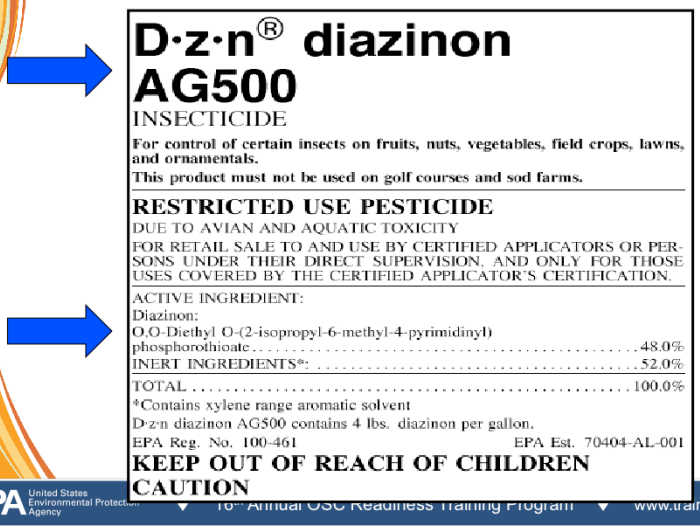
To the OSC

The label provides useful information to responders in the event of a pesticide release….but that is not the primary label purpose

Parts of the Label

1. Trade name or Brand Name & Chemical Name:

The trade name is simply the manufacturer's proprietary name.



D·z·n® diazinon
AG500
INSECTICIDE

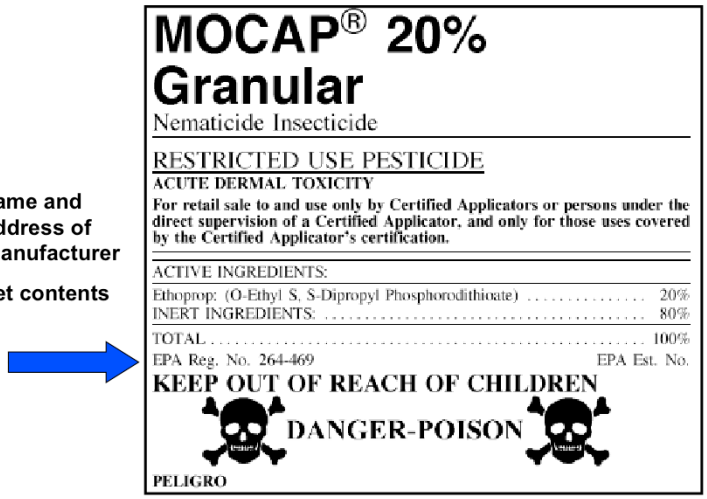
For control of certain insects on fruits, nuts, vegetables, field crops, lawns, and ornamentals.
This product must not be used on golf courses and sod farms.

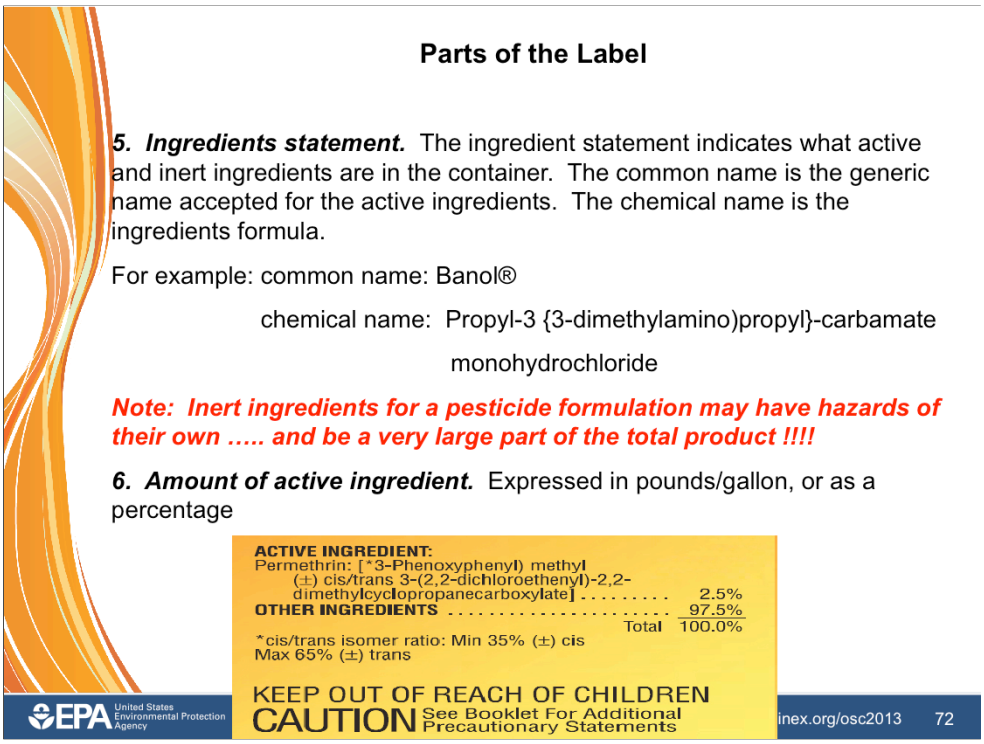
RESTRICTED USE PESTICIDE
DUE TO AVIAN AND AQUATIC TOXICITY
FOR RETAIL SALE TO AND USE BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

ACTIVE INGREDIENT:
Diazinon:
O,O-Diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate 48.0%
INERT INGREDIENTS*: 52.0%
TOTAL 100.0%
*Contains xylene range aromatic solvent
D·z·n diazinon AG500 contains 4 lbs. diazinon per gallon.
EPA Reg. No. 100-461 EPA Est. 70404-AL-001

KEEP OUT OF REACH OF CHILDREN
CAUTION

1. Name and address of manufacturer
2. Net contents
3.
4.





Note that in this partial label, the inerts are 97% of the total…VERY IMPORTANT portion of this product

Parts of a Label

Signal words and symbols. -- signal word describes level of human danger

Caution: *Slightly toxic orally, dermally, or through inhalation or causes minor skin/eye irritation.*

Warning: *Moderately toxic orally, dermally, or through inhalation or causes moderate skin /eye irritation.*

Danger: *Highly toxic and/or corrosive. One teaspoon can be lethal*

Precautionary statements.

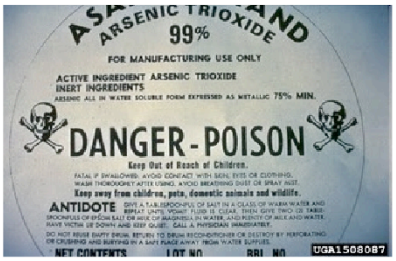
These statements usually follow a signal word to indicate the type of hazard.

Example: Danger—Poison—May be fatal if swallowed

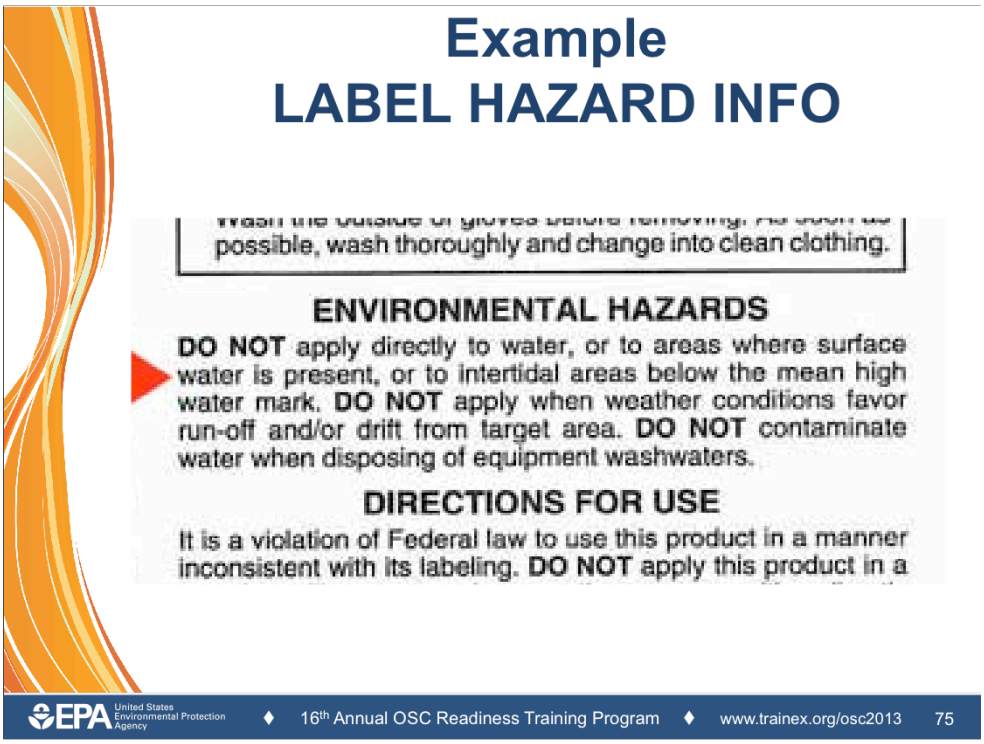
Danger—Corrosive—causes eye damage and severe burns

Environmental hazards:

This product is highly toxic to bees
This product is toxic to fish
Do not apply when runoff is likely to occur



Physical or chemical hazards. Flammable, corrosive



30 second example—OSCs relevant info from the label

OTHER STATEMENTS

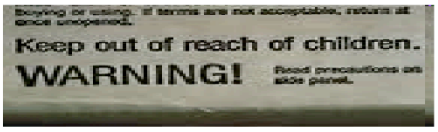
Child Hazard Warning. "Keep out of reach of children"

Symbols for highly toxic chemicals. Skull and crossbones symbol, corrosive, etc.

Statement of practical treatment. First aid treatments, eyes-flush with water, skin-wash immediately, etc.

Referral statements. Notes for physicians exposure or poisoning.

Other precautionary statements:



- Do not contaminate food or feed.
- Remove and wash contaminated clothing before reuse.

Parts of the Label

Use classification:

RESTRICTED-USE PESTICIDE

For retail sale and use only by
Certified applicators or persons
Under their direct supervision
And only for those uses covered
By the certified applicator's
Certification.

Misuse statement

Directions for use**

Reentry statement**

Category of applicator

Storage and disposal**

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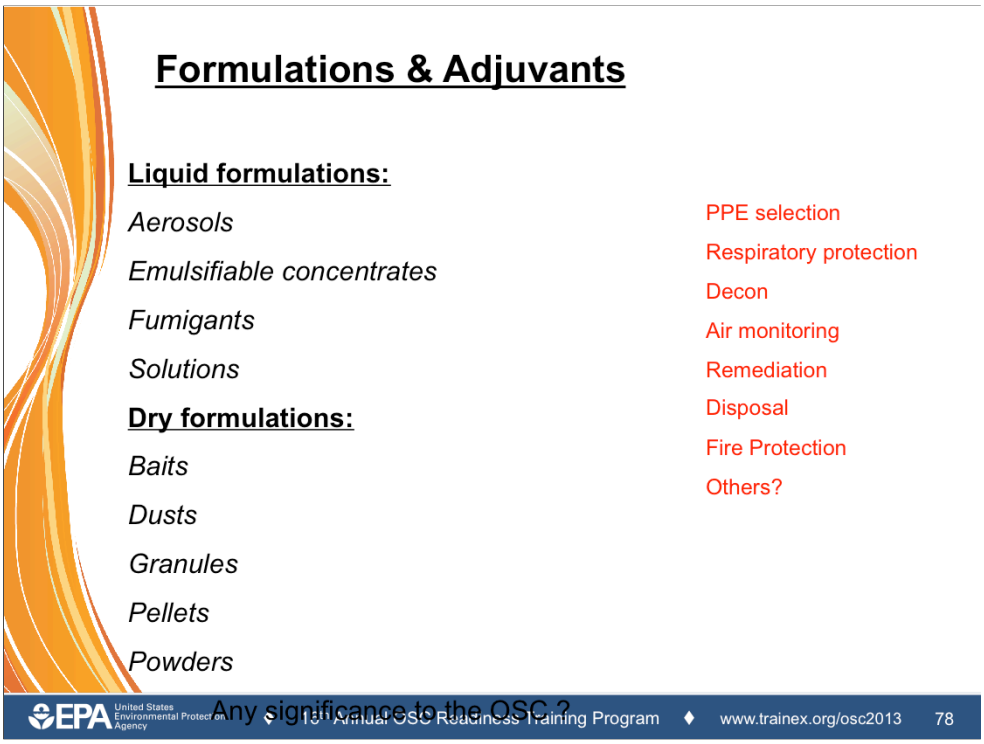


We could add

Disposal

Fire protection safety

etc

Adjuvants are chemicals added to a pesticide to enhance or modify the physical properties of the pesticide.

Surfactants

Oils

Antifoam agents

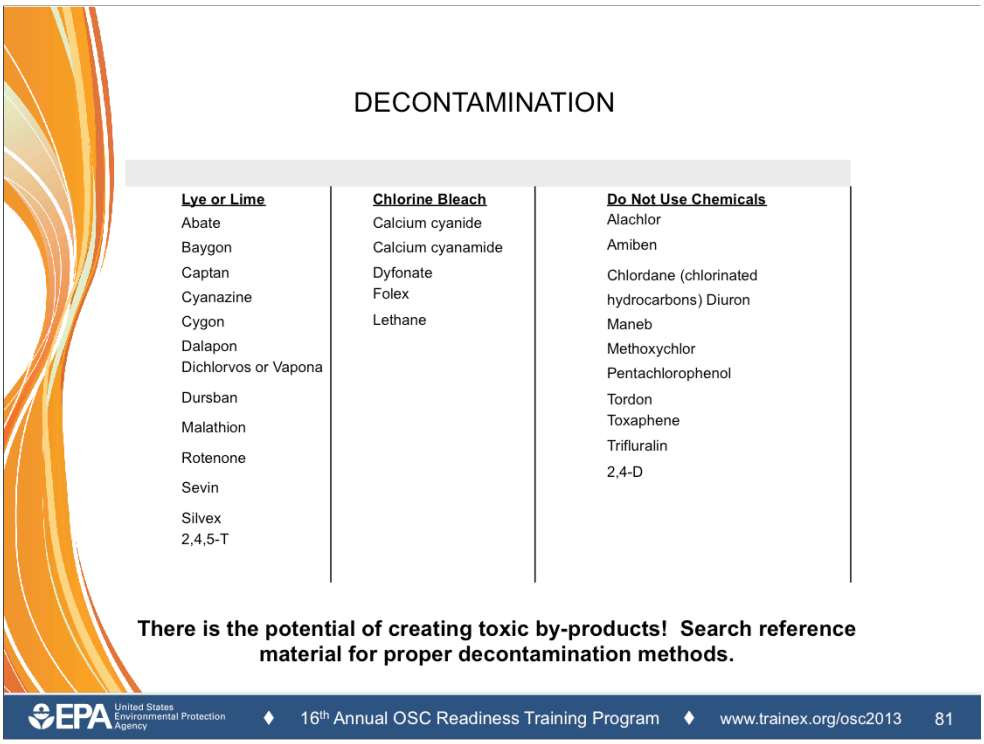
Buffering agents

Many of these formulations or surfactants have hazardous properties of their own, flammable, corrosive…and toxic.

Pesticide PPE

- Consult compatibility charts from the PPE manufacturer
- Recommendations from MSDS
- PPE should protect against multiple hazards – Inert ingredients are not always inert
- Why not the label?
- Level of respiratory protection?

