

BASIC HAZARDOUS WASTE GENERATOR WORKSHOP 2015



Our Mission: To protect and improve the health and environment of all Kansans.

BASIC WORKSHOP OVERVIEW

- Will not be a substitute for training your employees (job specific training is still required).
- Will introduce you to the basics of RCRA.
 - Waste Classification (waste determination)
 - Generator Requirements
 - Managing Containers
 - Compliance and Enforcement Overview
- Opportunity for questions.

TOPICS FOR AFTERNOON – IN-DEPTH WORKSHOP

- ❖ Will discuss hazardous waste (HW) management topics in more detail, including:
 - Review Solvent-Contaminated Wipes Rule in KS
 - Changing Generator Status (routine and one-time events)
 - Notification forms
 - Used Oil Requirements
 - Used Antifreeze
 - Aerosol Cans
 - e-waste
 - e-Manifesting Update
 - Universal Waste
 - K, U, and P-listings
 - F001-F005 listings
 - Solvent recycling and accounting
 - Navigate the KDHE website
 - Enforcement case overview
 - Outreach – Compliance Training Manual

REGULATORY BACKGROUND

- Resource Conservation and Recovery Act (RCRA) enacted in 1976
- EPA implemented hazardous waste regulations in 1980
- Kansas Hazardous Waste Program began in 1982
- Major revisions to Kansas Hazardous Waste Program effective April 29, 2011
- Technical revisions and adoption of RCRA Corrective Action in 2013

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Why???



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Why???



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RCRA OVERVIEW

The Resource Conservation and Recovery Act, or RCRA, is a “cradle to grave” law.

- All waste must be evaluated and properly managed from the point of generation until final disposal.
- Everyone handling, managing, and otherwise being in possession of that waste at the point of generation until final disposal can be held responsible for that waste.
- Ignorance of the law is not an excuse for not following the law.

GENERATOR'S RESPONSIBILITY

All hazardous waste generators must:

- Identify all solid and hazardous waste streams
- Determine the quantity of each hazardous waste generated over time (no averaging)
- Ensure proper handling and disposal of all wastes

HAZARDOUS WASTE DETERMINATION

- Step one, determine if it is discarded material. A material is considered discarded if it is:
 - Abandoned (disposed, burned, accumulated, treated, or stored)
 - Recycled (spent solvent in distillation system)
 - Considered inherently waste-like

Abandoned



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Abandoned or Discarded



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Discarded



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Inherently Waste Like

(And
potentially
very
dangerous.)



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HAZARDOUS WASTE DETERMINATION

- Step two, determine if it is a solid waste:
 - Solid waste can be:
 - Liquid
 - Semi-Solid
 - Gas
 - Materials are solid waste even if they are recycled or are accumulated, stored, or treated prior to recycling.



HAZARDOUS WASTE DETERMINATION

Example – Solids from distillation of waste solvent (solvent recycling unit)

- Step 1 – Is it discarded?

Yes, the material cannot be used again for any purpose.

- Step 2 – Is it solid waste?

Yes, it is a physically sludge/solid material.

HAZARDOUS WASTE DETERMINATION

- Step three, determine if the waste is specifically excluded (40 CFR 261.4):
 - Discharged to the POTW or a permitted NPDES outfall
 - Mining overburden
 - Household waste
 - Agricultural waste
 - Oil and gas waste



HAZARDOUS WASTE DETERMINATION

Example – Solids from distillation of waste solvent (solvent recycling unit)

- Step 3 – Is it excluded or exempted from the definition of solid or hazardous waste?

No, the material does not fall under any of the exemptions or exclusions so it is a solid waste subject to hazardous waste determination.

HAZARDOUS WASTE DETERMINATION

- Step four, determine if the solid waste meets the definition of hazardous waste.
 - Determinations can be made in two ways:
 - Knowledge of process (or generator knowledge)
 - Testing by KDHE-certified laboratory
- <http://www.kdhe.state.ks.us/envlab/>
- All waste determinations must be documented.



HAZARDOUS WASTE DETERMINATION

- Is it “listed” hazardous waste?
- Is it “characteristic” hazardous waste?

