

# Advanced Hazardous Waste Generator Workshop



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# WORKSHOP OVERVIEW

- Will discuss advanced topics in hazardous waste (HW) management, including:
  - Used Oil (UO) – including mixing with HW
  - Treatment
  - Discarded, abandoned, or inherently waste-like
  - Universal Waste
  - Aerosol Cans
  - Enforcement Settlement Options
  - HW Storage Tanks
- Opportunity for questions

# USED OIL

- Used oil (UO) is not a hazardous waste as long as it is recycled.
- UO does not count toward HW generator status.
- Containers and tanks must be labeled “Used Oil”.
- Must use a transporter registered with KDHE unless you are transporting 55 gallons or less of your own UO to an aggregation point or collection center.

# HW mixed with UO

- CESQG (<55 lbs per month) can mix their HW with UO.
- Listed HW mixed with UO is listed HW (except F003).
- Characteristic HW mixed with UO is UO as long as it does not exhibit any characteristic.
- Ignitable only (D001 or F003) HW mixed with UO is UO as long as the mixture is not ignitable.

# REBUTTABLE PRESUMPTION

- UO containing more than 1,000 ppm total halogens is presumed to be HW.
  - Can be rebutted through analytical testing.
  - Does not apply to metal working oils/fluid containing chlorinated paraffins if processed through tolling agreement.
  - Does not apply to CFC containing oils from refrigeration units where CFCs will be recovered.

# UO SPECIFICATIONS

- Subject to Part 279 unless the following specifications are met:
  - Arsenic – 5 ppm maximum
  - Cadmium – 2 ppm maximum
  - Chromium – 10 ppm maximum
  - Lead – 100 ppm maximum
  - Flashpoint – 100° F minimum
  - Total Halogens - <4,000 ppm  
(If > 1,000 ppm halogens, then only on-spec if rebuttable presumption is met)

# BURNING IN ON-SITE SPACE HEATER

- Can burn any of the following:
  - UO generated on-site or by sister facility  
(as long as no more than 55 gallons is self-transported)
  - UO from do-it-yourselfers
  - On-spec UO from any source
- Space heater must meet the following:
  - Maximum capacity of 0.5 million Btu/hour;
  - Combustion gases vented to the ambient air;

# REUSE VS RECYCLING

- Reuse – waste can be used directly in the same or a different process.
- Recycling – waste must be processed, filtered, cleaned-up, or otherwise altered or treated prior to being reused.
- Recycling HW can be treatment.

# TREATMENT

- Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

# UNLAWFUL ACTS

- Solidification and/or drying of HW:



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# UNLAWFUL ACTS

- Unlawful burning of hazardous waste.



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# TREATMENT NOT REQUIRING A PERMIT

- Solvent distillation on-site
- Treatment in a wastewater treatment unit (WWTU)
- Elementary Neutralization
- Treatment in a totally enclosed treatment facility

# SOLVENT DISTILLATION (ON-SITE)

- Waste accumulated prior to distillation:
  - Counts towards generator status
  - Is subject to all container management requirements
- Waste placed directly in a distillation unit without prior accumulation:
  - Does not count towards generator status
  - Is not subject to container management requirements

# SOLVENT RECYCLERS

- Examples:



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# SOLVENT DISTILLATION

- Counting waste solvent being distilled on-site
  - Starts over each calendar month
  - Count all solvent the first time it is recycled each month
  - Count still bottoms only if the solvent was not counted.

# SOLVENT DISTILLATION

**Example** (assume solvent is 7 lbs/gallon and F005)

May 1 – recycle 10 gallons of waste solvent

- Recover 8 gallons of recycled solvent
- Generate 1 pound of still bottoms (F005)
- A total of 70 lbs of HW counts towards generator status
- 2 gallons of new solvent are added to the distilled solvent so that a total of 10 gallons of solvent can be used in the process.

# SOLVENT DISTILLATION

## Example (continued)

May 15 – recycle 10 gallons of waste solvent

- Recover 8 gallons of recycled solvent
- Generate 1 pound of still bottoms (F005)
- 2 gallons of solvent were not counted on 5/1/12, so they count now, for a total of 14 pounds of HW.
- Since 20% of the solvent was counted ( $2 \div 10$ ), you subtract that amount from the still bottoms ( $1 - 0.2$ ). So 0.8 lbs counts toward the generator status.
- Still bottoms (0.8 lbs) + solvent (14 lbs) = 14.8 lbs of HW that counts toward the generator status.

# SOLVENT DISTILLATION

## Example (continued)

- May 1 – 70 lbs of HW counted
- May 15 – 14.8 lbs of HW counted
- $70 + 14.8 = 84.8$
- If no more solvent is recycled this month, then a total of 84.8 lbs of hazardous waste counts toward the monthly HW generation rate.