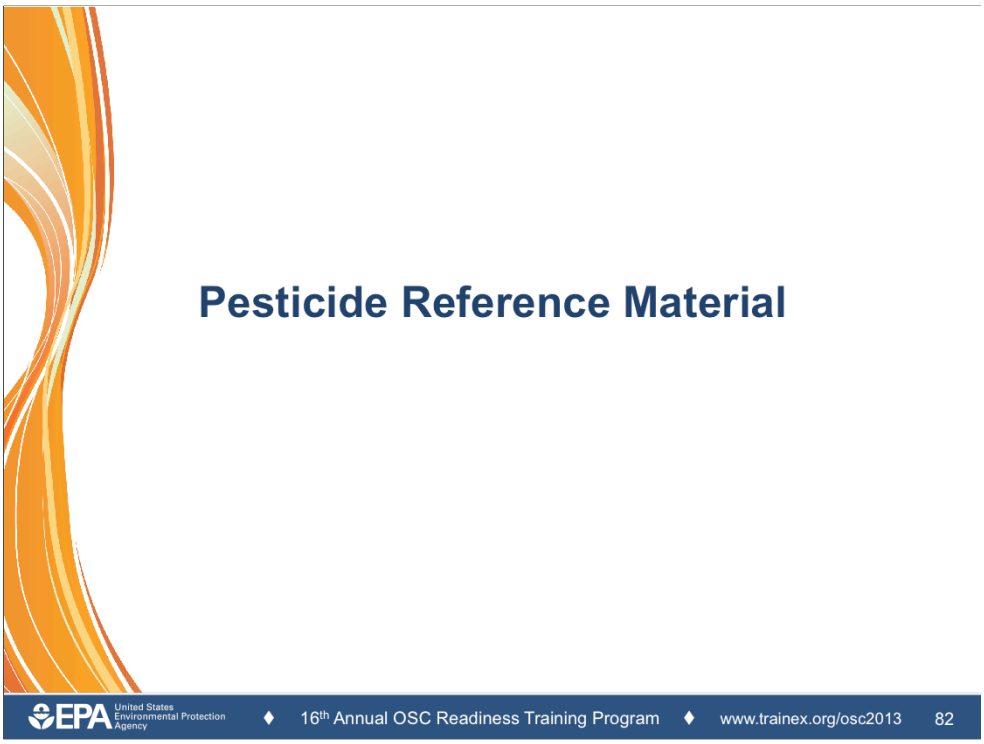
Toxicity
Fumes
Aerosols
Dusts



First column….use a basic material to decon equipment

Second Column…..use a bleach solution to decon equipment

Third column….do not use chemicals to decon equipment



Clearly there is a need for readily available technical material, as there are many thousands of different pesticide active ingredients, and formulations make a much larger number.

We want to introduce you to a few of the tech references now.

Please look at the links listed on your screen…….

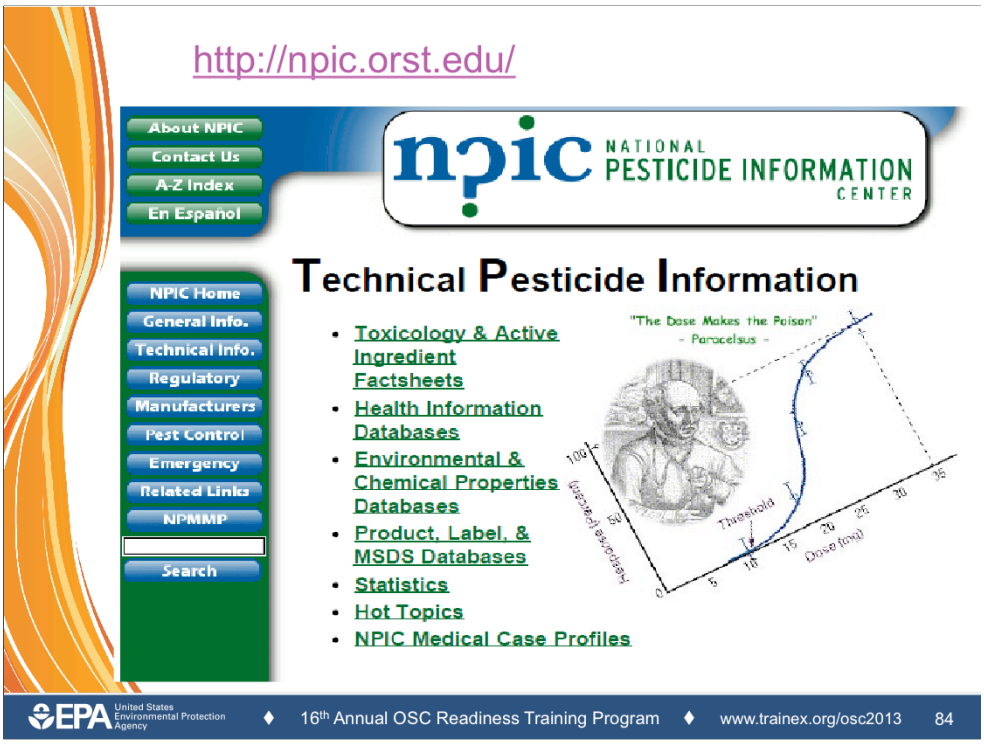
The first reference is…....a link to NPIC

The second reference is a link to the Google search engine

The third reference is a link to ……..EPA HQ Website

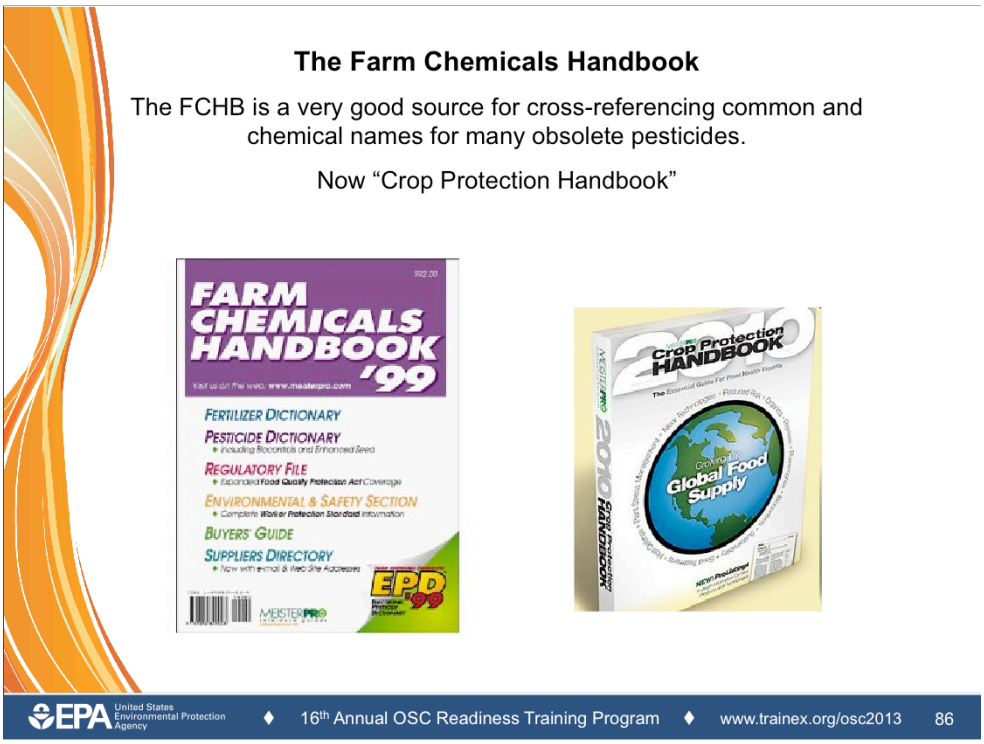
These links will be the ones we post.

http://pmep.cce.cornell.edu/profiles/index.html worked when I tried it. You must be in the “slide show” mode of powerpoint to get these links to work.



I think this one comes up now…..but am open to any order you choose

This one is next



This one is next----I could not find a link that did not charge for online use.

This is available in hard copy and online. Online versions may have a charge for use.

We have an example entry on a slide coming up from Farm Chemicals Handbook

The Label and MSDS are great sources of information available to users and responders for products in use today.

So now what?

This is a partially destroyed label that is not fully readable. Not uncommon for EPA to encounter such conditions (or worse) in the field. Should we blow this up a bit on an added slide?

Here is a closer view of the label

Look a bit further down the label…..2,4,5-T and 2,4-D For control of woody plants

So this is a herbicide

The active ingredients are a mixture2,4,5-T and 2,4-D

We can get info on the active ingredients from tech references.

Can we get any info on the "inert ingredients"? Flammable?

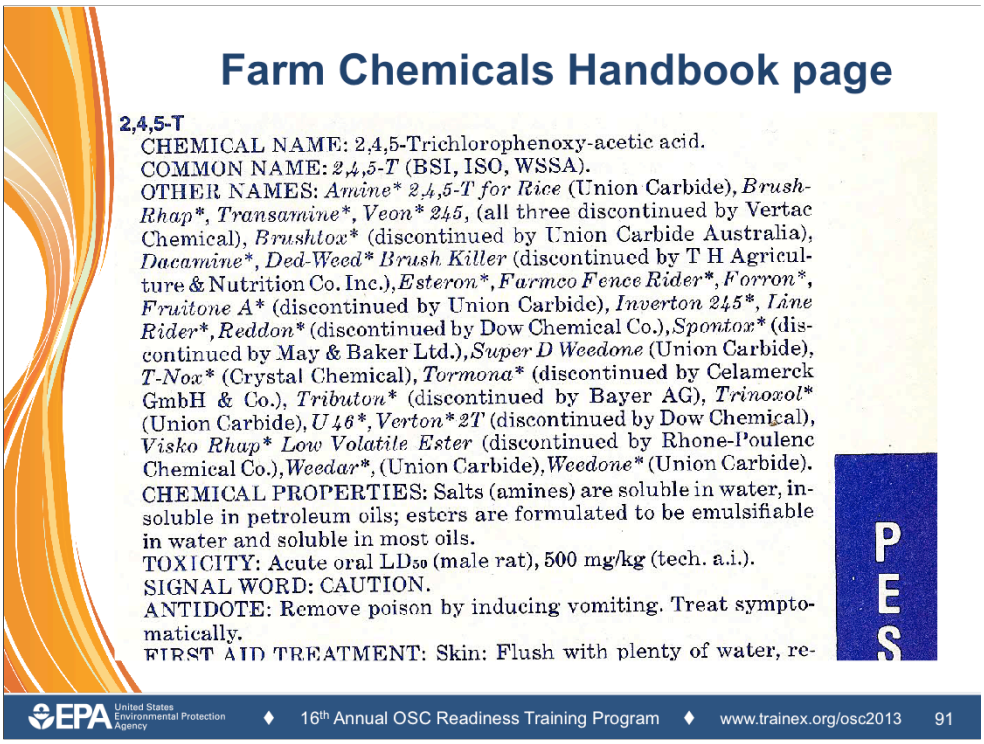
Use links provided.

You can rather quickly ascertain what sorts of safety precautions are in order using these tech references

Use the links …….try NPIC

Then try Google

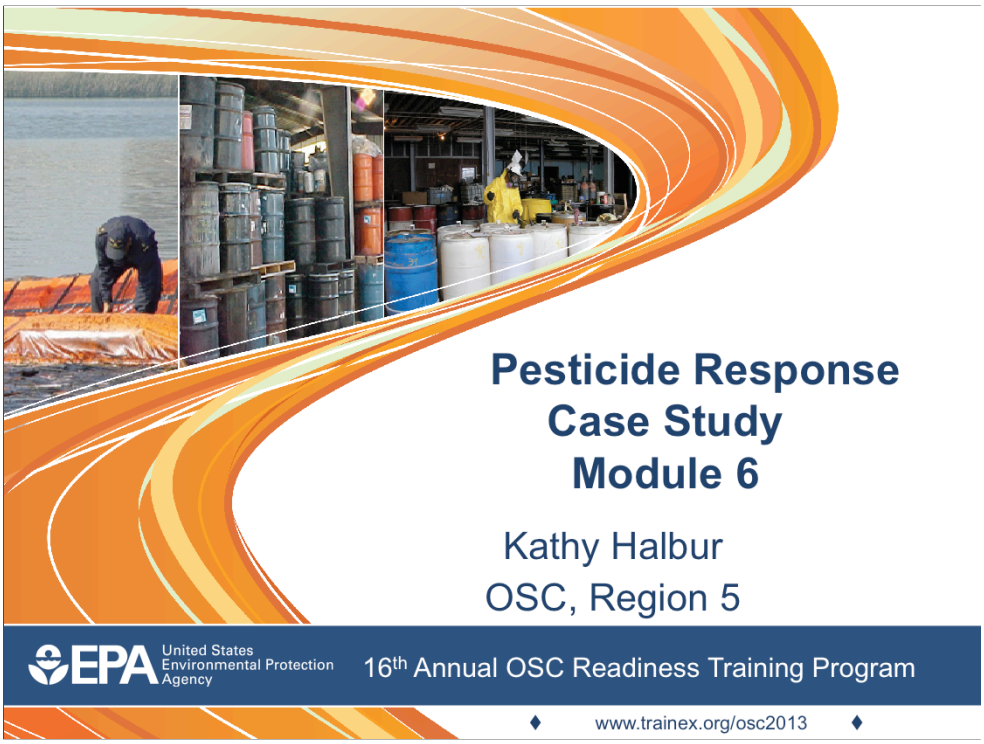
Farm Chemicals Handbook…….older editions may be better.



This was 1986 version of FCH, and in hard copy it cost $46.00

Partial page—not shown are other headings including "Handling and Storage"; "Application", "Formulations" and a chemical formula for the active ingredient.

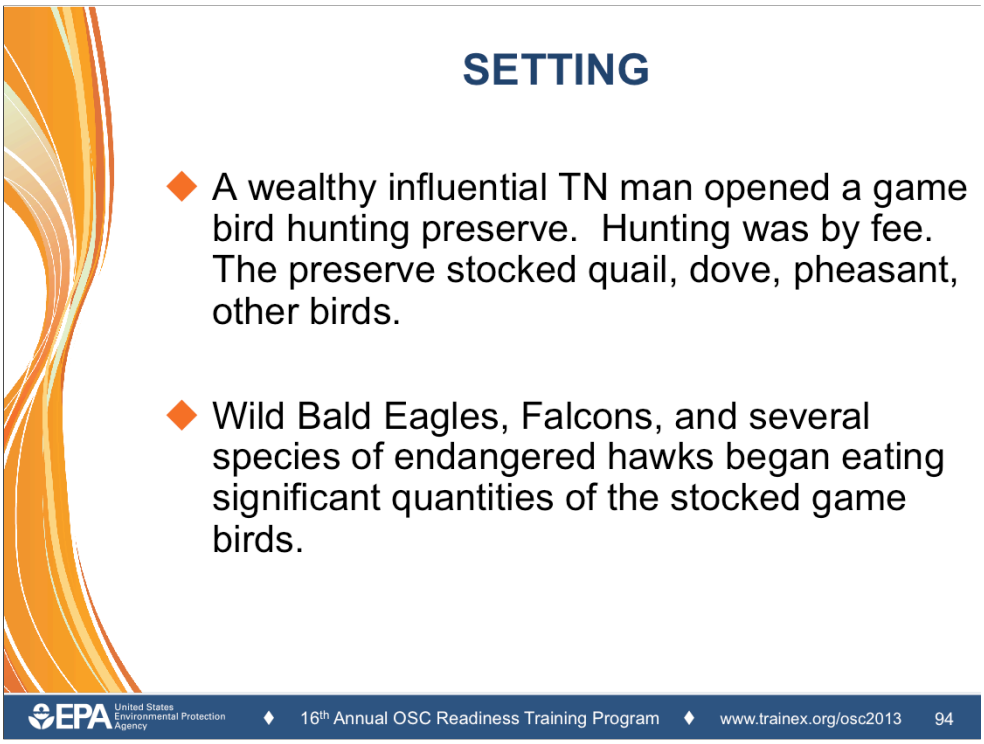
QUESTIONS ?



