Zender Environmental Health and Research Group
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# Backhaul Presentations

## Backhaul & HMR Training

*June 14th – 17th, 2022*

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# Backhaul Presentations

## Backhaul & HMR Training

*June 14th – 17th, 2022*

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**Summary of Sections:**

# Backhaul Presentations

## Backhaul & HMR Training

*June 14th – 17th, 2022*

# Section 1

# Safety Management

# Safety Management


1

## What are some benefits of a strong workplace safety culture?

- _____
- _____
- _____
- _____
- _____

2

## Safety Management

- Essentially risk management for worker safety
- Establish preventive measures to minimize worker accidents & injuries

3

## Safety Management

**There are 2 main components…**

1) _____

2) _____

4

## Identifying Risks & Hazards

**External Risks**

**Internal Risks**

5

## Identifying Risks & Hazards

**Internal Risks**

- Materials – ***Risks and Hazards directly posed by materials***
- Processes – ***Risks and Hazards posed by worker activities***

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# Safety Management

## Identifying Risks & Hazards - Materials

**Haz Mat** | **Haz Waste**

US DOT | US EPA

*How do we know if a material is hazardous or dangerous?*

7

## Identifying Risks & Hazards - Materials


8

## Identifying Risks & Hazards - Materials

**Hazard Communication**

- Manufacturers must communicate if a material is hazardous
- You will need to communicate to other if materials managed by you are hazardous

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## Examples HazComm Labels


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## Examples HazComm Labels


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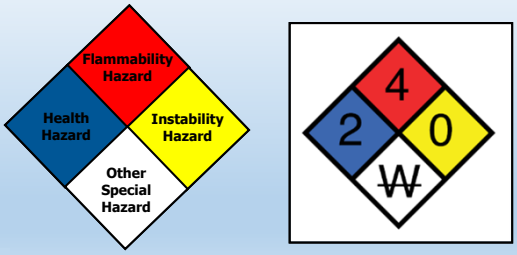
## Examples of Hazcom Labels

NFPA 704 – hazards and severity ratings

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# Safety Management

## Identifying Risks & Hazards - Materials

**Labels** – Give general information that a material is hazardous

*How/where can you find more detailed information on a hazardous substance?*


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## Identifying Risks & Hazards - Materials

**Safety data sheet (SDS):**

- Available and accessible to workers
- Required for all hazardous chemical used
- 16-section format

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## Identifying Risks & Hazards - Materials

**Training Requirements:**

- Hazcom
- DOT HazMat
- HAZWOPER
- Others, as needed


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## Identifying Risks & Hazards - Processes

***Identify Risks and Hazards by observing or thinking through job processes…***

- What is the task?
- How is the task done?
- Individual steps
  - Hazards with each step
  - Where can something go wrong?

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## Identifying Risks & Hazards - Processes

| Job Process | | |
|---|---|---|
| Sequence of Basic Job Steps | Potential Hazards | Recommended Action or Procedure |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

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## Identifying Risks & Hazards - Processes

***Remember irregular and emergency conditions***

***Once risks have been adequately identified, what is next?***

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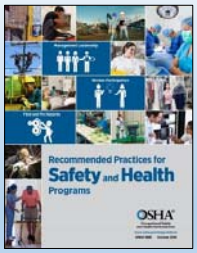
# Safety Management

## Controlling Risks & Hazards

**Benefits of *effective* controls**

- Protect workers from hazards
- Help avoid injuries, illnesses, and incidents
- Minimize/eliminate safety and health risks
- Help employers provide safe/healthful working conditions

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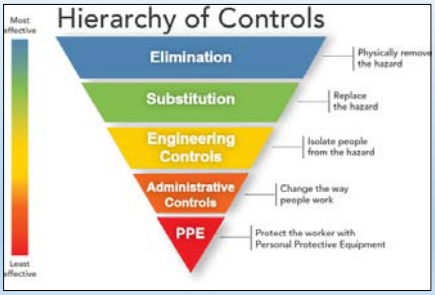
## Controlling Risks & Hazards