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LISTED HAZARDOUS WASTE

Does the waste appear on the F, K, P, or U lists?

- F-Listed (non-specific sources)
- K-Listed (specific sources)
- P-Listed (acutely hazardous discarded commercial chemicals - regulated at 2.2 lbs)
- U-Listed (discarded commercial chemicals)



HAZARDOUS WASTE DETERMINATION

Example – Solids from distillation of waste solvent (solvent recycling unit)

- Is my waste a listed hazardous waste?

Maybe:

Look at the waste determinations for the solvents being recycled. If any of them are listed hazardous waste, then it is a listed hazardous waste for the same listings (most common F003, F005)

HAZARDOUS WASTE DETERMINATION

Example – Solids from distillation of waste solvent (solvent recycling unit)

For our example, we will say that waste xylene used for cleaning was being recycled in the distillation unit. Xylene is on the F003 list so the waste solvent is F003 listed hazardous waste. Therefore, the still bottoms will also be an F003 listed hazardous waste.

HAZARDOUS WASTE DETERMINATION

Note- the afternoon session will include a detailed discussion of F001-F005 solvent listings.

CHARACTERISTIC HAZARDOUS WASTE

Does the waste meet one of the four characteristics?



Ignitability (D001)

(Flashpoint less than 140 °F)



Corrosivity (D002)

(pH ≤ 2 or ≥ 12.5)



Reactivity (D003)



Toxicity (D004 –D043)

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HAZARDOUS WASTE DETERMINATION

Example – Solids from distillation of waste solvent (solvent recycling unit)

- Is my waste a characteristic hazardous waste?

Maybe, wet and sludgy still bottoms might flash below 140 degrees Fahrenheit. Hard, dry still bottoms are not generally ignitable under the definition.

HAZARDOUS WASTE DETERMINATION

Example – Solids from distillation of waste solvent (solvent recycling unit)

Non-liquids (solids) are only considered ignitable if they are capable under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burn so vigorously and persistently that they create a hazard.

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HAZARDOUS WASTE DETERMINATION

Example – Solids from distillation of waste solvent (solvent recycling unit)

- Is my waste a characteristic hazardous waste?

Lets say our still bottoms are rock hard, and will therefore only carry the F003 waste code, so it is a listed waste, but not characteristic for ignitability, corrosivity, or reactivity.

TOXICITY

Analyze using the Toxicity Characteristic Leaching Procedure (TCLP) for one or more of the following:

- Heavy Metals
- Volatile Compounds
- Pesticides/Herbicides
- Base Neutral Acids



HAZARDOUS WASTE DETERMINATION

Example – Solids from distillation of waste solvent (solvent recycling unit)

- Is my waste toxic?

No, I can use my knowledge of the process by looking at the Safety Data Sheets (SDS) for all of my paints and solvents. None of them contain metals or anything else (Volatiles) on the toxic lists so I do not need to test my still bottoms; I know they are not toxic.

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DOCUMENT THE DETERMINATION

- Document how each waste determination was made.
- Required for hazardous and non-hazardous waste.
- Include copies of all supporting documentation that was used (analytical reports, design plans, SDSs, etc.).
- Waste profiles by themselves are not generally sufficient waste determinations or documentation.
- Keep documentation for 3 years from the date the waste was last shipped off site.

Waste Determination Documentation Form

Facility Name: XYZ Company

Waste Name: Still Bottoms

Description of Process: Distillation of Waste solvent

Pounds of waste generated each month: 25 lbs

Does this waste meet the definition of a solid waste? **Yes** No

Is this waste exempt from the definition of solid waste or hazardous waste? Yes **No**

Was laboratory analysis used to make this determination? Yes **No**

If yes, record the name and KDHE certificate number for the laboratory: _____

If yes, **attach** a copy of the analytical results to this sheet.