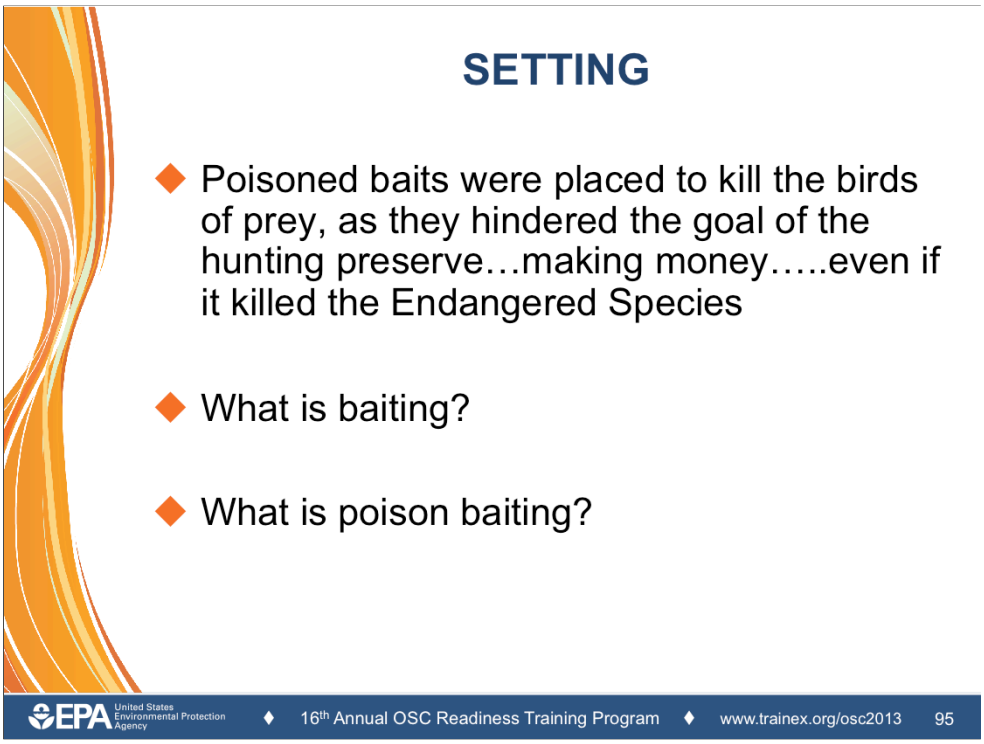
This fictional case study is about a Criminal Investigation of illegal use of pesticides for wildlife "baits" .

This is an unusual situation for an OSC, as the Removal program is operating as an "agent" for CID in a FIFRA case. The OSC role is not the classic SF/OPA model.

You should get an exposure to working with EPA CID and to pursuing a criminal case gathering technical data for evidence.



This case study is fictional. The training highlights that are important to EPA OSCs are based on real as well as fictional settings. Some FIFRA cases may be very grisly!

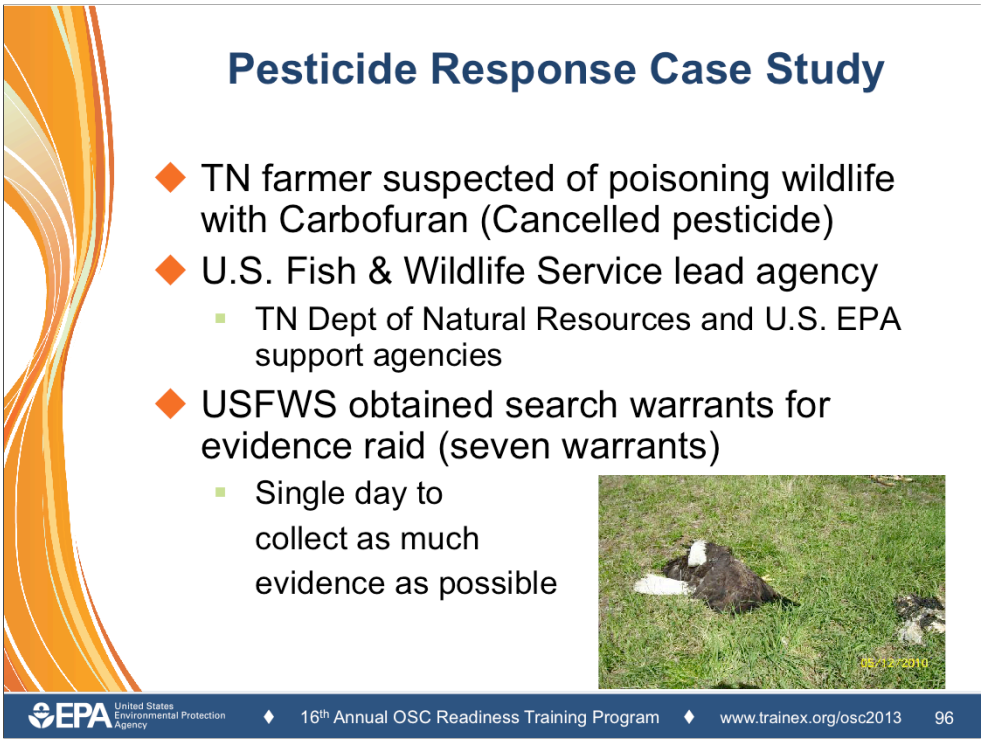


Baiting is generally providing an artificial food source for an animal

Poison may be added to the bait to kill or harm the animal consuming the bait.

Poison Bait Advantages : Easy, cheap, effective killer, that does not require humans "on site" (like shooting) . There are a "legal baits" such as rodenticides…like rat poisons. **Here the herbicide is misused, a clear label infraction**.

Poison Bait Disadvantages: kills non-target species, illegal if the product label is not followed (exactly.).



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Use a reference source now …and in 3-4 min give me some technical info on Carbofuran

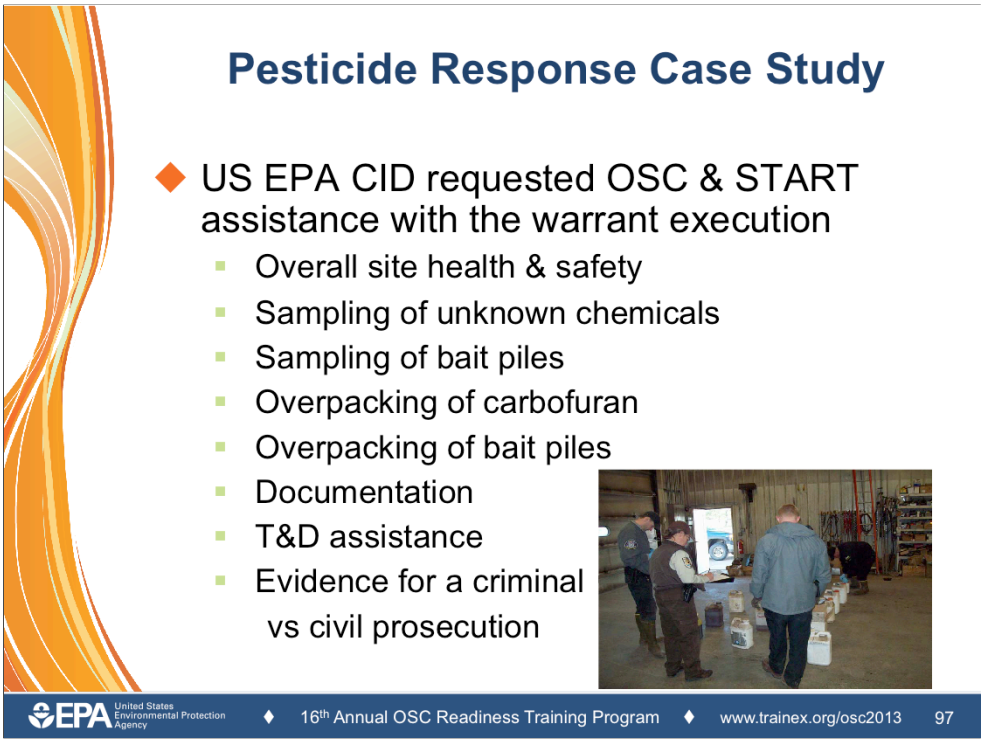
determine the EPA status of the pesticide. …all students look it up..Cancelled\? Suspended? 4- 5 min exerciise that all OSCs would go thru on any such Red phone call.

What is the label (law) actual violation?

Looks like a criminal case….who does OSC need to contact on this case?

Is general communication limited ? To whom? How strict is the comms?

Why does search warrant last only 1 day? Seems short time…how about 3 days?. Access/search & seizure is a matter of US Constitutional law. (4th amendment). Judges are VERY specific about warrants. Almost always short duration and quite specific in what law enforcement seeks to find.



This has some similarity to a classic EPA drum cleanup. Unknowns in containers or on bait

Ask a student for a short explanation of each element

HASP

—because it very toxic..PPE protocols need to be tight

What is "Baiting?"- very bad way to kill animals…may be slow and painful—illegal and immoral for most folks

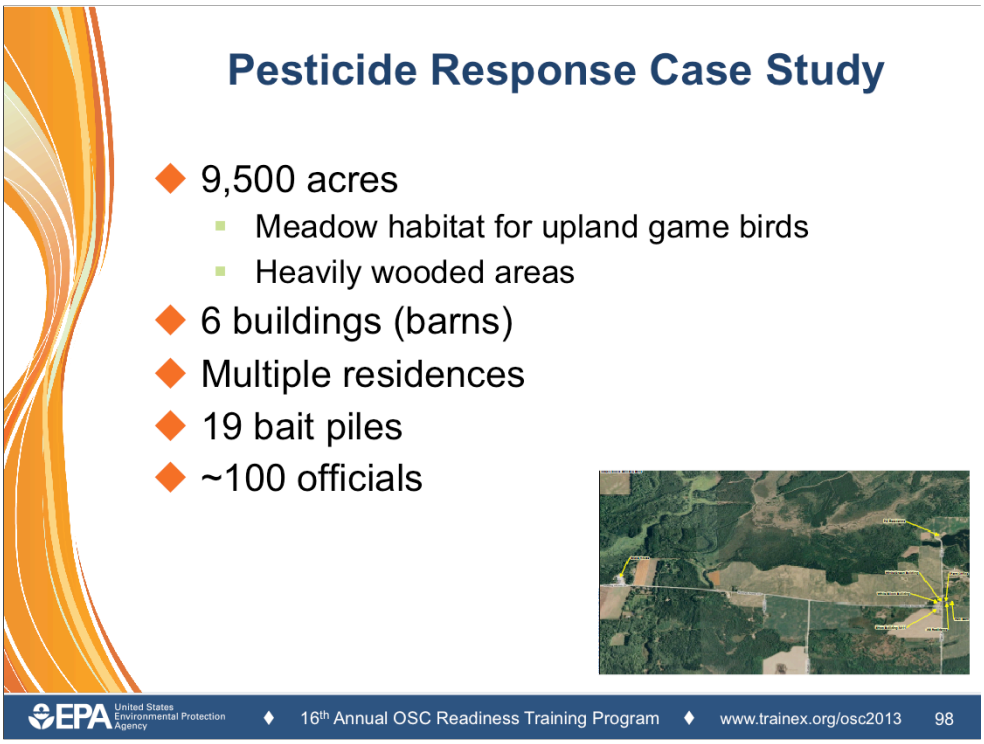
What kind of Samples will make good direct evidence?

Over-packing & doc & T & D---chain of custody In legal case

Evidence for a criminal prosecution has to be "beyond a reasonable doubt" Might put this at about 90% certainty

Evidence for a civil prosecution is "preponderence of" -- 51% certainty

http://www.abcbirds.org/abcprograms/policy/toxins/profiles/carbofuran.html

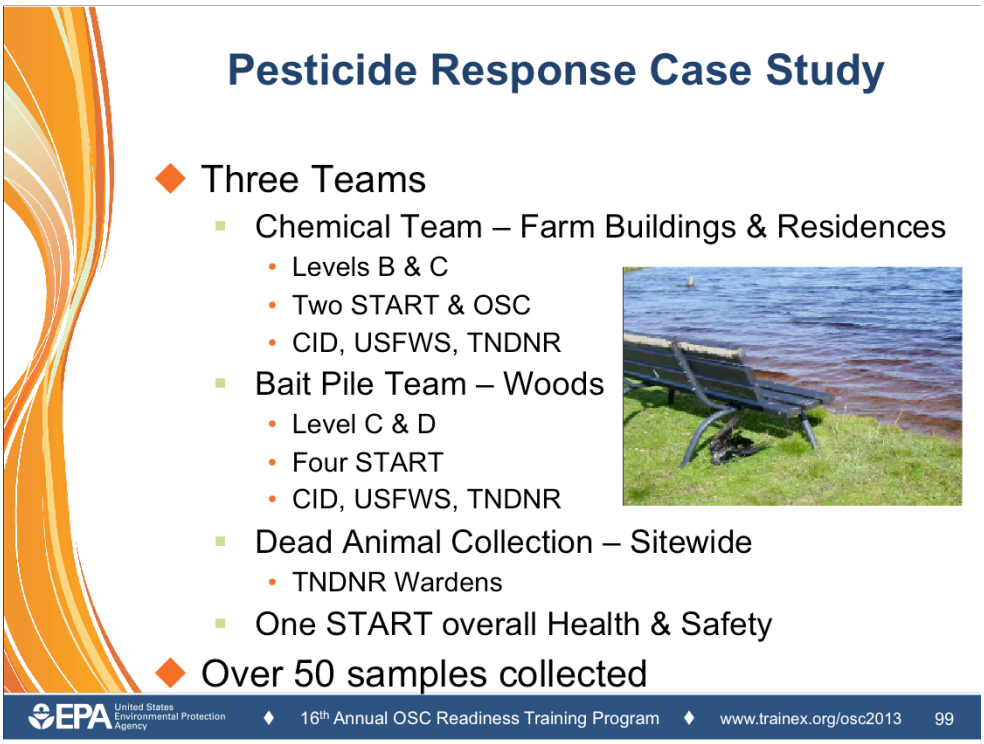


100 people knew of 14 bait piles—big case. Residences involved (danger)

In NJ they say 3 men can keep a secret….as long as 2 of 'em are dead. Bait piles w/ carbofuran---what animals were these folks trying (illegally) to kill?

According to this url—lots of birds of prey killed by this style of baiting.

http://www.abcbirds.org/abcprograms/policy/toxins/profiles/carbofuran.html



How the response (CI) was organized

CID lead and OSC/START tech support-make this clear

Dead animals– evidence---50 samples is a lot for a case like this….other Regions might use 25 (or 100) samples)

What is the oral and dermal LD50 for carbofuran? **Answer:**The oral LD50 is 5 to 13 mg/kg in rats, 2 mg/kg in mice, and 19 mg/kg in dogs. The dermal LD50 is >1000 mg/kg in rabbits, [5]. Ld0 varies with exposure rount and test animal…but is low (quite toxic

How are you going to find out? http://extoxnet.orst.edu/pips/carbofur.htm

Is that info in the HASP?

WHY NO STATE AG? THEY HAVE THE LAB EXPERTISE AND THE STATE VET. Discuss. WHY NO EPA FIFRA FOLKS?

Answer: CID –loose lips sink ships, FIFRA might have been helpful

FIFRA is the only env fed statute where the recognized objective of the product is to introduce it into the environment with the clear intent to kill (plants or animals).

Pic explanations

Pesticide Response Case Study

- Issues:
  - Authority
    - Warrants issued under US FWS authority
    - CID: FIFRA
    - Not considered a CERCLA Site (creating a cost recovery issue)
  - Extremely secretive
    - Investigation since 2007
    - TNDNR Warden undercover
    - Prominent property owner
  - Time constraints
  - Evidentiary procedures
  - Property owner and farm staff present

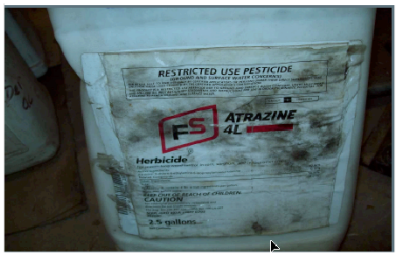
Get the access right –4th amendment to US constitution

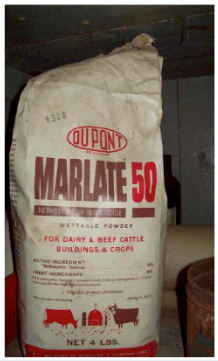
Warrants grant access (not voluntary)

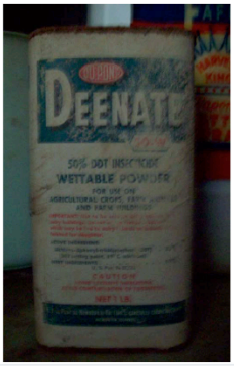
Why have the "bad guys" present?

