



# Loureiro

Engineering • Construction • EH&S • Energy • Waste

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## Sustainable Results

# Universal Waste Management Program 2015



# Agenda

- ◆ Universal Waste – “Hidden Hazards”

WIIFM = What's In It For Me

- ◆ Universal Waste – Management Plan



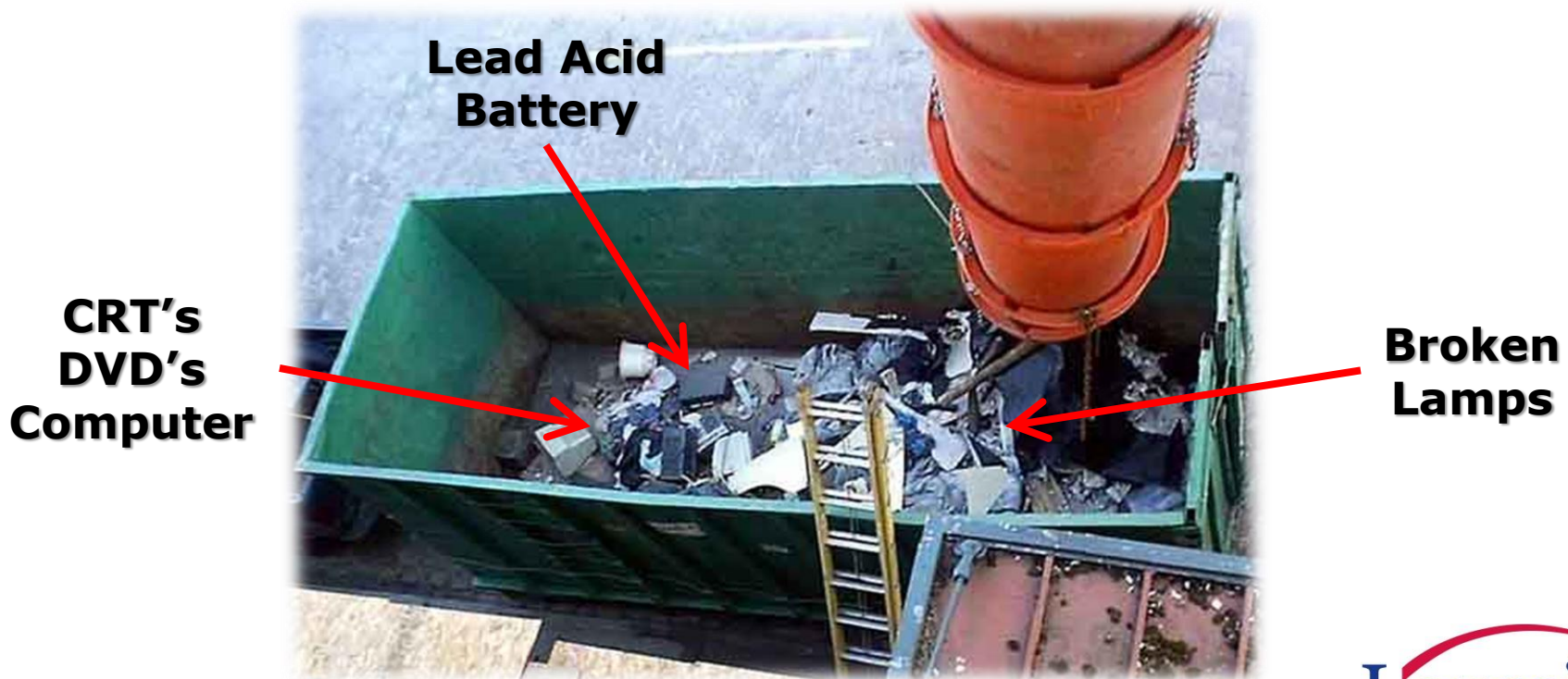
- ◆ Universal Waste – Engagement



# “Hidden Hazards”

## ◆ Activity Setting

Point of Generation - Dumpster w/ Universal Wastes



# “Hidden Hazards”

## ◆ Activity Setting

Transported for Disposal

**Trash-to-Energy**



**Land Fill**



# “Hidden Hazards”

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## ◆ Simulation - Materials & Equipment