# SOLVENT DISTILLATION BOTTOMS

- Are also called hockey pucks, pancakes, still bottoms, cake, etc.
- Are HW if:
  - They exhibit any characteristic
  - The solvent being recycled met the F-listing definition for F001-F005.

# WASTEWATER TREATMENT UNIT (WWTU)

- Means a device which:
  - Is part of a wastewater treatment facility that is subject to regulation under either section 402 or 307(b) of the Clean Water Act; and
  - Receives and treats or stores an influent wastewater that is a hazardous waste, or that generates and accumulates or treats or stores a wastewater treatment sludge that is a hazardous waste; and
  - Meets the definition of tank or tank system in 40 CFR Section 260.10.

# WWTU

- Waste exiting a WWTU may be HW
  - Common examples:
    - F006 – Wastewater treatment sludges from electroplating
    - F019 – Wastewater treatment sludges from chemical conversion coating of aluminum

# ELEMENTARY NEUTRALIZATION

- HW must be hazardous only for corrosivity (D002)
- Must be done in a tank, container, transport vehicle, or vessel.
- If waste is accumulated in containers prior to neutralization, then container management requirements must be met unless the container where the waste is accumulated is also the elementary neutralization unit.

# TOTALLY ENCLOSED TREATMENT FACILITY

- Means a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.
- It is a good idea to get KDHE concurrence.

# DISCARDED, ABANDONED, INHERENTLY WASTE-LIKE

Something may become a waste because it is discarded, abandoned, or considered inherently waste-like:

- Not managed as a valuable raw material or product
- Open with physical contaminants (leaves or dirt)
- Container in very poor condition
- Exposed to the elements
- Stored in a difficult to reach location
- Newer product or materials used prior to the container of concern.

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# DISCARDED, ABANDONED, INHERENTLY WASTE-LIKE



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# DISCARDED, ABANDONED, INHERENTLY WASTE-LIKE



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# DISCARDED, ABANDONED, INHERENTLY WASTE-LIKE



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# UNIVERSAL WASTE

- Universal waste (UW) is a subset of HW
- Kansas follows EPA rules for UW
- Lamps (fluorescent bulbs) cannot be deliberately crushed if they are going to be managed as UW.

# UNIVERSAL WASTE



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# UNIVERSAL WASTE

- UW in Kansas includes:
  - Batteries
  - Certain pesticides
  - Mercury-containing equipment
  - Lamps (including fluorescent bulbs)

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# UNIVERSAL WASTE

- UW batteries, mercury-containing equipment, and lamps, must be labeled:
  - “Universal Waste - \_\_\_\_\_”; or
  - “Waste \_\_\_\_\_”; or
  - “Used \_\_\_\_\_”.

Fill in the blank with: Batteries, mercury-containing equipment (or mercury thermostats), or lamps.

- UW pesticides must be labeled either:
  - “Universal Waste – Pesticides”; or
  - “Waste Pesticides”.

# UNIVERSAL WASTE

- Must document the accumulation time of the UW by:
  - Dating each container or the group of containers (such as on a pallet); or
  - Date the accumulation area; or
  - Maintain a written inventory or log

# UNIVERSAL WASTE

- UW can be shipped under a bill of lading or other shipping papers. A Uniform Hazardous Waste Manifest is not required.
- Employees who handle or have responsibility for managing UW must be given information describing the proper handling and emergency procedures appropriate to the type(s) of UW handled.

# AEROSOL CANS

- KDHE considers empty aerosol cans to be non-hazardous (as long as they did not contain acutely hazardous waste).
- If the contents of an aerosol can cannot be used (the can breaks, nozzle clogs, etc.), attempts can be made to repair the can and put it back into service.
- If the can cannot be repaired, or if no attempt will be made to repair the can, a hazardous waste determination must be made on the contents (generally done by reviewing the Material Safety Data Sheet (MSDS)).
- If the contents are HW, the following slides apply.

# AEROSOL CANS

- The satellite accumulation area must be at or near the point of generation of the aerosol cans.
  - Must be where cans are generated originally if no attempts will be made to fix the cans and put them back into service.
  - Can be the maintenance area or other central location if attempts will be made to fix the cans in that area/location and put the cans back into service.

# AEROSOL CAN PUNCTURING

- If done in a closed and self-contained unit (such as a drum top unit), KDHE considers this an exempt form of hazardous waste treatment.
- KDHE considers the waste drained from the aerosol cans to be a newly generated waste, and therefore the drum accumulating it can be a satellite accumulation container.
- The emptied cans can be recycled or disposed (unless they contained P-listed waste).