Pesticide Response Case Study

- Issues (continued)
  - No pesticide expertise
    - State Ag Agency (TN Dept Ag) purposely excluded
    - CID & OSC – very limited FIFRA knowledge



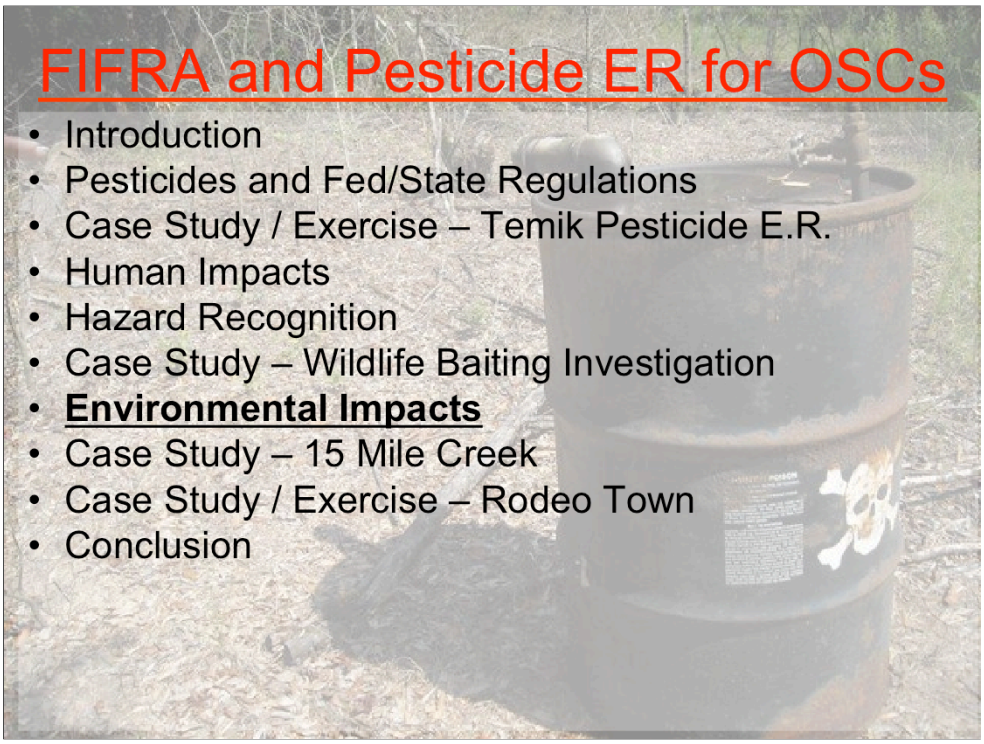




Dept Ag, OSCs, START are the only tech savy folks present

What kind of deeply twisted person would do this?

Read from Tech literature how animal will die/suffer



Pesticide Course Agenda – 2013


Pesticide Environmental Impacts

Pesticide Environmental Impacts

- Normal application of pesticides
  - spray,
  - dust,
  - fumigate,
  - aerosols,
  - gases,
  - Biocontrols
  - Etc.

- Result – broad environmental dispersal

Pesticide application is a broad and diverse matter…highly variable application dependant upon pesticide. This means that all environmental media may be affected. Give example of each

Spray—malathion on vegetables for sucking insects

Dust-sevin dust on veggies for chewing insects

Fumigate-soils treated with methyl bromide

Aerosols-suspended ultrafine droplets or particles

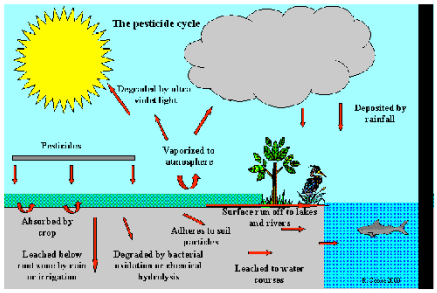
-Bacillus thuringensis-cabbage lopers

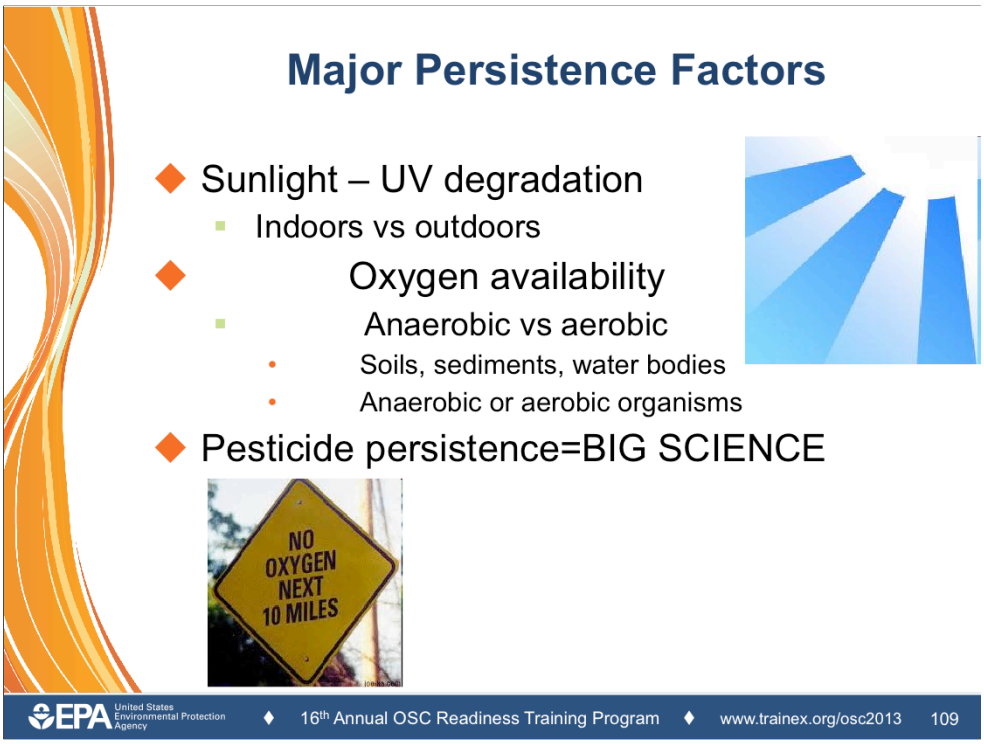
Etc

This is the deliberate placement (broad dispersal) of chemicals (or agents) into the environment…very different from traditional goals of SF actions….to keep chemicals out of the environment.

What happens to "Leftovers"?

- Unintended targets
- Residual-**NOT** helpful
- Degradable
  - Bacteria/fungi readily decompose
  - UV, Hydrolysis, oxidation, etc
  - Non-halogenated
- Persistent
  - Bacteria/fungi do NOT readily decompose
  - Not readily degraded by UV, hydrolysis, oxidation
  - Halogenated (F, Cl, Br, I)





Persistence is defined as "stays in the environment a long time" one year? One growing season? One decade?

There are numerous factors that affect persistence. A few for OSC consideration-

UV—sunlight component (breaks down organic materials—car dash board

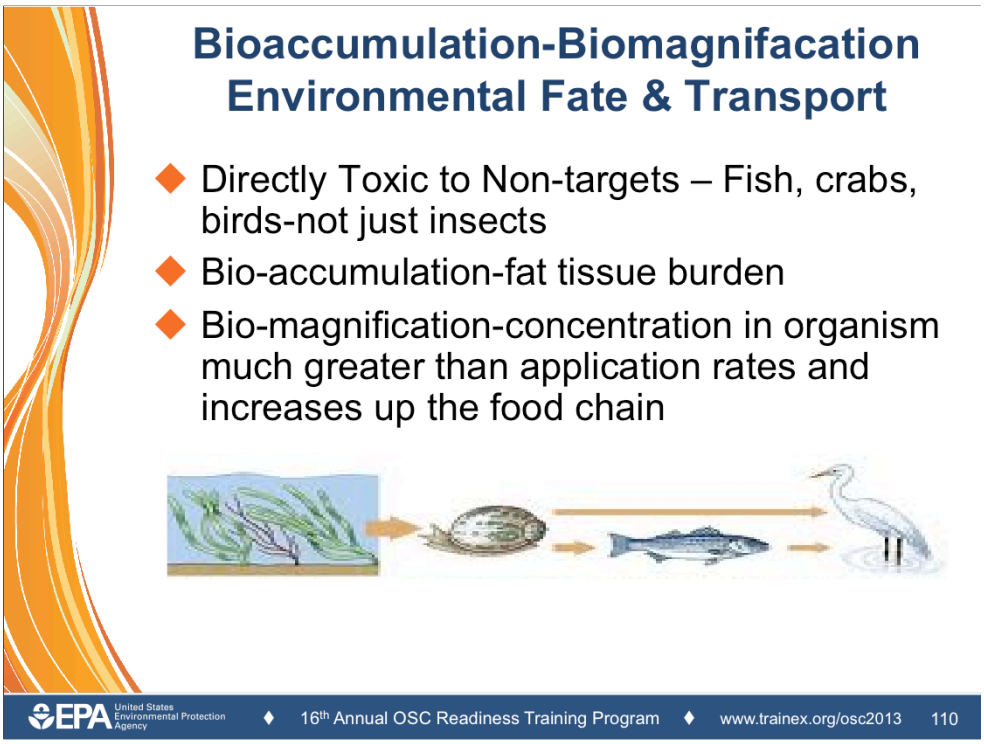
This is a major factor –methyl parathion cotton insecticide for outdoor vs indoor

Oxygen directly or biologically degrades most organics

Presence/absence of O2 determines the biota.

Aerobic organisms work fast, anaerobic more slowly (general expectation)

The issue of pesticide persistence is a well studied scientific field of study. complex



Some lessons were learned from indiscriminant use of DDT & other chlorinated hydrocarbons. pointed to evidence linking them to death of **nontarget** creatures (organisms other than those that the pesticide is intended to kill), such as birds.

(1) Direct toxicity. It was discovered that DDT was toxic to fish (especially juveniles) and crabs, not only to insects.

(2) Indirect toxicity, related to its persistence. (It's persistence came in part from its insolubility, from the fact that it was a synthetic, recently introduced compound. Nature does NOT bond Carbon directly to a Halogen. This means that microorganisms, such as bacteria, lacked enzymes capable of degrading C-Cl -- basically they hadn't evolved to use it as an energy source.

The pesticide manufacturers argued that the minute amounts found in the environment couldn't possibly be killing nontarget organisms

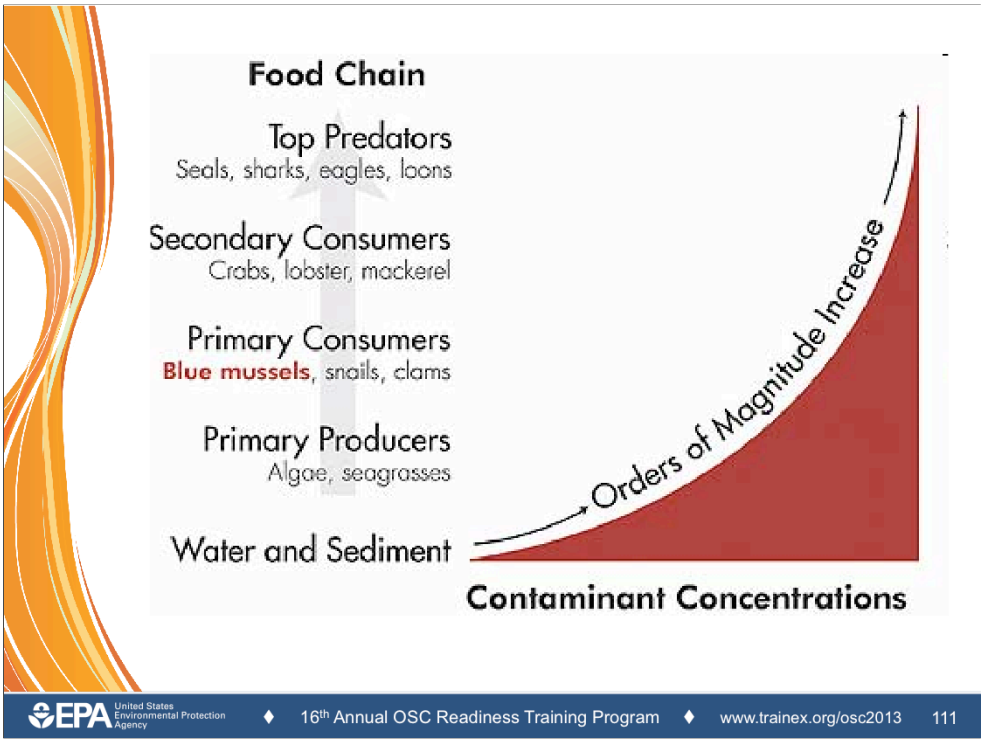
. However, some experimental work demonstrated that even small amounts of some of the pesticides could affect the survival and reproduction of some species. More important, research demonstrated that, although concentrations were very low in the soil, atmosphere and water, concentrations were higher in plants, higher still in herbivores, and still higher as one moved up the food chain.

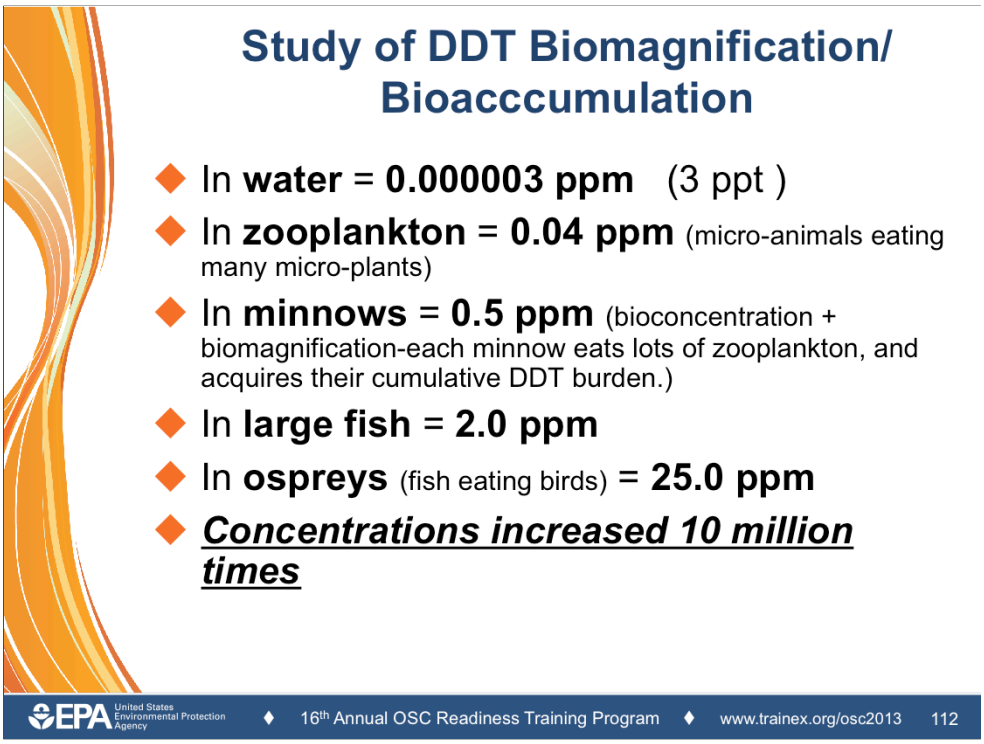
The **indirect toxicity** related to two principles :

(1) Bioconcentration – the tendency for a compound to accumulate in an organisms's tissues (especially in fatty tissues for fat soluble organochlorines such as DDT) and

(2) Biomagnification. – an increase in concentration up the food chain.