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## Controlling Risks & Hazards

**Examples of Administrative Controls…**

- _____
- _____
- _____
- _____
- _____


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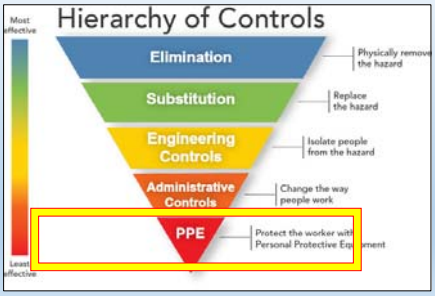
## Controlling Risks & Hazards

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## Controlling Risks & Hazards

**PPE controls:**

- Requires worker to wear something
- Examples

Source of Photos: OSHA

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## Controlling Risks & Hazards

**PPE Responsibilities**

**The employer is required to:**

- Perform hazard assessment
- Provide appropriate PPE
- Train employees
- Maintain/replace PPE
- Review/update/evaluate PPE Program

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# Safety Management

## Controlling Risks & Hazards

### Responsibilities

**The employer is required to pay for PPE used to comply with OSHA standards**

Examples

- Metatarsal foot protection
- Rubber boots with steel toes
- Non-prescription eye protection
- Goggles and face shields
- Prescription eyewear inserts/lenses for full face respirators
- Fire fighting PPE
- Hard hats
- Hearing protection
- Welding PPE



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## Controlling Risks & Hazards

### Responsibilities

**Employer payment exemptions**

- Non-specialty safety-toe protective footwear and non-specialty prescription safety eyewear
- Everyday clothing
- Ordinary clothing, skin creams, or other items, used solely for protection from weather
- Consumer safety items worn by food workers
- Lifting belts
- When employee lost or intentionally damaged PPE



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## Controlling Risks & Hazards

### Responsibilities

**The employee is required to:**

- Properly wear PPE
- Attend PPE training
- Care for, clean, and maintain PPE
- Inform supervisor of needs for repair/replacement



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## Controlling Risks & Hazards

### PPE Training Requirements

**Each employee who is required to use PPE must be trained to know:**

- When PPE is necessary
- What PPE is necessary
- How to properly put on, take off, adjust, and wear the PPE
- The limitation of the PPE
- Proper care, maintenance, useful life, and disposal of PPE



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## Continual Improvement

**Additionally, what can be done to promote continuous improvement in a safety program?**

- _____
- _____
- _____
- _____
- _____



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## Continual Improvement

**Involve workers**

- Understand conditions that create hazards
- Insights into how hazards can be controlled

Source of photos: OSHA



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# Backhaul Presentations

## Backhaul & HMR Training

*June 14th – 17th, 2022*

# Section 2

# Backhaul Overview

# Backhaul Overview

## Backhaul

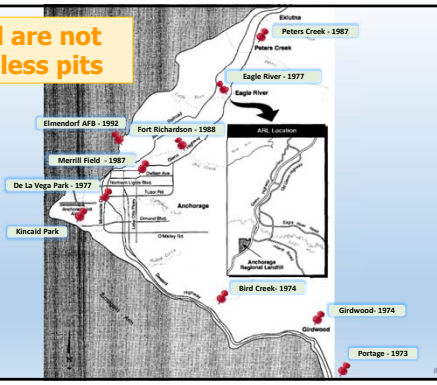
Zender Environmental

## An Overview

1


2

**Landfill are not bottomless pits**

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## Anchorage Regional Landfill

- Established - 1987
- Approx Closure Year – 2065
- Annual Tonnage – 350,000
  - ~1 ton/person/year
- Example Costs
  - *New Transfer site (under construction) - $114,000,000*
  - *Closure Costs - $ 30,000,000*
  - *Post-Closure (30 years) - $ 13,000,000*

4

## Thought Exercises

- **What are the benefits of having landfills last longer?**
  - _____
  - _____
  - _____
  - _____
  - _____