- 4' x 4' plastic sheeting
- 1-gallon granular debris e.g., saw dust
- 6 x latex balloons
- ¼-cup liquid laundry detergent
- 1 x trash bag
- 1 x dust pan & dust broom
- 1 x battery powered black light

# “Hidden Hazards”

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## ◆ Simulation - Setup

- Unfold & layout plastic sheeting
- Spread granular debris onto sheeting
- Inflate & place balloons onto sheeting
- Spatter laundry detergent over sheeting



# “Hidden Hazards”

## ◆ Simulation – Clues

- Granular debris = trash, garbage, dirt, ashes, etc.
- Balloons = vapors & fumes generated through incineration of trash
- Laundry detergent = trace amounts of toxins or hazards found in universal wastes (elemental)



# “Hidden Hazards”

## ◆ Simulation – Cleanup

- Select participants
- Provide participants with broom, dust pan, & trash bag
- Instruct participants to sweep up mess & place in trash bag (leave plastic sheeting on floor)
- Inspect plastic sheeting to verify clean





# “Hidden Hazards”

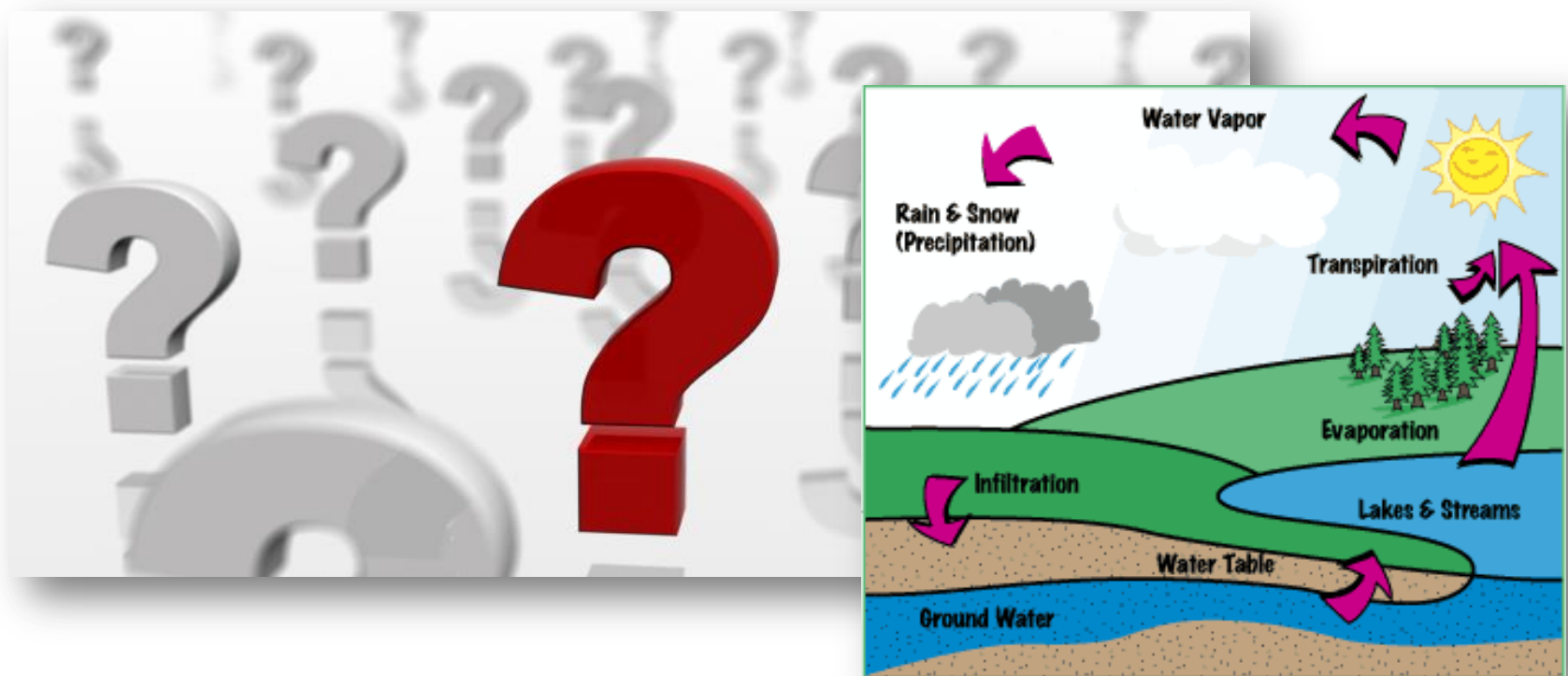
## ◆ Simulation – Find Hidden Hazards

Shine black light over plastic sheeting, broom/dust pan, trash bag, & participant’s hands & feet



# “Hidden Hazards”

◆ What’s it all about?