Was knowledge of the process used to make this determination? **Yes** No

If yes, list the name and date of each document (MSDS, process flow diagrams, etc.) reviewed and/or **attach** them to this sheet:

Sherwin-Williams All surface Enamel-Oil Base Satin Ultradeep Base – A11T214

Science Lab.com Xylenes

Is this waste non-hazardous? Yes **No**

Is this waste a listed hazardous waste? **Yes** No

If yes, list waste codes: F003

Is this waste a characteristic hazardous waste? Yes **No**

If yes, list waste codes: _____

List the name and title of the person making this determination: Rebecca Wenner, Env Scientist

Date of this determination: 7/16/2015

CONTRACTORS AND CONSULTANTS

- Don't rely entirely on your contractor and/or waste disposal company.
 - It is your (the generator's) responsibility to make the waste determination.
 - You (the generator) sign the manifest confirming that the information is correct.
 - The contractor may not know very much about your processes and may miss listed and characteristic hazardous waste (HW).
 - You receive the violations, not the contractor!





Things that are not HAZARDOUS WASTES



- Medical Waste – waste generated in connection with human or animal care, which is potentially capable of causing disease or injury. Not necessarily a hazardous waste, but probably a “special waste”.
- Used Oil – Used oil that is recycled for energy or material recovery is not subject to the hazardous waste regulations.

GENERATOR CLASSIFICATIONS

Kansas has four generator classes:

- Conditionally Exempt Small Quantity Generator (CESQG) (about 4,350 in KS)
- Kansas Small Quantity Generator (KSQG)
 - Unique to Kansas (about 700 in KS)
- Small Quantity Generator (SQG) (about 572 in KS)
- Large Quantity Generator (LQG) (about 251 in KS)

GENERATOR CLASSIFICATIONS

CESQG – Conditionally Exempt Small Quantity Generator

- Generates less than 55 pounds (lbs) of HW per month; and
- Generates less than 2.2 lbs of acutely HW per month; and
- Accumulates less than 2.2 lbs of acutely HW at any time.

GENERATOR CLASSIFICATIONS

KSQG – Kansas Small Quantity Generator

- Generates 55 lbs or more, but not more than 220 lbs of HW per month; and
- Generates less than 2.2 lbs of acutely HW per month; and
- Accumulates less than 2.2 lbs of acutely HW at any time.

GENERATOR CLASSIFICATIONS

SQG – Small Quantity Generator

- Generates more than 220 lbs but less than 2,200 lbs of HW per month; and
- Generates less than 2.2 lbs of acutely HW per month; and
- Accumulates less than 2.2 lbs of acutely HW at any time.

GENERATOR CLASSIFICATIONS

LQG – Large Quantity Generator

- Generates 2,200 lbs or more of HW per month; and/or
- Generates 2.2 lbs or more of acutely HW per month; and/or
- Accumulates more than 2.2 lbs of acutely HW at any time.

GENERAL REQUIREMENTS

KSQGs, SQGs, and LQGs must meet the following requirements:

- Obtain an EPA ID number
- Update notification form within 60 days of information changing

Note: Notification forms will be covered in detail in the afternoon session.

- Pay an annual monitoring fee to KDHE

PREPAREDENESS & PREVENTION

- KSQGs and SQGs must meet all of the following requirements if they accumulate hazardous waste on-site:
 - Have an emergency coordinator available 24/7
 - They should be able to reach the facility within 30 minutes.
 - They should be familiar with emergency procedures and locations of waste.
 - Post the following information next to a telephone
 - Name and telephone number of emergency coordinator;
 - Location of fire extinguishers, spill control material and fire alarm (if present);
 - Telephone number of the fire department, unless direct alarm is available.

Example form available on KDHE's Website

HAZARDOUS WASTE EMERGENCY RESPONSE

EMERGENCY COORDINATOR: _____

HOME PHONE NUMBER: _____

CELL PHONE NUMBER (Optional): _____

ALTERNATE: _____

HOME PHONE NUMBER: _____

CELL PHONE NUMBER (Optional): _____

FIRE PHONE NUMBER (unless there is a direct alarm): _____

EQUIPMENT LOCATION

(A map showing the locations is sufficient)

FIRE EXTINGUISHERS: _____

FIRE ALARMS (if present): _____

SPILL CONTROL: _____

RESPONSE ACTION

FIRE: Call the Fire Department, or extinguish the fire using an appropriate fire extinguisher.