5

## Thought Exercises

- **What strategies can be used to help landfills last longer?**
  - _____
  - _____
  - _____
  - _____
  - _____

6

# Backhaul Overview

## Thought Exercises

- Why Backhaul?
  - _____
  - _____
  - _____
  - _____
  - _____

7

## Thought Exercises

- What can you (want to) Backhaul?
  - _____
  - _____
  - _____
  - _____
  - _____
  - _____
  - _____
  - _____
  - _____
  - _____

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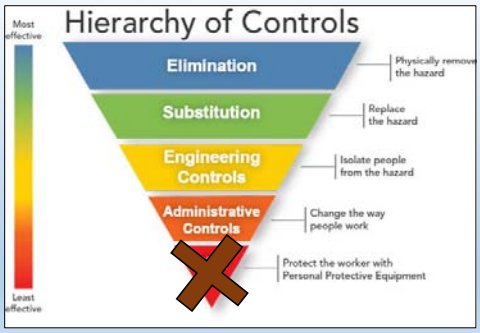


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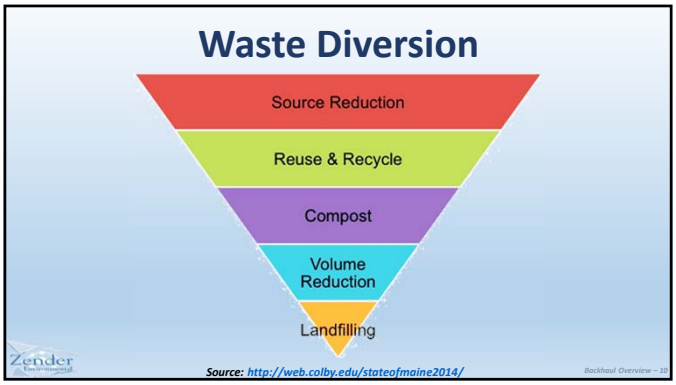


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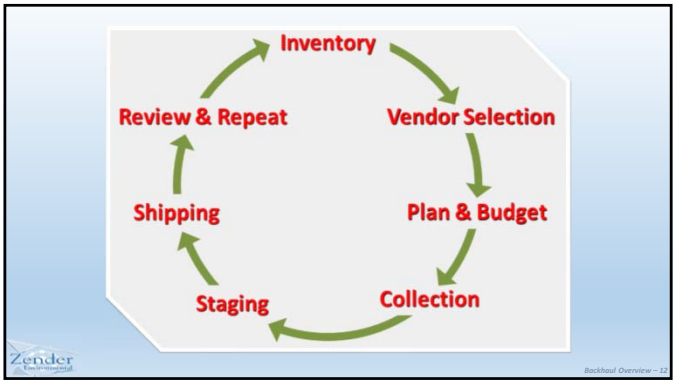


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# Backhaul Overview

## Inventory Basics

**What do you need to know first to start planning?**

1) _____

2) _____

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| Inventory Item | QTY | Lbs/Unit | Est. Weight | Space Requirements |
|---|---|---|---|---|
| Tires (Count) | 500 | 24 | 12,000 | 20ft |
| TVs | 35 | 65 | 2,275 | 4-5 pallets |
| CPU | 20 | 23 | 460 | 1 pallets |
| Monitors | 30 | 35 | 1,050 | 2 pallets |
| Electonic-Misc | 250 | 20 | 5,000 | 6 pallets |
| 4-ft Lamps | 2,000 | 0.66 | 1,320 | 2 pallets |
| Misc Lamps | 200 | 0.23 | 46 | 1 pallets |
| Lead Acid | 50 | 40 | 2,000 | 1 pallets |
| Mixed Battery | 1 | 50 | 50 | 1-Bucket |
| Refers/Freezers | 18 | 200 | 3,600 | 10-15ft |
| White Goods | 35 | 100 | 3,500 | 10-15ft |
| Propane Cylinders | 40 | 75 | 3,000 | 5ft |
| Snow Machine | 12 | 200 | 2,400 | 10ft |
| Scrap-Misc | 100 | 50 | 5,000 | 10ft |
| Cars | 24 | 3,000 | 72,000 | 4 cars - 20ft; 8 cars - 40ft; 12 cars - 53ft |
| | | TOTAL | 113,701 | |

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## Inventory Basics

**A good inventory allows planners to…**

- Prioritize which items will be backhauled,
- Determine the best method of managing materials,
- Determine how much space, labor, packaging materials, and other supplies will be needed, and
- Budget and plan a backhaul project.