(These terms are sloppily used; sometimes "**bioaccumulation**" is also used to mean either of these, and people often use all of these terms interchangeably.)


Food Chain
Top Predators
Seals, sharks, eagles, loons
Secondary Consumers
Crabs, lobster, mackerel
Primary Consumers
Blue mussels, snails, clams
Primary Producers
Algae, seagrasses
Water and Sediment
Orders of Magnitude Increase
Contaminant Concentrations



DDT is the most famous (infamous insecticide), and a well studied one. Historical research is presented to illustrate an environmental trend.

Because DDT was (is) persistent, there was abundant opportunity for it to be taken up from the environment by organisms. For example, in the estuarine ecosystem next to Long Island Sound, the following concentrations of DDT were found:

In **water** = 3 ppt (**0.000003 ppm**)

In **zooplankton** = **0.04 ppm** (bioconcentration and biomagnification from eating plants)

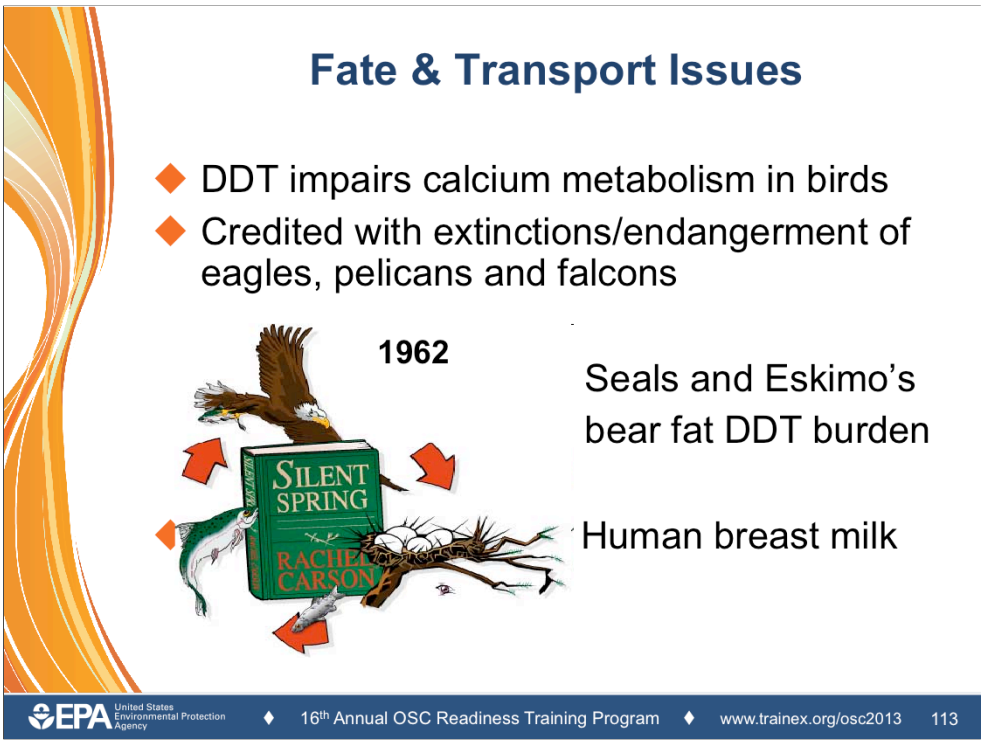
In **minnows** = **0.5 ppm** (bioconcentration + biomagnification) (Because of the inefficiency of energy transfer, each minnow has to eat lots of zooplankton, and so acquires quite a burden from them.)

In **large fish** = **2.0 ppm**

In **ospreys** (fish eating birds) = **25.0 ppm**

Thus, concentrations had increased 10 million times up this progression, largely because of biomagnification.

This is a fundamental environmental fate and transport trend true of chlorinated hydrocarbons and the food chain



These concentrations were not directly lethal to the highest order carnivores, but did impair their reproduction. DDT (actually, its breakdown product DDE) reduced the deposition of calcium in eggshells. The birds thus produced thinner shell that cracked more readily during incubation.

The populations of many predatory populations (the highest order carnivores), such as bald eagles and brown pelicans were nearly eliminated. The peregrine falcon disappeared in the eastern US as a result of reproductive failures by the 1960's. (hence Rachel Carson's title "silent spring" alleges one future spring season, no birds would sing

DDT (as DDE, a breakdown products from DDT) also appeared in the fatty tissues of seals and Eskimos, far from any area of use, indicating that, because of its persistence, it was being **transported for long distances** in the atmosphere and then being washed from the atmosphere by rains. It also showed up in human breast milk at remarkably high concentrations -- so high that the milk couldn't legally be sold through interstate commerce if it were cow's milk! DDE is the most widespread contaminant in human milk around the world

Pesticide Spill on Ag Land
CERCLA – FIFRA roles

- Farmer Jones applies 2,4-D-based herbicide on his wheat crop to control broad leaf weeds
- Jones follows label instructions for dilution of concentrate—0.25% active ingredient 2,4-D or 2500 ppm 2,4-D
- Overspray results in soil residual

2,4-D is a herbicide that works by functioning as a plant growth hormone analog in broad leaf plants. It is widely used for control of broadleaf weeds in monocot crops (low effect on many grasses). The objective of the spray is to cover the foliar surface. Any that runs off or misses the leaves is overspray. Some overspray hits the soils and analytical tests reveal some residual in the soil of Farmer Jones wheat fields.

The label instructions are followed

CERCLA vs FIFRA

- Accident spills 2,4-D tank in wheat field
- OSC Guy Smiley responds
- "Hot spot" at spill
- Background 2,4-D -field soil 30ppm to 1800ppm
- How much soil cleanup needed?
- What is State Dept of Ag and Forestry (SDAF) opinion of situation?
- Does FIFRA or CERCLA apply? To what?

Farmer Jones has a tractor and spray rig overturn and spills the herbicide tank in one area of the field…big mess!

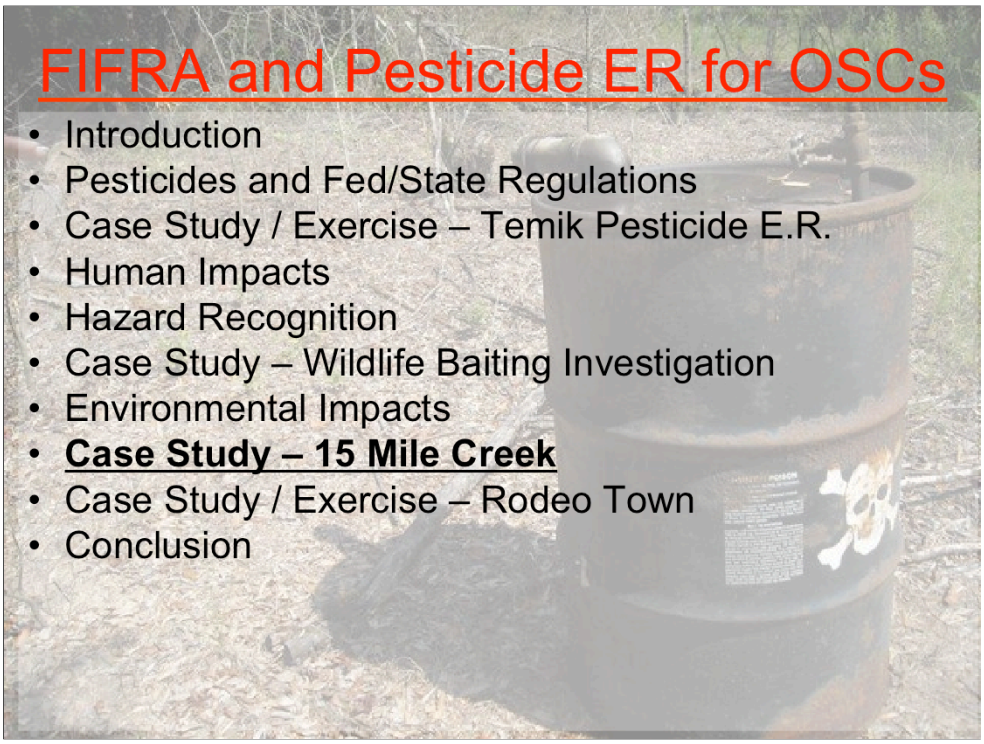
OSC Smiley finds a concentration hot spot (visible stain), and collects 6 background samples from widespread areas of the 40 acre wheat field. The average 2,4-D concentration of the 6 background samples is 1800 ppm.

SDAF can likely help here….dan/bob---tell me how DAF could react.

Which statute applies? To what parts of the field?

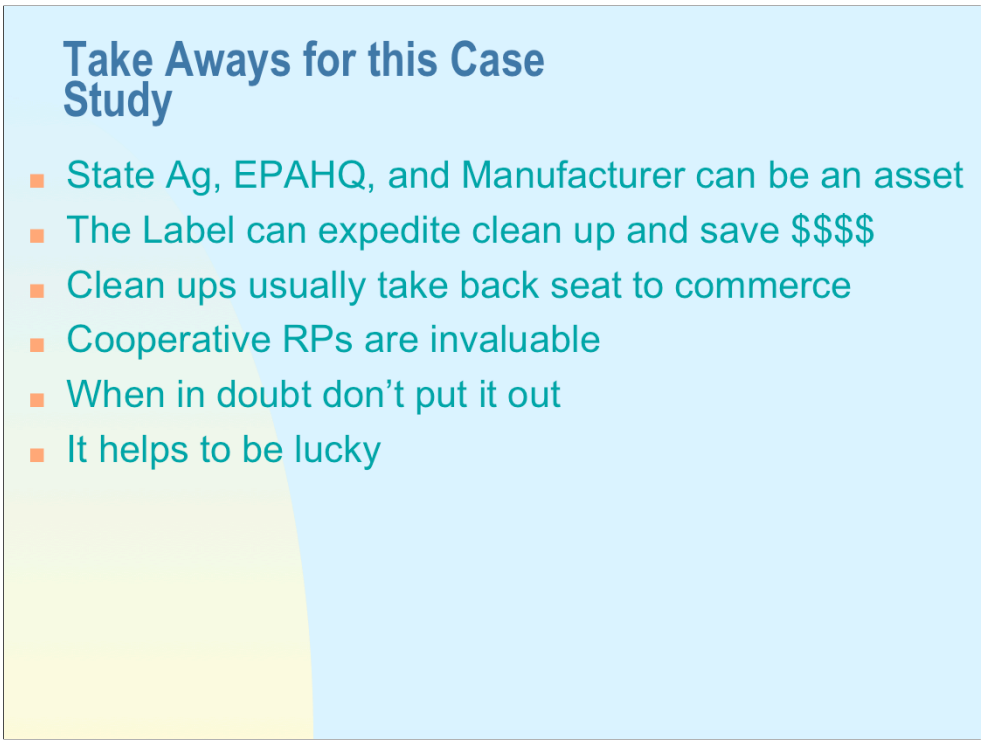
Got a buddy at SDAF?


Questions & Answers



Pesticide Course Agenda – 2013

Fifteen Mile Creek Herbicide Spill, The Dalles OR, 8/22/00



The worst time to make friends is when you need them.

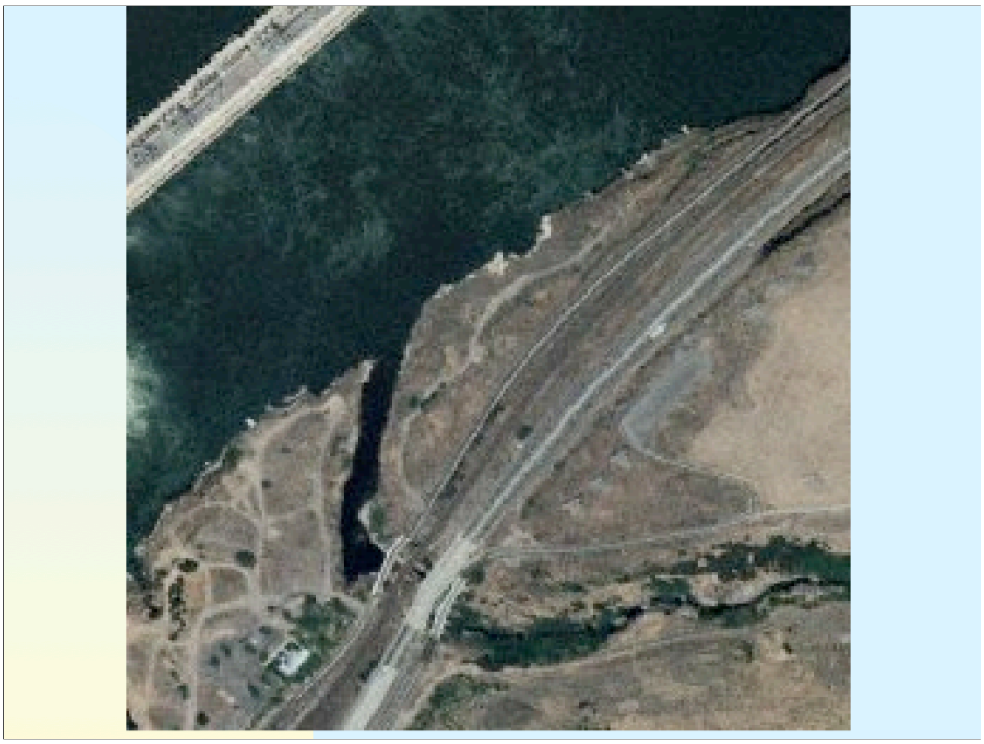
The Incident and Fire

August 22, 2000 at 4:36 AM

- Un-placarded tractor trailer heading west on I-84 goes out of control
- Over half the load goes off the north side of Fifteen Mile Creek bridge
- Fire Dept. responds at 4:56 AM to call from driver stating there is a “small fire”

The Incident (cont.)

- Upon arrival tractor on I-84 and trailer contents below the bridge are fully engulfed
- Gresham Haz Mat called in, I-84 closed in both directions
- Fire allowed to burn out; no water
- FOSC, START, SOSC, and FOSS allowed to enter spill area at 3:30 PM



Multi modal transportation complications, Creek much higher in photo than at time of spill.

THE RELEASE

- Of the 4140 gallons (1656, 2.5 gal.jugs) of Goal 2XL on board:
- 570 jugs in tact on I-84 with14 leaking
- 25 full and 80 ruptured jugs in the creek
- Total of 1047 jugs (2617 gallons, approx. 20K lbs.) burned or spilled

THE RELEASE (cont.)

- Approx.400 yds of creek impacted from I-84 bridge to Columbia River, the creek had a very low flow at the time of the incident
- All aquatic life killed in affected area (trout, lamprey, crayfish, invertebrates)
- Unknown quantity released to Columbia River (no apparent fish kill)

Goal 2XL, by Rholm and Haas

- Halogenated pre-emergent and post-emergent commercial grade herbicide
- Active ingredient *Oxyfluorfen @ 22%
- *(2-chloro-1-[3-ethoxy-4-nitrophenoxy]-4-[trifluoromethyl] benzene)
- ***Inert*** solvents: Naphtha (51%), N-Methyl-2-pyrrolidone (9%) Napthalene (8%)
- Hazardous chemical under 29 CR 1910.1200, immediate and delayed health hazard.

Goal 2XL (cont.)

- Class 3 Carcinogen
- Goal 2XL not a RCRA regulated waste, treated as pollutant and contaminant.
- Oxyfluorfen is extremely toxic to aquatic life in both water and sediments
- Oxyfluorfen has a specific gravity of 1.08

Oxyfluorfen Half-Life

- Water: 7 days
- Soil: 40 days
- Anaerobic Sediment: 600 days
- Fish Tissue ?