SPILL: Contain the flow of hazardous waste. Clean up the hazardous waste and any contaminated materials or soil as soon as possible.

FIRE, EXPLOSION, OR RELEASE WHICH THREATENS HUMAN HEALTH OR SURFACE WATER:

Notify the National Response Center with the following information:

- Name, address, and US EPA ID number of generator
- Date, time, and type of incident
- Quantity and type of hazardous waste involved
- Extent of any injuries
- Estimated quantity and disposition of recovered materials

NATIONAL RESPONSE CENTER 1-800-424-8802

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT (785) 296-1679

PREPAREDNESS & PREVENTION

- KSQGs and SQGs (Continued)
 - Provide training to employees to ensure that all personnel are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies
 - Provide training within 6 months of hire or transfer to a new position;
 - Provide annual training;
 - Document the training and maintain records for 3 years.

Example form
 available
 in the Compliance/
 Training Manual
 on KDHE's Website

ATTACHMENT A

HAZARDOUS WASTE MANAGEMENT TRAINING DOCUMENTATION

Employee Name: _____
 Employee Title/Position: _____
 Waste or area for which employee responsible: _____

Description of Training	Date	Initials
Hazardous Waste Generator Classifications		
KDHE notification of hazardous waste activity		
Identification of hazardous waste (hazardous waste determination)		
Emergency response (fire, spills, etc.)		
Ensure that emergency preparedness requirements are met (Arrangements are made with local emergency response agencies including fire, police, and hospitals)		
Recordkeeping		
Container management		
Labeling containers "Hazardous Waste"		
Properly closing hazardous waste containers		
Marking storage containers with the accumulation start date		
Inspecting hazardous waste storage areas to ensure that containers are in good condition, properly labeled and closed, have proper aisle space and that incompatible wastes are not stored together.		
Properly documenting hazardous waste storage area inspections		
Ensuring that satellite accumulation containers are properly managed		

PREPAREDENESS & PREVENTION

- All KSQGs, SQGs, and LQGs must:
 - Equip the facility with:
 - Internal communications or alarm system
 - A device such as a telephone or hand-held two-way radio capable of summoning emergency assistance from local emergency responders

PREPAREDENESS & PREVENTION

- All KSQGs, SQGs, and LQGs must:
 - Equip the facility with:
 - Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment
 - Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems

PREPAREDENESS & PREVENTION

- All KSQGs, SQGs, and LQGs:
 - Must attempt to make arrangements with local emergency organizations including:
 - Familiarize police, fire departments, and hospitals with facility, hazardous waste handled, etc.
 - Where more than one department might respond, designate one as the primary emergency authority.
 - Maintain agreements with state emergency response teams, emergency response contractors, and equipment suppliers, as necessary.

PREPAREDENESS & PREVENTION

- All KSQGs, SQGs, and LQGs must:
 - Maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste.
 - Test and maintain all emergency and communications equipment to assure proper operation in an emergency.
 - Ensure personnel have immediate access to internal alarm or emergency communication device when handling hazardous waste.

FAILURE TO MAINTAIN AND OPERATE

No effort made
to stop leaking
from tote of
flammable
materials



PREPAREDENESS & PREVENTION

- LQGs must:
 - Prepare and maintain (update) a contingency plan that meets all of the requirements of 40 CFR 265 Subpart D.
 - Ensure that the contingency plan is available in case of an emergency.
 - Train employees and maintain required training records.

MANAGEMENT ON-SITE

- On-site accumulation of hazardous waste can occur in:
 - Satellite Accumulation Containers (satellite containers)
 - Storage Containers (less than 90-day or less than 180-day accumulation containers)
 - Tanks

MANAGEMENT ON-SITE

- All containers and tanks must be:
 - Labeled with the words “Hazardous Waste”
 - In good condition and compatible with the contents of the container or tank
 - Kept closed unless actively adding or removing waste.

SATELLITE CONTAINERS

- Satellite containers must meet the following requirements:
 - Be at or near the point of generation
 - Under the control of the operator
 - Only 1 container for each waste stream at each point of generation (different than EPA)
 - 55 gallons or less in size
 - Marked with the words “Hazardous Waste” (more specific than EPA)
 - Closed and in good condition.