***In short, the inventory is the framework in which an entire backhaul project can be built around.***

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## Planning – The Big Questions

- What materials are you targeting?
- How much are you expecting to manage?
- How are you going to get rid of materials & how often?
- Do materials need to be stored in a particular manner?
- How are materials going to be collected?
- Is there any processing/additional handling needed?
- What supplies & labor is needed?
- How is the program going to be maintained year after year?

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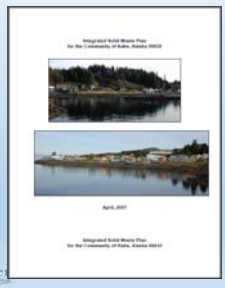
## Planning

**ISWMP**



**Action Plan**


17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# Backhaul Overview

## Vendors

**Who is involved? – *Work backwards***

- Who is going to manage the material?
- How is it going to get there?
- How will it get loaded?
- How will you collect, handle, & prepare the material?

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## Vendors

**Types of Vendors…**

- Recycling & Disposal Companies
- Shippers/Transporters
- Supply Vendors
- Operators
- Consultants & Contractors

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## Vendors

**Good Vendors are Partners…**

- Can they provide guidance or training?
- Can they help with packaging & labeling?
- Do they respond to your questions in a timely manner?
- Do they "buy-in" & understand what you are trying to do?
- Will they help troubleshoot unforeseen issues?

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## Planning

**Putting it all together…**

- **Location & Space?**
- **Packaging Supplies & Labels?**
- **Safety Supplies & PPE?**
- **Training?**
- **Other?**
- **How does this fit your Schedule & Budget?**

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## Location & Space

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## Packaging

- **Ensure containers are in good condition**
- **Better to have too many containers**
- **DOT approved/UN rated containers**
- **Additional Packaging Materials (wrap, banding, etc.)**
- **Appropriate labels**

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# Backhaul Overview

## PPE

- Ask/learn what folks used for similar project
- Ask Vendors for recommendations
- If needed, perform Risk Assessment
- Involve employees/workers in selection process
- Used in conjunction with training

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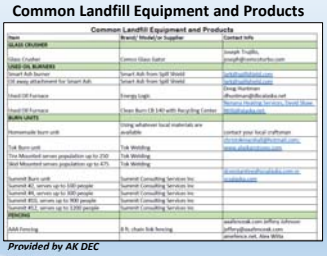
## Supplies

**Common Landfill Equipment and Products**



*Provided by AK DEC*

**Suggested Backhaul Supplies**

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## Training

**Likely Required Trainings:**

- General Workplace Safety
- PPE
- Hazardous Communication
- DOT HazMat Regs
- Packaging
- Universal Waste
- Emergency Response

**Situational & Other Trainings:**

- OSHA 10 & 30
- HAZWOPER 24 & 40
- PIT (Forklift)
- Safety Briefings
- Internal Trainings
- Procedures, Manuals, Guidelines, etc…

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## Spill & Emergency Response

- Fire Extinguisher
- Absorbent
- Acid/Alkali Neutralizer
- Eye Wash
- First Aid Kit
- Spill Pads, Booms, Spill PPE, etc…

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## Budgeting

- Facility
- Outreach
- Labor/Contracting
- Materials (Packaging, PPE, etc…)
- Transportation Costs
- Recycling and Disposal Fees

