Hazards of Drums and Other Containers

aka: Fun with Drums
“Fun with Drums”

RECOGNIZING THE HAZARDS IN THE WILD
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SAMPLING & TESTING OF DRUMS
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Types of “Drums”

- Big & Small
- Empty
- Full
- “Muffin”
- Metal & Plastic
- Invisible
- other types and sizes of containers
Not these Drums!
Drums are everywhere
“Drums” come in many sizes
“Muffin Drum”? 
Drums?

Many types and sizes of containers of hazardous materials
All releases, big & small, can add up to be a problem.
If not harmful to plants – is it OK for you?
Invisible Drums?
Is this a good idea?
No Kicking or Rolling!
Drums are not always “abandoned”

Tribal Water Plant
“Empty Building”

After the Storm
What are these?
Its “only scrap metal”
What about Gas Cylinders?
What are the Hazards?

- Beware of the “Empty” drum!
- Past or Present Leakage in area
- Air Releases (Confined Spaces!)
- Reactions or Explosions
- Had your Tetanus Shot?
- Biological (Critters)
- Physical (rolling or falling)
Beware the sneaky ones!
If a container held a Flammable Liquid (gasoline) when is it the most dangerous?

- When it is Full?
- When it is Half Full?
- When it is empty?
Can you decipher a label?

Do you trust labels?
Can you read the Labels?
Should you?
What are the yellow labels?
Clean Up Drums
When is a Drum “Empty”?

• RCRA Subtitle C Definition?
• Safety Definition?
• Never?
RCRA Subtitle C: “Empty”

- 40 CFR Part 261.7(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, (except acute hazardous waste listed in §§261.31 or 261.33(e)) is empty if:
  - (i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating, and
  - (ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or
  - (iii)(A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size;
RCRA: “Acute Hazardous Wastes”

(b)(3) A container or an inner liner removed from a container that has held an acute hazardous waste listed in §§261.31 or 261.33(e) is empty if:

• (i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

• (ii) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

• (iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.
Stop & Look

Smells? Sounds?

What are you walking into?
Got proper safety gear?
Got Gear?

✓ Boots?
✓ Gloves?
✓ Level A, B, C?

✓ Communications?
✓ Camera-GPS?
✓ Binoculars?
✓ Monitoring Equipment?

Got Training?
(HAZWOPER)
Be Cautious!

- Be Observant!
- Watch for “Bio-Hazards”
- Count them (number, types & sizes)
- Note location(s)
- Notes on Surroundings
- Notes on General Observations
- Other Hazards in the area?
- Different condition/ages of Drums?
- Recommendations for future site safety
- Need “Decon”? 
Basic Steps:

• Personal safety comes first!
• Overview of area (confined space?!) 
• Recognize & Note ALL potential hazards
• Take lots of notes
• Take lots of pictures
• Document all observed impacts to area
• Document labels & markings
• Record number and types of containers
• Record location (directions & GPS)
• Interview any knowledgeable persons
Do Not:

✓ Kick a Drum
✓ Stand on a Drum
✓ Smoke near a Drum
✓ Roll a Drum
✓ Assume what is in it
✓ Assume it is empty
✓ Trust Labels
✓ Take one home
Follow up to Discovery

- Emergency Response Needed?
- Site Controls Needed? (E.C., I.C.)
- Potential Enforcement Action or Cost Recovery? (rules of evidence)
- Add to Brownfield Inventory?
- Report to other agencies?
- Notification to local residents/businesses?
- TRP Site Specific Work or TBA?
- Filing and databases!
Who ya Gonna Call?

- Tribal Resources
  - Tribal ER Coordinator/Team?
  - Fire Dept.?
  - IHS Hospital- EMTs?
- EPA Region ER Team
- State
- Other Local Govt.
- Contractor(s)
- Local Industry
- Ghost Busters
- Stanley Steamer Cleaners
128(a) TRP Role?

- Inventory (site discovery & identification)
- Oversight of Response & Cleanup
- Public outreach & information
- Cleanup Verification & Certification
- “Public Record”
Preparing for Sampling & Removal

Interviews are very important to determine the potential contents of a drum!
Where do you start?
Sampling & Removal
What to do with Drums

Characterize What is in Them
  – Sampling (unknown or confirmation for disposal)

Staging/Storage
  – Do you know which drums are incompatible?
  – Consolidate like materials
  – Labeling - proper documentation for disposal

Transportation
  – Loading
  – Necessary permits
  – Driver training (DOT, OSHA, EPA regs. and requirements)
Train Staff or Hire Contractor?

**Determine tribal needs**
- Other projects require staff training?
- Complete some tasks
- Assistance from local consortium, state, or feds?

**Provide oversight**
- Know what your contractor should be doing
- Review work plans, decontamination procedures, how waste is disposed of, site-specific safety and health plan, site-specific spill contingency plan
- Document process
Training

Employees shall be trained to a level required by their job function and responsibility.

OSHA recognizes several levels of training:
Each level requires a different training program, and OSHA specifies topics and minimum training times. The job descriptions and typical training time are detailed at: www.osha.gov/law-reggs.html.

29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
Respirator Fit-Tested; Refreshers; Medical Surveillance
Medical Surveillance and Consultation

The following employees shall be incorporated in a medical surveillance program in accordance with HAZWOPER 29 CFR 1910.120(f):

• Employees engaged in clean-up operations conducted at uncontrolled hazardous waste sites and employees of TSDFs, not covered by exceptions.

• Employees who are or may be exposed to hazardous substances or health hazards at or above the established permissible exposure limit, above the published exposure levels for these substances, without regard to use of respirators, for 30 days or more a year.

• All employees who wear a respirator for 30 days or more a year or as required by 1910.134.
Medical Surveillance and Consultation (cont.)

The following employees shall be incorporated in a medical surveillance program in accordance with HAZWOPER 29 CFR 1910.120(f):

• All employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation.

• **Members of HAZMAT teams.**

• Members of an organized and designated HAZMAT team and hazardous materials specialist shall receive a baseline physical examination and be provided with medical surveillance in accordance with HAZWOPER 29 CFR 1910.120(q)(9)
Hazardous Substances Website: Drum Resources

Institute for Tribal Environmental Professionals
www4.nau.edu/itep/waste/HazSubMap/twrap_HazSubMap_Drums.asp

- OSHA Handling Drums and Other Containers
- EPA's Standard Operating Procedure for Drum Sampling
- Drum Handling Practices at Hazardous Waste Sites

Zender Environmental Health & Research Group
www.zendergroup.org/drum.html
**Emergency Response Guidebook:** A Guidebook for first responders during the initial phase of a dangerous goods/hazardous materials transportation incident.

For copies, order style number ERG0016 at 1-800-621-5808 or www.labelmaster.com

**NIOSH Pocket Guide to Chemical Hazards:** A quick, convenient source of information. It includes chemical structures or formulas, identification codes, synonyms, exposure limits, chemical and physical properties, incompatibilities and reactivities, measurement methods, respirator selections, signs and symptoms of exposure and procedures for emergency treatment.


**Free Smart Phone Apps:** WISER, HazMat Pocket Guide, Placard+ Free
Be Cautious!
Be Careful!
Be Safe!
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