ESA and Other Considerations

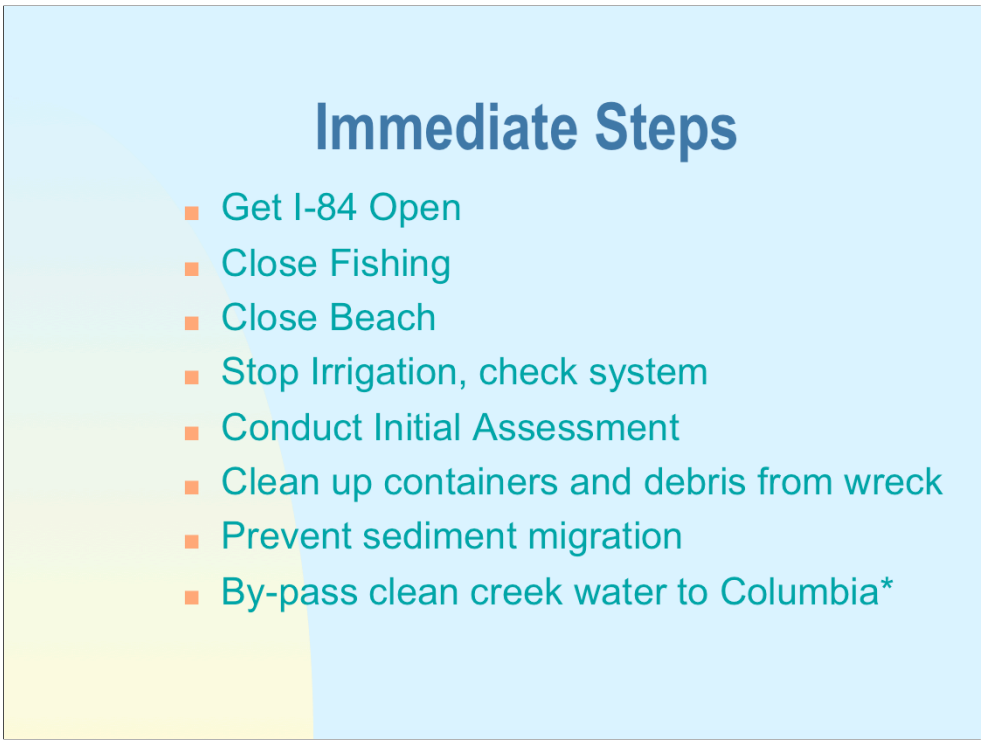
- Columbia Summer Chinook run in full swing
- Tribal gill net season to open 8/30/00
- 100 year old Sturgeon in pool at mouth of creek
- Winter Steelhead run on Creek Dec.-Feb.
- Limiting further damage to Lamprey population upstream*
- Archeological concerns

The Players

- **The RP**: Prime Trucking Inc., Springfield, MO
- **RP Contractors**:Foss Environmental, Polaris, Interfluc, North Creek Lab, Diving and Salvage
- **Feds**: USEPA*, ACoE, BPA, USFWS, BIA,
- **State**: ODEQ, WDoE, ODFW, WDFW, OHD, ODOT, OSP, ODA, WSDA
- **Tribal**: Confed. Tribes of the Warm Springs, Yakima, Umatilla, Nez Perce

The Players (cont.)

- **Local**: The Dalles Fire Dept., Gresham Haz Mat, County Health, Dalles Irrigation District, S+W Conservation District
- **Others**: Rohm and Haas, Union Pacific, Media, Fishermen (rec+ com), Columbia Barge Assoc., Local Growers (upstream irrigators)
- *** OSCs**: Dan Heister, Bill Longston, Tony Barber
- ***START**: Suzanne Dolberg, Jeff Fowlow, Dave Ikeda, Charlie Gregory



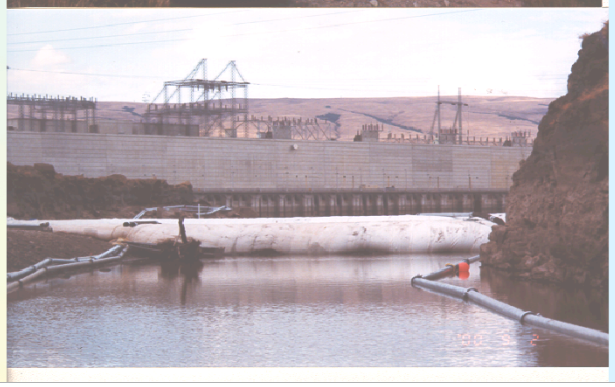
State Ag worked with grower groups to irrigate up stream out of season to assist in manaaging water

Phase 1:

- To isolate, control, and manipulate water in each Zone to prevent contamination of the adjoining Zone, while minimizing waste water generation.

The Damn, I Mean the Dam

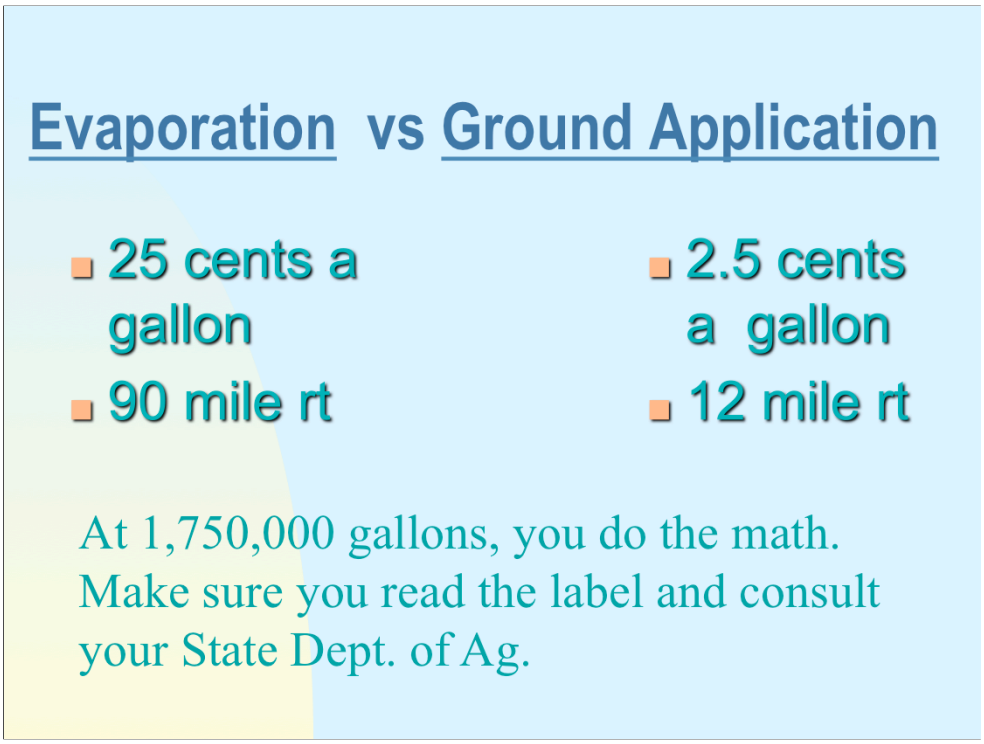
Water Weenies, Sandbags and the Great Tube



Hog and Haul

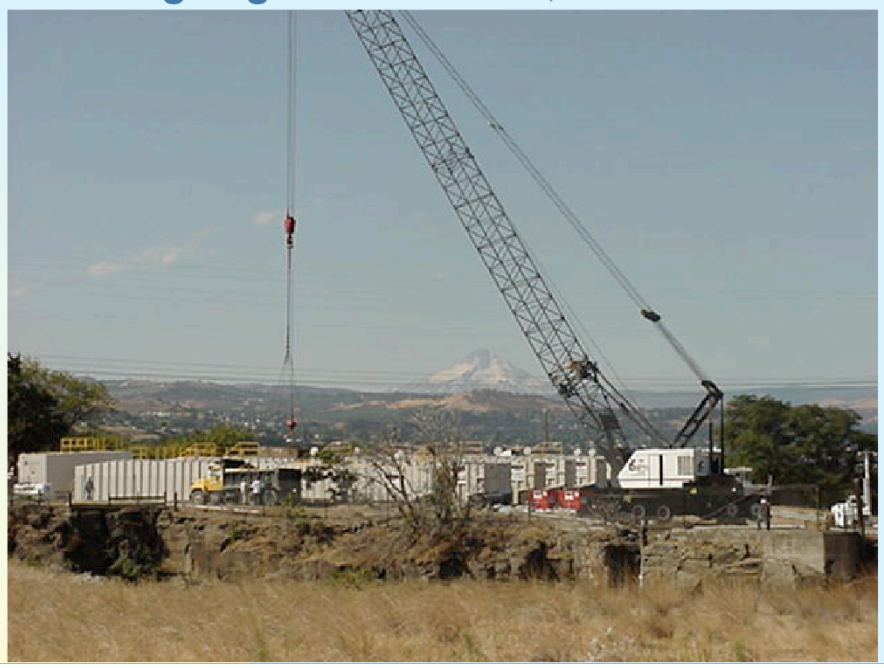
- **Pro's**
- Get in and get out
- More certain and familiar
- Minimize H2O generation during sediment extraction

- **Con's**
- Resource intensive
- Vulnerable to the river level and upstream flow
- Strategically more challenging
- More weather sensitive


Evaporation vs Ground Application
25 cents a gallon
90 mile rt
2.5 cents a gallon
12 mile rt
At 1,750,000 gallons, you do the math. Make sure you read the label and consult your State Dept. of Ag.

$450K vs $44K

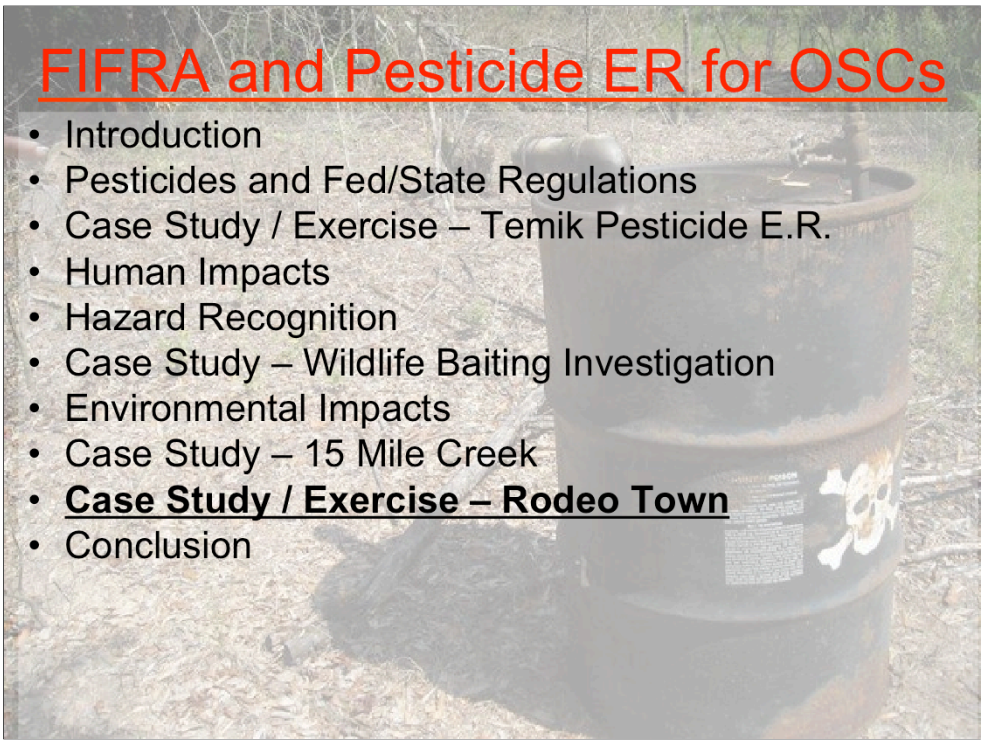
The Big Dig 9/15-19/2000, 1800 to 0600




KAISER

Tons Removed, Samples Taken and $

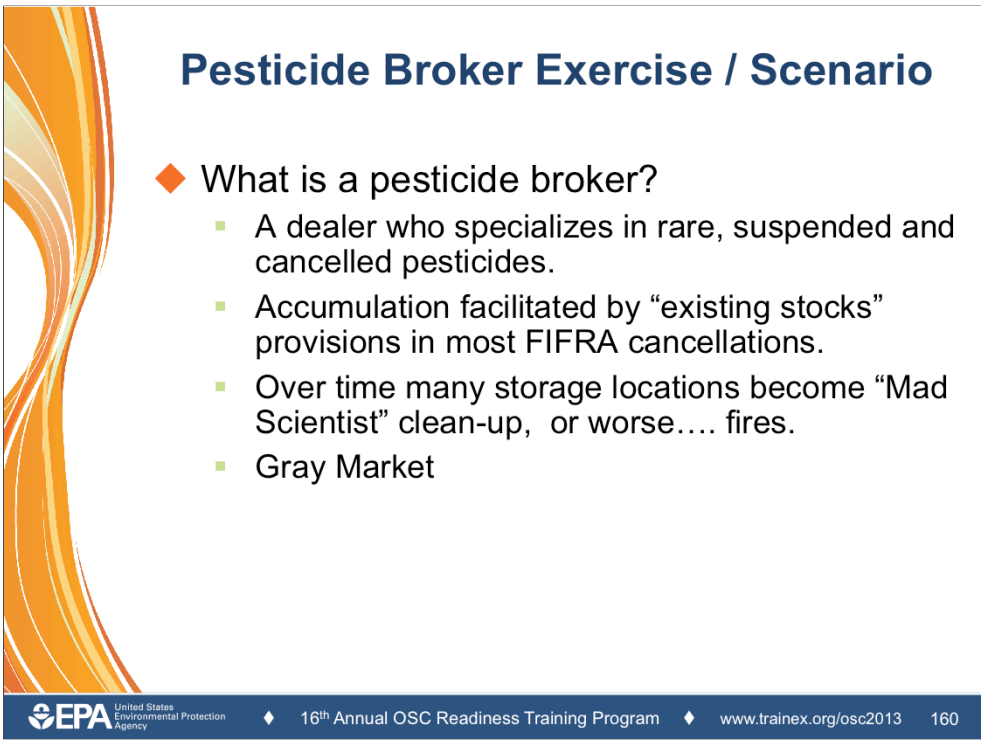
- Approximately 2000 cubic yards
- Approximately 1700 samples
- $5 million



Pesticide Course Agenda – 2013

Pesticide Broker Exercise / Scenario

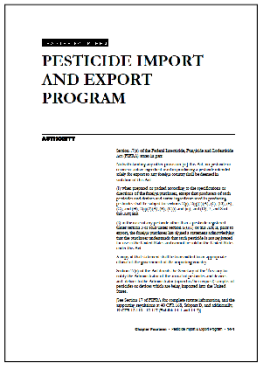
- Based on current response case
- Names/locations changed
  - Litigation under consideration
- Fact settings altered to accomplish training objectives
- Interactive questions posed
- Some (weak) humor injected



Dan does this slide

Definition of Broker?

- http://www.epa.gov/region9/pesticides/PesticideImportersFactSheet.pdf
- http://www.epa.gov/compliance/resources/publications/monitoring/fifra/manuals/fifra/fiframanch_14.pdf
- Believe it or not, some people don't always follow the law. Contempt, desperation, cost saving (greed), won't get caught, etc….



PESTICIDE IMPORT AND EXPORT PROGRAM

AUTHORITY

You can look these up later.