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# Backhaul Presentations

## Backhaul & HMR Training

*June 14th – 17th, 2022*

# Section 3

# What Does Hazardous Mean?

# What Does Hazardous Mean?

HazComm, HazMat,

Zender Environmental

Hazardous Waste &
Universal Waste

1

## What Does "Hazardous" Mean?


2

## What Does "Hazardous" Mean?

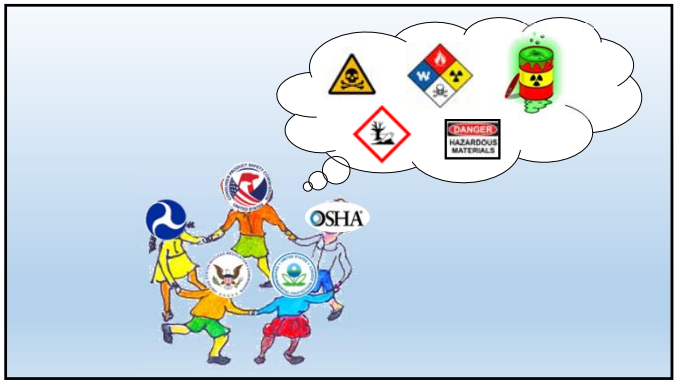
- Hazardous Materials
- Hazardous Waste
- Hazardous Substances
- Hazardous Chemicals
- Hazardous Air Pollutants
- *Universal Waste****

3

## What Does "Hazardous" Mean?

- Hazardous Materials DOT
- Hazardous Waste EPA
- Hazardous Substances EPA, CPSC
- Hazardous Chemicals OSHA DOL/OSHA
- Hazardous Air Pollutants EPA
- *Universal Waste**** EPA

4

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## Identifying Hazards

*How do we know if a material is hazardous or dangerous?*

6

# What Does Hazardous Mean?

## Identifying Hazards


7

## Identifying Hazards

**Hazard Communication**

- Manufacturers must communicate if a material is hazardous
- You will need to communicate to other if materials managed by you are hazardous

8

## Examples HazComm Labels

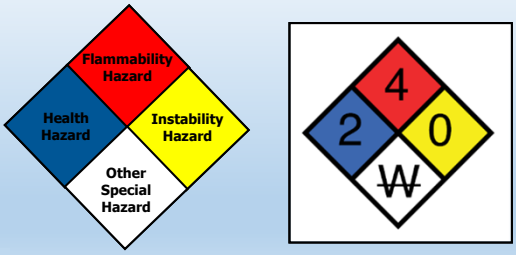

9

## Examples HazComm Labels


10

## Examples of Hazcom Labels

NFPA 704 – hazards and severity ratings

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## Identifying Hazards

**Labels** – Give general information that a material is hazardous

*How/where can you find more detailed information on a hazardous substance?*

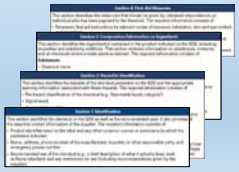
12

# What Does Hazardous Mean?

## Identifying Hazards

**Safety data sheet (SDS):**

- Available and accessible to workers
- Required for all hazardous chemical used
- 16-section format



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## Identifying Hazards

**Training Requirements:**

- HazComm
- DOT HazMat
- HAZWOPER
- Others, as needed


14

## *What's the Difference???*

| Haz Mat | Universal Waste | Haz Waste |
|---|---|---|
|  |  |  |
| US DOT | US EPA | US EPA |



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## *What's the Difference???*

| Haz Mat | Universal Waste | Haz Waste |
|---|---|---|
| • Packaging<br>• Making/Labeling<br>• Training<br>• Emergencies<br>• Security<br>• Shipping | • Handling & Storage<br>• Making/Labeling<br>• Training<br>• Emergencies<br>• Shipping<br>• Disposal | • Handling & Storage<br>• Making/Labeling<br>• Training<br>• Emergencies<br>• Shipping<br>• Disposal |
| US DOT | US EPA | US EPA |