# Management Plan

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## **Universal Waste Management System:**

Refers to the management of an organization's universal waste in a comprehensive, systematic, planned & documented manner. Includes an organizational structure, planning & resources for developing, implementing & maintaining policy for environmental protection.



# Management Plan

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- ◆ Getting Started – Assessment & Interviews
  - Define legal requirements
  - Inventory types of universal wastes
  - Determine why/when they are generated
  - Identify “points-of-generation”
  - Assess current accumulation & storage practices
  - Evaluate current off-site shipment & management methods
  - Interview participants



# Management Plan

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- ◆ Getting Started – Good, Bad, & Ugly
  - What's working well (Good)
  - What legal requirements are being met (Good)
  - What are the current challenges (Bad)
  - What are participant stresses (Bad)
  - Known failures (Ugly)
  - Known pollution pathways (Ugly)
  - Enforcement risks (Ugly)
  - Safety risks (Ugly)



# Management Plan

## ◆ Set Objectives & Targets

**Objectives:** Overall aims that your business sets itself to improve universal waste management performance through a management system

**Targets:** Short-term goals on the way to achieving overall objectives



# Management Plan

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## ◆ Telling-the-Story – Introduction


**Purpose Statement:** Declarative statement which summarizes the specific topic and goals of the Plan.

**Background:** Summary of universal waste generation types, activities, and practices.

**Responsibilities:** Inventory of functions by job title with state or fact of having to deal with or having control over universal waste.

# Management Plan

## Definitions

Lamp	Battery	Mercury Article	Electronic
Spent Lamp	Spent Battery	Spent Mercury Article	Spent Electronic
Hazardous Waste Lamp	Hazardous Waste Battery	Hazardous Waste Mercury Article	Hazardous Waste Electronic
Universal Waste Lamp	Universal Waste Battery	Universal Waste Mercury Article	Universal Waste Used Electronics
Mercury-Containing Lamps	Spent Lead Acid Battery - Reclaimed	Incidental Breakage	Small Quantity Handler
Large Quantity Handler	Transporter	Destination Facility	



# Management Plan

## ◆ Guidance on Classification

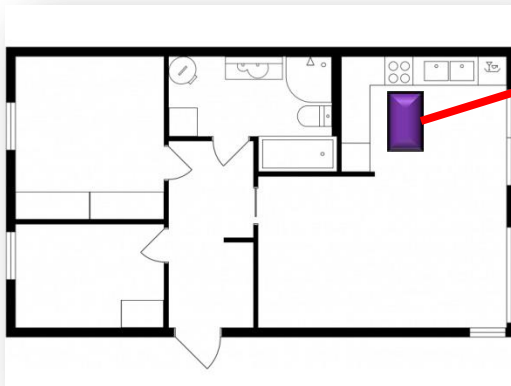
- Battery Types
- Lamp Types
- Mercury Article Types
- Used Electronic Types
- Incidental/Accidental Breakage



# Management Plan

## ◆ On-Site Accumulation & Storage

- Define Container Specifics
- Convey Accumulation Time Limit
- Described Marking Requirements
- Identify Accumulation Area
- Broken / Damaged Wastes
- Inspections

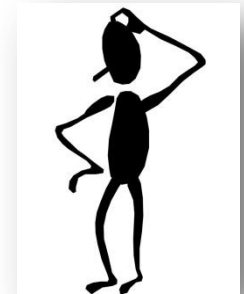


**Storage  
Area**

# Management Plan

## ◆ Off-Site Shipment

- Transporter Contracted vs. Self
- Application of DOT vs. MOT
- Alternate Handler vs. Destination Facility
- Vetting Process & Value Add Services
- Recordkeeping



**materials  
of  
trade**



**Shipping papers?  
Recycling Records?  
Credits\$  
Cost?  
Compliance?**

# Management Plan

- ◆ Fun Stuff – Engagement
  - Handler / Employee Training
  - DOT Training
  - Marketing & Advertising