FIFRA (statute) does not use term "broker"---term of art

Pesticide Import/Customs Broker
Calvin Field - A Tale Of Woe

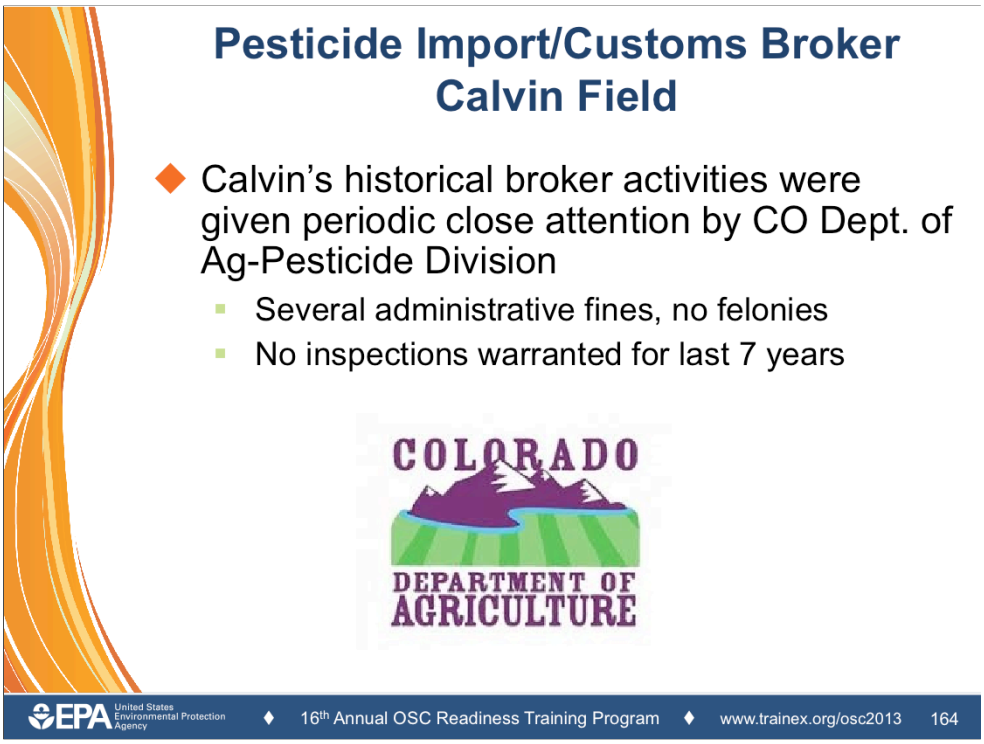
- Calvin Field - broker for many years
- Accumulated pesticides in warehouse.
- Warehouse at county fairgrounds in Rodeo Town, CO
- High desert
- Low rainfall

Rodeo Town, CO

- Normal population 2,952 (2010 Census)
- During Rodeo Roundup Festival, June 1-7, population 29,500

Biggest event of year—important to Rodeo Town

Much $$ infused into local economy



Calvin is a local "character" in Rodeo Town, was head of the Chamber of Commerce and his nephew is a long time State Rep.

Pesticide Import/Customs Broker Calvin Field

- Alzheimers-debilitated - 2011
  - Slowed brokering -2002
  - Stopped active brokering - 2007
  - Never stopped accumulating (cancelled and suspended) pesticides
  - Warehouse
    - disorganized
    - disrepair
    - Full of pesticides
    - condemned

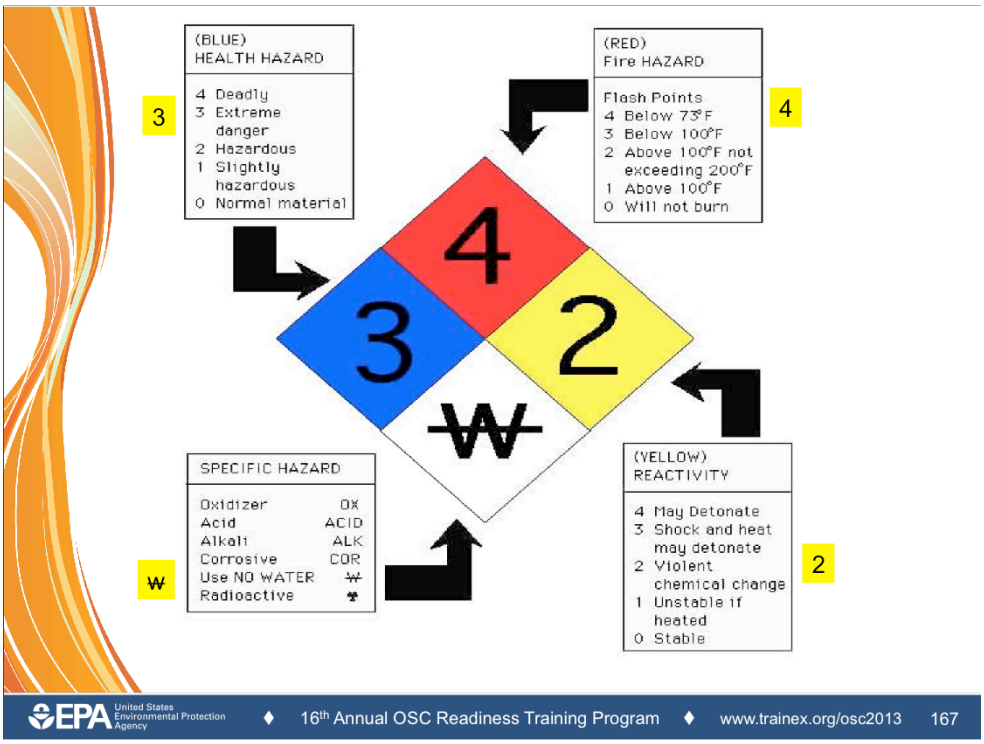
June 1--Fire Marshal Re-inspects Warehouse

- Inspection Findings (June 2):
  - Roof leaks (sheet metal destroyed in storms)
  - Many pesticide containers in disarray
    - Labeled and unlabeled
    - Damaged and undamaged
    - A few "leakers"
    - Many with this diamond
  - Does this excite the Fire Marshal?

Choices Yes No

NFPA diamond discussion? Fire Marshalls typically don't have any better grasp of pesticides than OSC's. They rely on placards, MSDS's, and bills of lading. The NFPA gives them a fast and dirty "Bad Thing" snapshot.

This is exciting because this is dangerous stuff as explained on the next slide



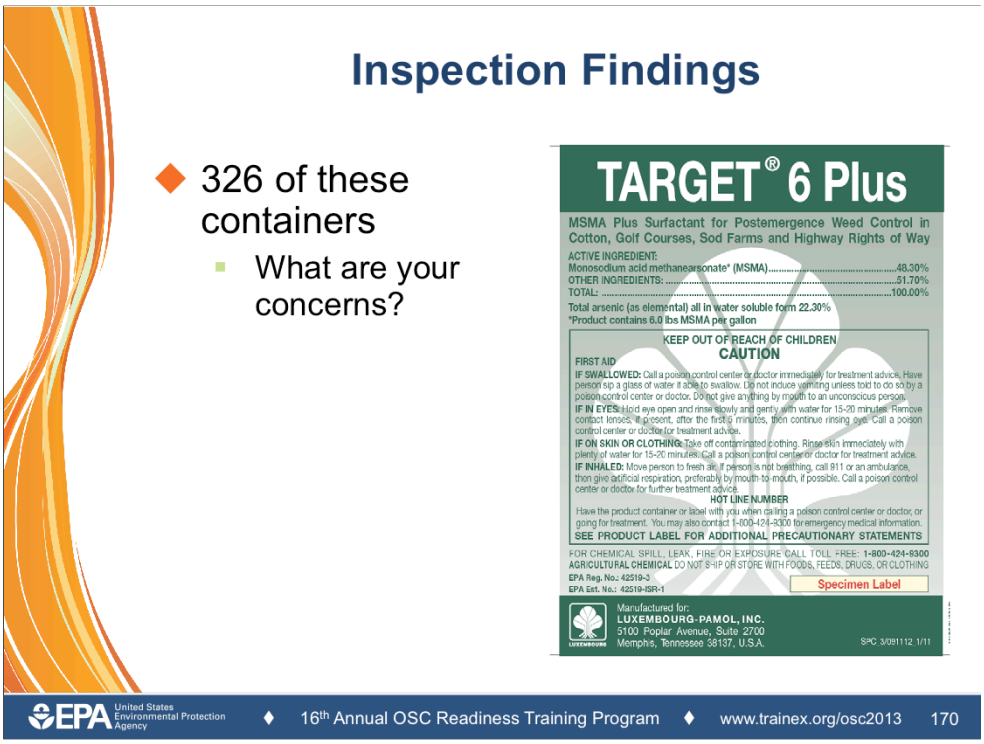
This NFPA diamond explanation came from internet. The yellow highlighted numbers beside the explanation boxes are the ones the Fire Marshal saw in the warehouse…..scared the "be-jabbers" out of him. Fire Marshalls typically don't have any better grasp of pesticides than OSC's. They rely on placards, MSDS's, and bills of lading. The NFPA gives them a fast and dirty "Bad Thing" snapshot.

Inspection Findings

- 74 Drums
  - Some leaking
  - Many with unreadable labels

Choices for Q1: Pesticide, water reactive, high toxicity, low LD50, all of the above none of the above

Individuals will answer Q2 ---no poll



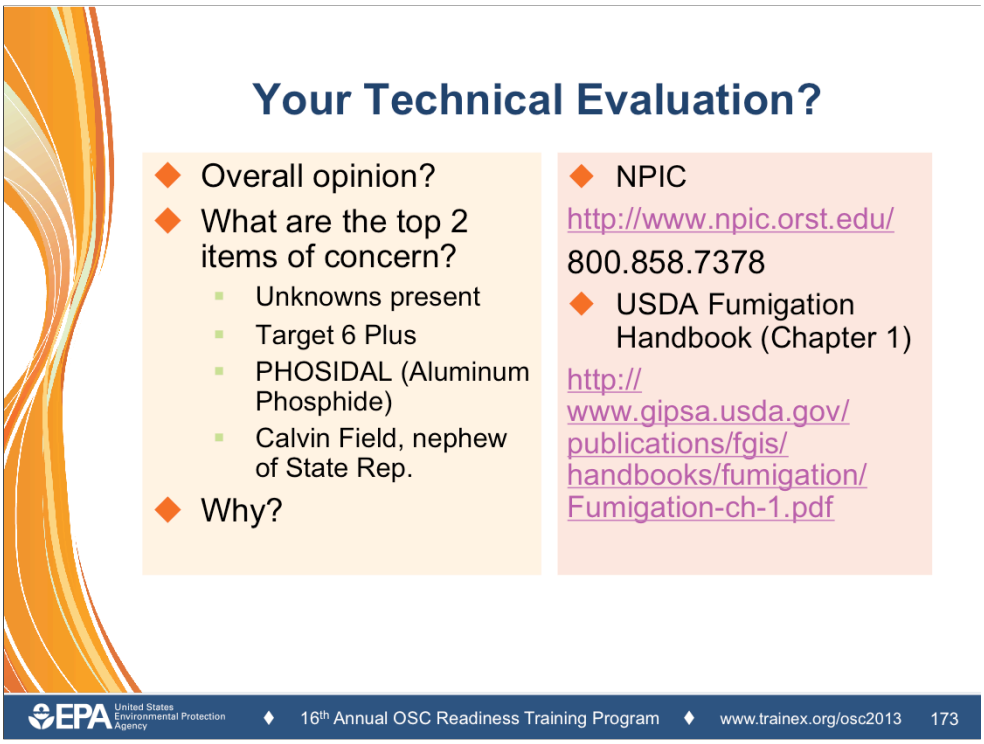
Check all that apply Choices: A: need technical data; B: significant volume present; C: manufacturer is no longer in business D : herbicide (plant poison) with no known animal toxic effects

Answer is A & B

Fire Marshall struggling to get his brain around the situation, pondering next steps. Talks to Field's wife who says the products still have value and their son is searching for a buyer. Son reportedly sold a batch when dad (Calvin Field) was admitted to the assisted living center.

Inspection Findings

- Fire Marshal requests EPA and CO Ag assistance
- Both will meet Fire Marshal on site
  - 48 hours earliest mutually-convenient time
  - June 4 (during rodeo)

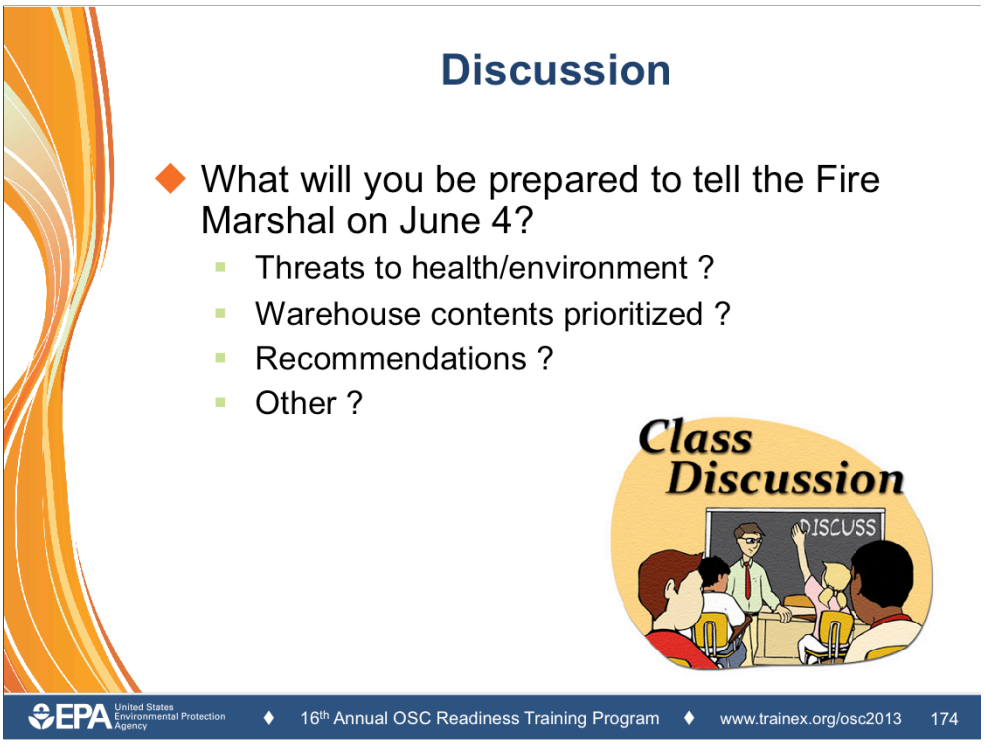


Check all that apply Choices: Unknowns Present; Target 6 Plus; Phosidal (Aluminum Phosphide); Calvin Field's political connections;

-NPIC has re-worked their home page.

-Google search for "aluminum phosphide" gives USDA fumigation handbook as one choice. Info on socks (sachets) on page 7 this reference

-Calvin Field relationships inserted for humor, but CO Ag may be sensitive to this family fact

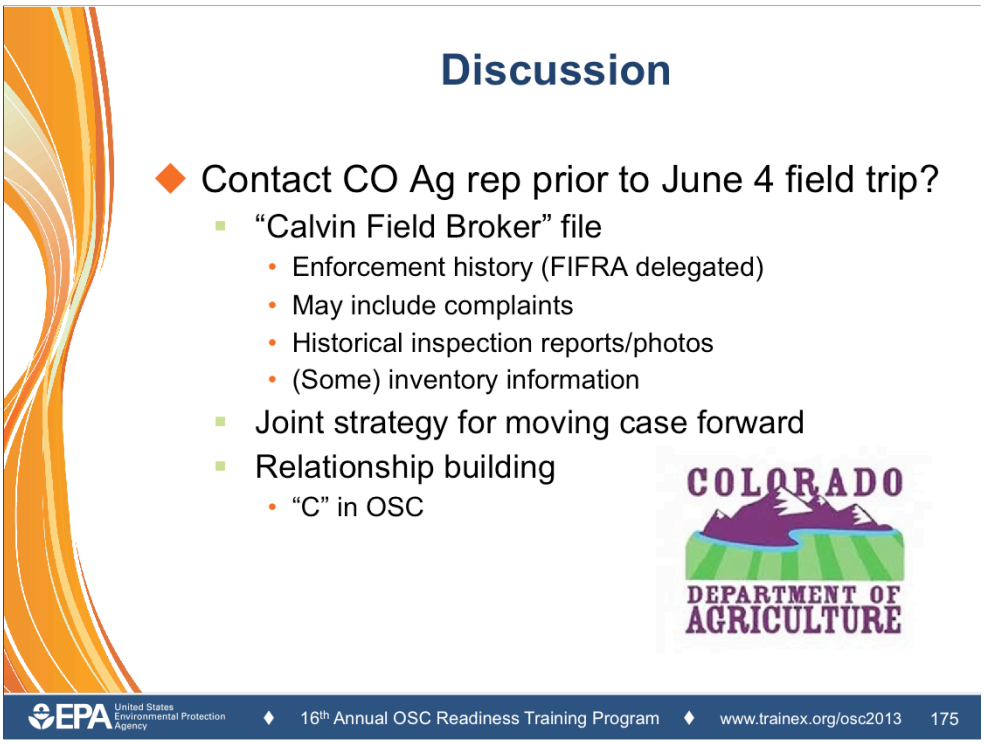


Check all that apply Choices Toxicity info; Reactivity info; Quantity of each material present; Condition of containers; Which materials pose the most urgent need for stabilization: Sense of urgency to take action;

These questions require the responder to do some homework . Research is first. Priorities of addressing materials will be based upon the technical research; the quantity present; and other local considerations (leaking roof, automatic fire suppression system, etc)

Recommendations is the outcome of this homework.