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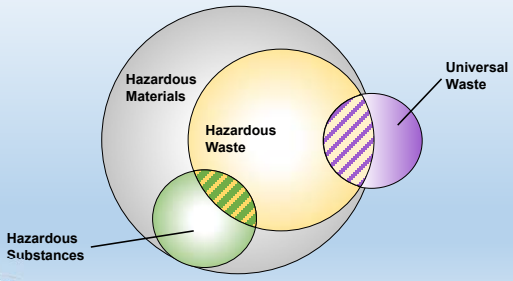
## *How Does it Fit Together?*

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## *Where Do I Fit In???*

| Universal Waste | | Hazardous Waste | | |
|---|---|---|---|---|
| Small Quantity Handler of Universal Waste (SQHUW) | Large Quantity Handler of Universal Waste (LQHUW) | Very Small Quantity Generator (VSQG) | Small Quantity Generator (SQG) | Large Quantity Generator (LQG) |
| Universal Waste Transporters | | Hazardous Waste Transporters | | |
| Universal Waste Destination Facility | | Transfer Facility | Treatment, Storage and Disposal Facilities | |

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# What Does Hazardous Mean?

### *Where Do I Fit In???*

| Universal Waste | | Hazardous Waste | | |
|---|---|---|---|---|
| Small Quantity Handler of Universal Waste (SQHUW) | Large Quantity Handler of Universal Waste (LQHUW) | Very Small Quantity Generator (VSQG) | Small Quantity Generator (SQG) | Large Quantity Generator (LQG) |
| Universal Waste Transporters | | Hazardous Waste Transporters | | |
| Universal Waste Destination Facilities | | Transfer Facility | Treatment, Storage and Disposal Facilities | |

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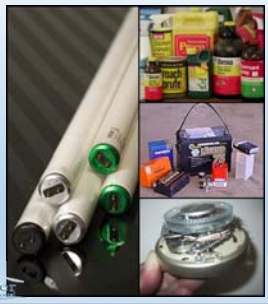
## Why Manage as Universal Waste?



***Much easier management of materials that would otherwise be Hazardous Wastes***

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## Why Manage as Universal Waste?

***<u>The EPA wants too…</u>***

- ***Promote Recycling of these wastes***
- ***Ease regulation burdens***
- ***Keep these waste out of landfills***

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## Universal Waste

***Universal Waste (Federal)…***

- Fluorescent Lamps
- Mercury containing devices
- Batteries
- Pesticides
- …and now Aerosols

23

## Universal Waste

***Universal Waste (Federal)…***

- Sound Packaging
- Prevent leaks if items break
- Remained closed
- Be Marked & Labeled

24

# What Does Hazardous Mean?

## Labeling


1. *Label*
2. *Contents*
3. *Accumulation Start Date*

25

## Other Important Requirements

### Small Quantity Handler of Universal Waste (SQHUW)

| SQHUW Requirements | | Avoid these requirements if you maintain SQHUW Status |
|---|---|---|
| **Quantity Handled by Category** 40 CFR §273.9 | Accumulate *less than* 11,000 lbs (5,000 kg) onsite at any one time | • Facility EPA ID Number<br>• HazWaste Manifesting<br>• Maintaining Shipping Records |
| **On-Site Accumulation Limit** 40 CFR §273.9 | *Less than* 11,000 lbs (5,000 Kg) | |
| **Storage Time Limit** 40 CFR §273.15 (without a storage permit) | 1 Year | |
| **Personnel (Employee) Training** 40 CFR §273.16 | 1) Proper handling and 2) Emergency procedures | |

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## *Also Remember…*

***You have to comply with DOT Regulations too!!!***

**US DOT**

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## So You Have Some Hazardous Waste

29

## *Is it Actually Hazardous Waste???*

**Exemptions, Alternatives, etc…**

- Used Oil
- Glycol
- Latex Paint
- Universal Waste
- Recyclables
- Does it meet the definition?
- Can it be used up?


Latex paints separated from other HHW items

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# What Does Hazardous Mean?