# AEROSOL CANS



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# ENFORCEMENT SETTLEMENT OPTIONS

- Traditional options still exist:
  - One-lump sum payment
  - Payments over time
  - Supplemental Environmental Projects (SEPs)
- New options available:
  - Demonstration of Continued Compliance (DCC)
  - Funding for training
  - Funding for clean-ups

# HW TANKS

- Tank – A stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earth materials (e.g., wood, concrete, steel, plastic) which provide structural support.
- This definition can include sumps

# HW TANKS

- All hazardous waste tanks must be:
  - Marked with the words “Hazardous Waste”.
  - Marked with the accumulation start date.

# HAZARDOUS WASTE TANKS



Storage tank  
properly labeled

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# HW TANKS

## CESQG, KSQG, and SQG

- Additional requirements for tanks managed by CESQG, KSQG, and SQG:
  - Ensure that ignitable and reactive wastes stored in tanks meet the requirements of 40 CFR 265.17(b) (see later slide); and also meet all of the following:
    - Waste must be compatible with other contents or previous contents unless the requirements of 40 CFR 265.17(b) are complied with;
    - Ensure that HW and treatment reagents do not cause the tank, ancillary equipment or secondary equipment to fail;
    - Ensure at least 2 feet of freeboard for uncovered tanks, unless the tank is quipped with a containment structure, drainage control system, or a diversion structure with a capacity that equals or exceeds the volume of the top 2 feet of the tank.
    - If the tank is continuously fed, ensure that inflow can be stopped if necessary.

# HW TANKS

## CESQG, KSQG, and SQG

- Additional requirements for tanks managed by CESQG, KSQG, and SQG:
  - Inspect the following:
    - Discharge control equipment (daily);
    - Data gathered from monitoring equipment (daily);
    - The level of waste in the tank (daily);
    - Construction materials of the tank (weekly);
    - Construction materials of, and the area surrounding, discharge confinement structures (weekly).

# HW TANKS

## CESQG, KSQG, and SQG

- Additional requirements for tanks managed by CESQG, KSQG, and SQG:
  - Note: Those areas listed above as inspected daily can be inspected weekly if the tank has secondary containment and one of the following:
    - Leak detection equipment to alert facility personnel to leaks; or
    - Established workplace practices to ensure leaks are promptly identified.

# HW TANKS

## 40 CFR 265.17

40 CFR 265.17 – General requirements for ignitable, reactive, or incompatible wastes.

Generator must:

- Protect from sources of ignition or reaction; including posting “No Smoking” signs conspicuously (applies only to LQG) (40 CFR 265.17(a));
- Ensure that waste does NOT (40 CFR 265.17(b)):
  - generate extreme heat or pressure, fire, or explosion, or violent reaction;
  - produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;
  - produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
  - damage the structural integrity of the device or facility containing the waste; or
  - threaten human health or the environment through other like means.

# HW TANKS LQG

- If the tank was used to store hazardous waste on or before 7/14/86, then it is an “existing tank”. If not, it is a “new tank”.
- Requirements for existing tanks and tank systems:
  - 40 CFR 265.193(a)(2) requires that all existing tanks older than 15 years (all are now older than 25 years) must have secondary containment meeting the same standards as new tanks.

# HW TANKS LQG

- Requirements for new tank and tank systems:
  - Assessment of structural integrity by a PE – with records maintained at facility.
  - Maintain secondary containment to the standards of 40 CFR 265.193(c) and 265.193(e).
  - Provide ancillary equipment with secondary containment or inspect daily.
  - Use control systems and practices to prevent spills and overflows.

# HW TANKS LQG

- Unless one of the following is available:
  - Leak detection equipment; or
  - KDHE-approved established workplace practices for prompt leak identification.

Inspections must be conducted and documented daily of all of the following (weekly if above are available): (see next slide)

# HW TANKS LQG

## Inspections:

- Data from monitoring and leak detection equipment (no weekly option).
- Overfill/spill control equipment
- Above-ground portions of tank systems to detect corrosion or releases
- Construction materials and areas around tank and secondary containment to detect erosion or leaks
- Ancillary equipment that is not provided with secondary containment (no weekly option).

# HW TANKS LQG

If cathodic protection is used:

- proper operation must be confirmed within 6 months after installation and annually thereafter; and
- impressed current sources inspected/tested bi-monthly.

# HW TANKS LQG

- If ignitable or reactive waste is placed in a tank system, at least one of the following must be true:
  - Waste is treated, rendered, or mixed before or immediately after placement in the tank system so that it is no longer ignitable or reactive and the requirements of 265.17(b) are complied with; or
  - Waste is stored or treated in a way that protects it from ignition or reaction; or
  - The tank system is used solely for emergencies.

# CONTACT INFO

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# Questions



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