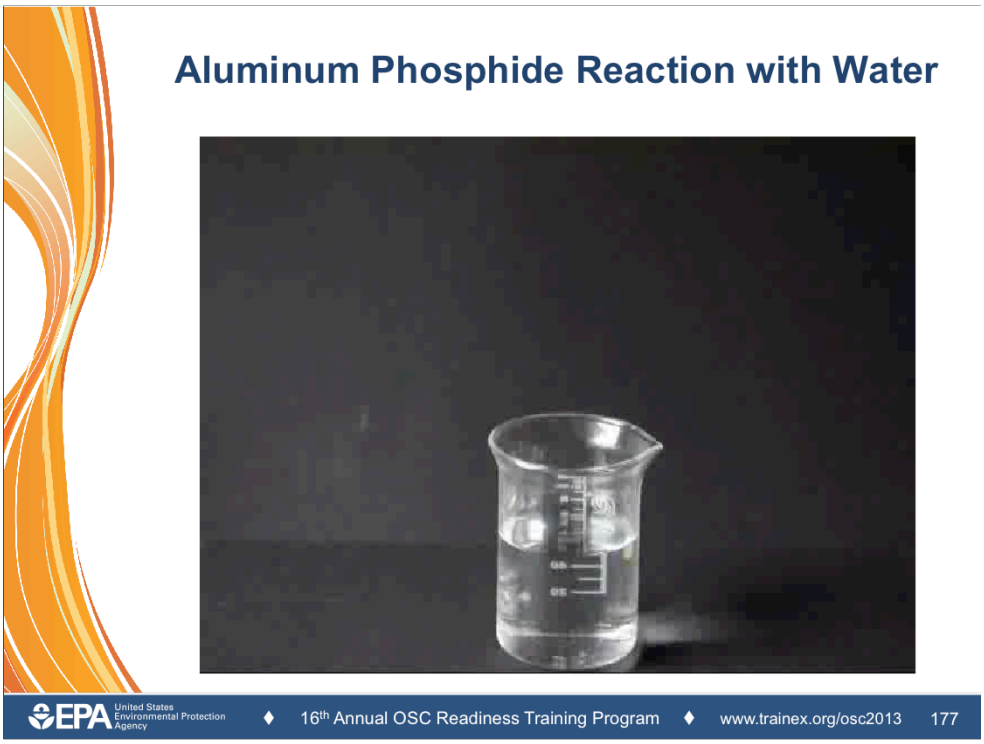
Other----do you convey a sense of urgency?



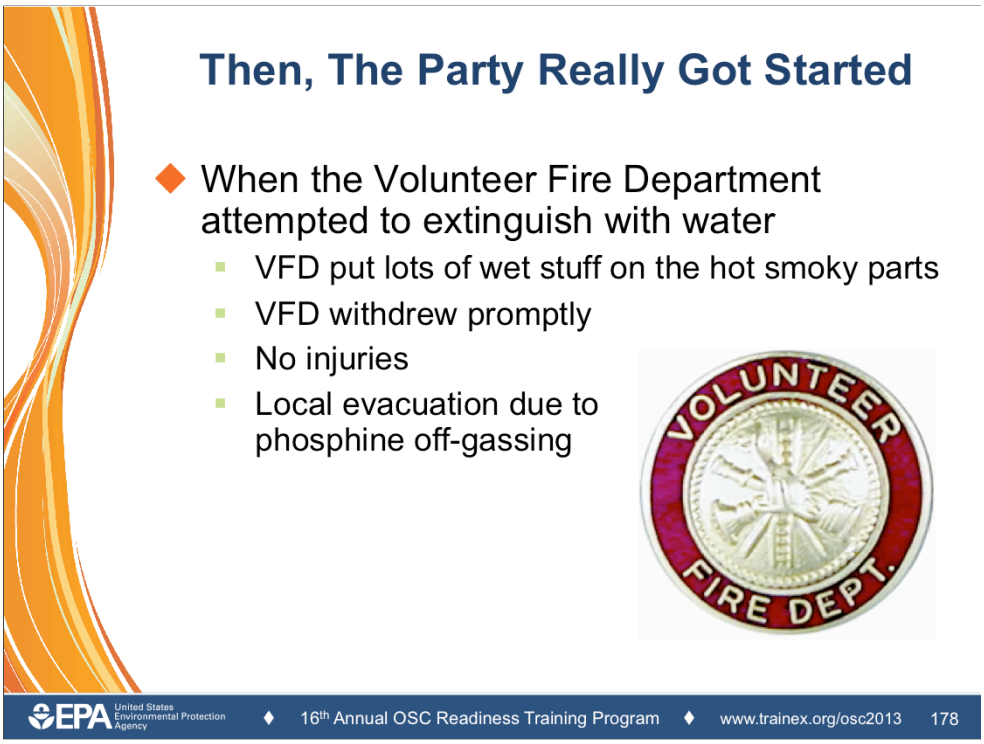
Choices Yes No

…but on evening of June 2

- 5.5 inch rainfall
- The rain DID NOT dampen enthusiasm of the 23,000 Rodeo festival attendees
- Leaking roof DID create a problem at Field Pesticides
- The pesticide issue caused cancellation of all Rodeo activities on the evening of June 2

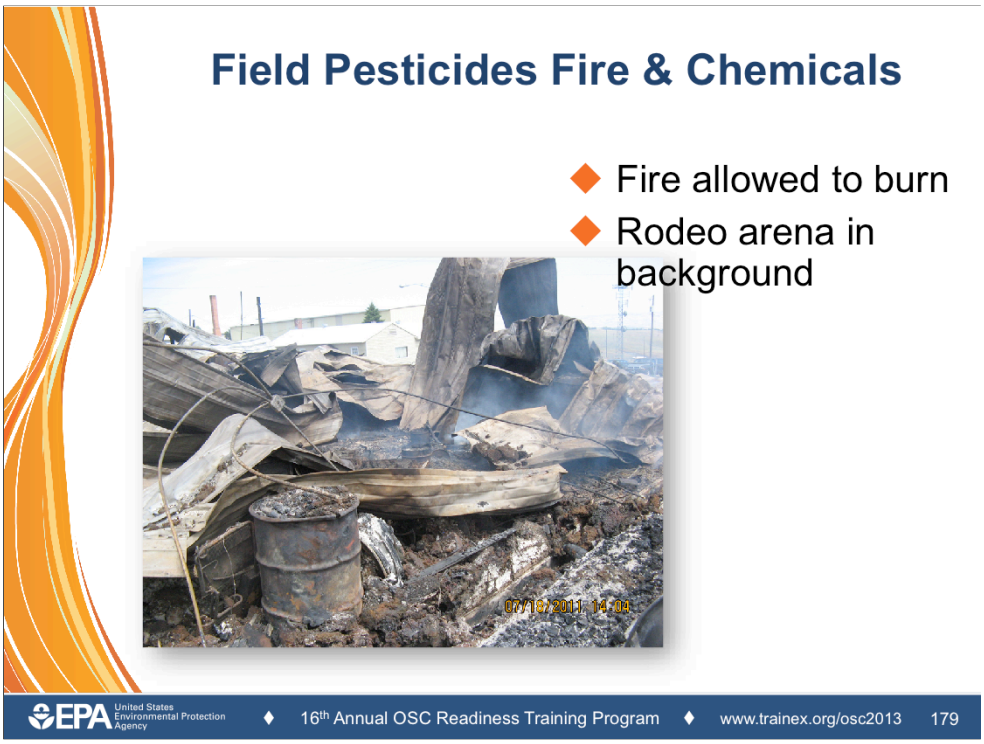


Note this is an embedded video clip



Chief ordered VFD to stand down and move crosswind when he got radio reports of "cans skittering around on the floor, popping like a flash camera, and catching fire "…..and the fumes from this were killing the rats and roaches running around in the warehouse. They would run away from the fire-front and then fall over dead."

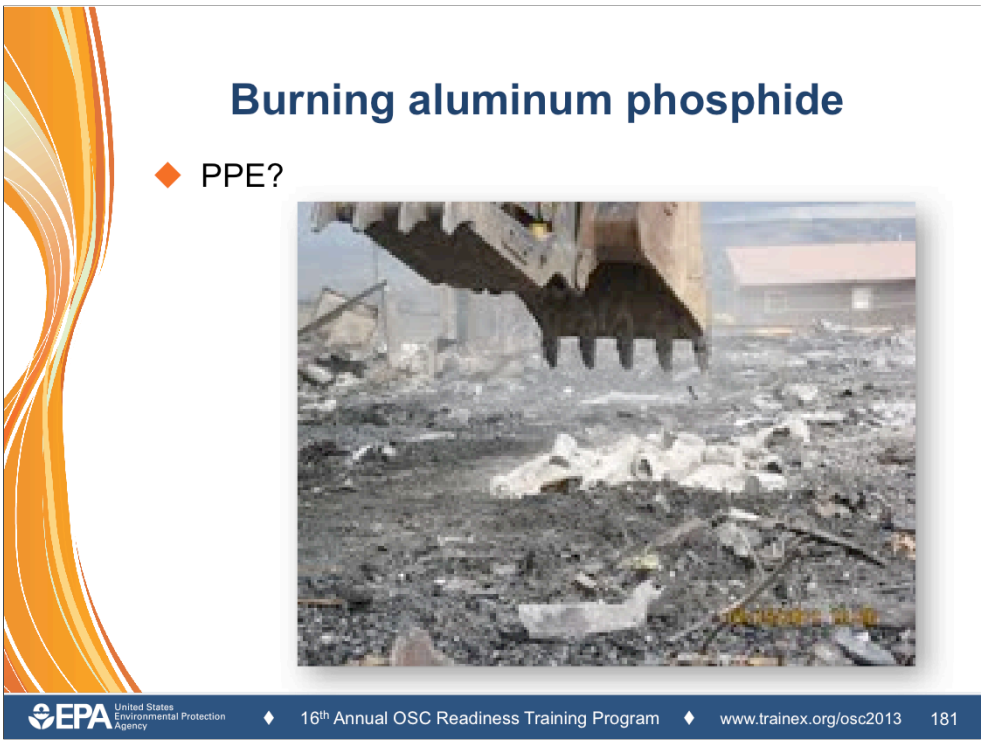
Noe to Dan—Pendleton had a stray dog (canary in coal mine)



Let it burn. Rodeo arena in background.

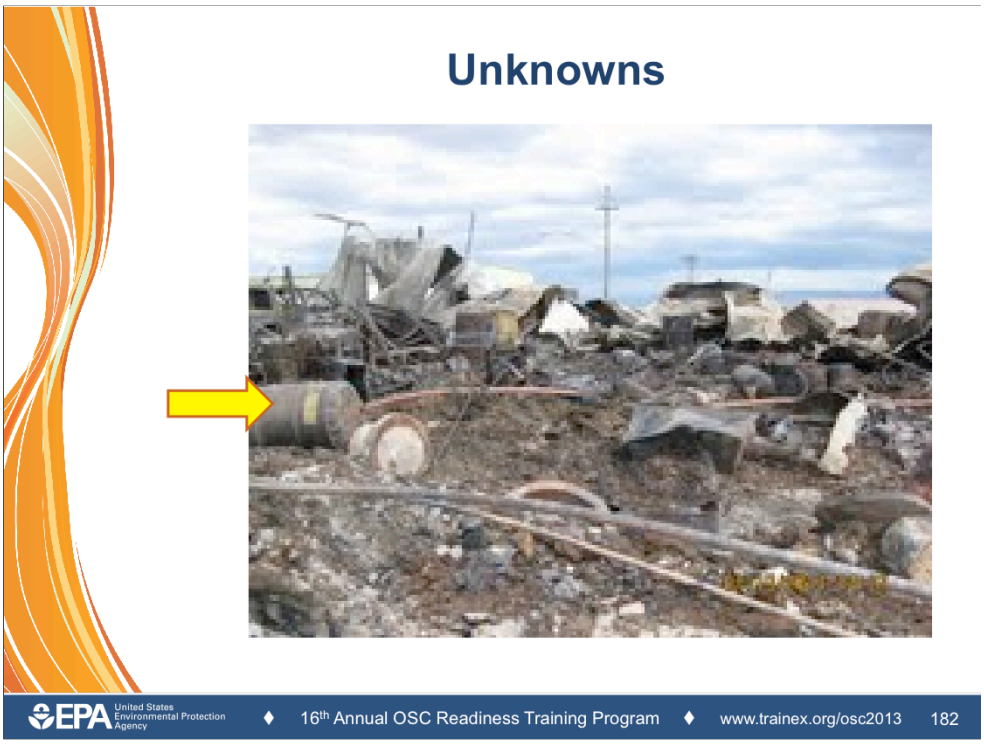
Fire investigators exposed

- Dizzy
- Blacked out
- ER-observed, treated, discharged
- EPA Lead subsequently requested



What PPE do we use here? Check correct answer Level A; Level B; Situation specifics dependent

Why? We have some intact product in badly damaged packaging. What do we do with that? Options



What happened to this 55 gal steel drum? It "cooked" in the fire.

Bottom bulged from Boiling Liquid &/or Expanding Vapor….did It explode? Unknown…..can not see top or seams (BLEVE)

Discussion

- Some intact product remained after the fire
  - What are options for managing?

CO Ag ideas?

Ask Dan for help

Take Away Messages

- Make a State Ag pesticide contact your friend (via Regional Pesticide staff)
- http://npic.orst.edu/reg/state_agencies.html
- Become familiar with tech references on pesticides
- Get experienced help (OSC Dan Heister)
- Except WMD, only chemicals you will encounter specifically designed to harm/kill


Questions?
ANSWERS
EPA United States Environmental Protection Agency
16th Annual OSC Readiness Training Program
www.trainex.org/osc2013
185

Certificates

- If you are interested in receiving a certificate for participating in this training, please send an email to Austin Oelschlager, Tetra Tech, at austin.oelschlager@tetratech.com
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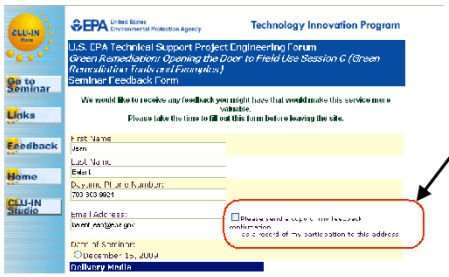
Resources & Feedback

- To view a complete list of resources for this seminar, please visit the **Additional Resources**
- Please complete the **Feedback Form** to help ensure events like this are offered in the future



Need confirmation of your participation today?

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