## Considerations

**Things to consider when dealing with Hazardous Wastes**

- Sorting & packaging is complex
- Shipping & disposal is expensive
- Planning takes a lot of time
- Will likely need outside assistance
- Increased risks (health, safety, environment, etc.)

HazMat, Haz Waste, & UW – 31

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## Shipping & Disposal – Not Easy

**Utilize Available Resources**

- SDS
- Reference Materials
- Historical Knowledge
- Regulators
- Vendors/Contractors
- Other Professionals

HazMat, Haz Waste, & UW – 32

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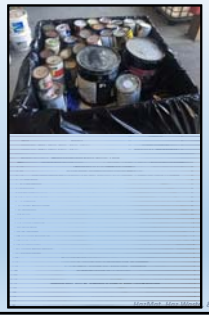
## Shipping & Disposal – Not Cheap

**Plan & Budget**

- Sampling & Profiling
- Packaging
- Labeling
- Paperwork
- Shipping
- Disposal
- Vendor/Contractor Involvement



HazMat, Haz Waste, & UW – 33

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## Important Requirements

Very Small Quantity Generator (VSQG)

| VSQG Requirements | | Avoid these requirements if you maintain VSQG Status |
|---|---|---|
| **Quantity Handled by Category** 40 CFR §260.10 | *Less than* 220 lbs (100 kg) per month, and *Less than* 2.2 lbs (1 kg) per month of acute hazardous waste | • Facility EPA ID Number<br>• HazWaste Manifesting<br>• Formal Contingency/Emergency Response Plans<br>• Accumulation Requirements<br>• Reporting<br>• Recordkeeping |
| **On-Site Accumulation Limit** 40 CFR §262.14(a)(3) & (4) | *Less than* 2,200 lbs (1,000 kg) *Less than* 2.2 lbs (1 kg) of acute hazardous wastes | |
| **Storage Time Limit** (without a storage permit) | None | |
| **Pre-Transport Requirements** Package and label hazardous waste for shipment | Must comply with applicable DOT HazMat requirements | |

HazMat, Haz Waste, & UW – 34

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## *Also Remember…*

***You have to comply with DOT Regulations too!!!***

**US DOT**

HazMat, Haz Waste, & UW – 35

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Haz Waste, & UW – 36

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# Section 4

# Junk Vehicle Preperation

# Junk Vehicle Preperation

## Junk Vehicle Preparation

*Created 5/19/16*

1

## A Systematic Approach

| Junk Car Preparation Checklist | | | | |
|---|---|---|---|---|
| 1) PPE Check | See **PPE Checklist** on opposite page | COMPLETE? | Y | N |
| 2) Equipment Check | See **Equipment Checklist** on opposite page | COMPLETE? | Y | N |
| 3) Vehicle Check/Walkaround | See **Vehicle Inspection Checklist** on opposite page | COMPLETE? | Y | N |
| 4) Stage and Stability Check | Ensure the Vehicle is safely and securely elevated and blocked to prevent rolling, tipping, falling, etc. Do not prepare the vehicle unless you feel 100% safe working on it. | COMPLETE? | Y | N |
| 5) Battery Removal | Remove the car battery (lead acid battery) and properly stage it for backhaul/recycling. | COMPLETE? | Y | N |
| 6) Refrigerant Removal | If A/C is present, remove refrigerant into appropriate refrigerant recovery unit. | COMPLETE? | Y | N |
| 7) Merc Switch Removal | Remove accessible mercury switches (if present) | COMPLETE? | Y | N |
| 8) Fluid Removal | See **Fluid Removal Checklist** on opposite page | COMPLETE? | Y | N |
| 9) Tire Removal | Remove Tires and Rims. Stage tires for future backhaul or alternative use. | COMPLETE? | Y | N |
| 10) Value Added Item Removal | See **Value Added Item Checklist** on opposite page | COMPLETE? | Y | N |
| 11) Stage for Crushing/Backhaul | Stage the vehicle in a designated area for future crushing/backhaul | COMPLETE? | Y | N |

2

## PPE and Equipment Check

| 1) PPE Checklist | |
|---|---|
| **Item** | **Ready?** |
| Gloves | |
| Hearing Protection | |
| Boots | |
| Eye Protection | |
| Long Sleeves | |

| 2) Equipment Checklist | |
|---|---|
| **Item** | **Ready?** |
| Refrigerant Recovery Kit | |
| Generator + Fuel | |
| Jack | |
| Jack Stands | |
| Dikes/Cutters | |
| Steel Punch | |
| Hammer | |
| Sawzall, Blades, Batteries | |
| Socket Set + Screwdrivers | |
| Drain Pans | |
| Buckets w/Lids | |
| Drums | |
| Labels + Marker | |
| Hand Pump | |
| Absorbent | |
| Spray Paint | |
| Tire Iron | |

3

## Walk-Around/Safety Check

4

## Vehicle Inspection

| 3) Vehicle Inspection/Walkaround Checklist | |
|---|---|
| **Item** | **Complete?** |
| Find Battery | |
| ID Refrigerant (ex: R12, R134a) | |
| See where/how Fluids are contained | |
| ID Merc Switches (presence/absence) | |
| Check the cab for items (trash, ammo, etc.) | |
| Find Locations of the Value added items | |

5

## Stability Check

6

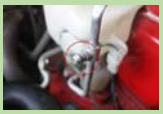
# Junk Vehicle Preperation

## Remove Battery


7

## Check for Refrigerant and Evacuate

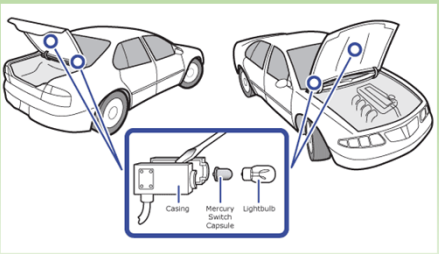
R-12

R-134a


8

## Look for Mercury Switches





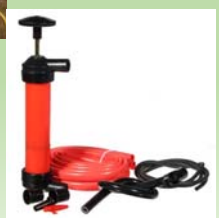
9

## Draining Fluids

| 8) Fluid Removal Checklist | |
|---|---|
| **Item** | **Complete?** |
| Motor Oil | |
| Transmission Fluid | |
| Transfer Case Fluid | |
| Brake Fluid | |
| Power Steering Fluid | |
| Antifreeze/Coolant | |
| Fuel | |

10

## Pumps

11

## Oils - Motor


12

# Junk Vehicle Preperation

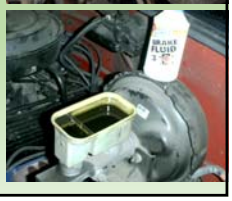
**Oils - Transmission**


13

**Oils - Transfer Case**

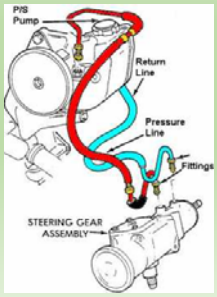

14

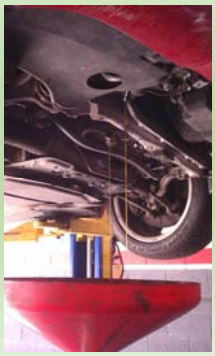
**Oils – Break**



15

**Oils – Power Steering**



16

**Antifreeze/Coolant**


17

**Fuel/Fuel Tanks**

18

# Junk Vehicle Preperation

## Tires/Rims

19

| 9) Value Added Item Checklist | |
|---|---|
| Item | Complete? |
| Radiator | |
| Catalytic Converter | |
| Wiring Harness | |
| Alternator | |
| Motors (Starter, Wiper, etc) | |
| Aluminum Rims | |
| Lead Weights (on Rims) | |
| Other | |

20

## Crushing and Staging


21

## Shipping

22

## Questions?

23