SATELLITE CONTAINERS



This container is marked with the words “Hazardous Waste” and is thus properly labeled.

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GOOD SATELLITE CONTAINERS



This container meets satellite container requirements:

- At or near the point of generation
- Under the control of the operator
- Marked “Hazardous Waste”
- Closed
- In good condition
- 55 gallons or less.

SATELLITE CONTAINERS



Open because
it is not
latched.

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SATELLITE CONTAINERS



Open satellite
container

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SATELLITE CONTAINERS



Open satellite container, duct tape is not a sufficient latch.

This drum is adequately labeled because “hazardous waste” label is legible through clear liner.

SATELLITE CONTAINERS



Two (2)
Containers at
the same point
of generation

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SATELLITE CONTAINERS



Two (2)
Containers at
the same point
of generation

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STORAGE CONTAINERS

- There is no state or federal limit to the number of storage areas at a facility.
- Can be located indoors or outside (we recommend that they be under cover, and/or on pallets, but it is not required).
- Secondary containment is recommended but is not required.
- LQGs must store ignitable hazardous waste at least 50 feet from the property line.

STORAGE CONTAINERS

- Storage containers must meet the following requirements:
 - Incompatibles must be separated (this includes separating wastes from products to which they are incompatible)
 - Aisle space must be adequate to allow unobstructed movement of people and equipment in case of an emergency

GOOD STORAGE AREAS

Good aisle space



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GOOD STORAGE AREAS



Good outdoor storage (but recommend only 2 drums high)

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STORAGE AREAS



Aisle space is a problem, Boxes and bags all contain hazardous waste

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STORAGE CONTAINERS

- Requirements for storage containers (continued):
 - Marked with the words “Hazardous Waste”
 - Marked with the accumulation start date (date that storage began)
 - Closed and in good condition.

STORAGE AREAS



This drum is labeled “hazardous waste”, but has no accumulation start date, and is in poor condition – Note the large dent.

STORAGE AREAS

Poor condition



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STORAGE AREAS

Not clearly marked “Hazardous Waste”



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STORAGE CONTAINERS

- Must be inspected weekly (LQG and SQG) or monthly (KSQG and accumulating CESQG).
 - Should include review of all storage container requirements
 - Must inspect for deterioration and leaks

STORAGE CONTAINERS

- Inspections must be documented and records maintained on-site for 3 years. Must document all of the following:
 - Date and time of the inspection
 - Name of the inspector (not initials)
 - Notation of the observations made
 - Date and nature of any repairs or other remedial actions.

STORAGE CONTAINERS

- Accumulation time limits:
 - LQGs – 90 days or less
 - SQGs – 180 days or less (or 270 days or less if the waste is transported more than 200 miles)
 - If exceed 13,200 lbs (6,000 kg) of hazardous waste on-site or exceed time limit, then must meet **TSDF** requirements (obtain a permit).
 - KSQGs and CESQGs – No accumulation time limit (unless you accumulate more than 2,200 pounds on-site, then you become a SQG and the 180-day limit starts)
 - Exceeding time limits could require a permit and/or paying fees for the higher generator class or TSDF.



COMPLIANCE EVALUATION INSPECTION

- Inspections are unannounced
- Routine inspections are chosen months in advance, based on the following:
 - Generator classification
 - Amount of time since last inspection
 - Industry sector priorities established by EPA or KDHE
 - Enforcement
- Complaints can result in a full RCRA inspection
- Compliance Assistance Visits (CAV) are available

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COMPLIANCE EVALUATION INSPECTION

- Inspections can be broken into four basic parts:
 - Introduction and review of information
 - Walk-through inspection of facility
 - Records review
 - Exit briefing



COMPLIANCE EVALUATION INSPECTION

Questions the inspector will ask about your waste streams:

- How much of each waste stream is generated in a month?
- How is each managed/contained/stored?
- How is each disposed?
- Is it hazardous waste?
- How did you determine whether or not it is hazardous?
- What documentation do you have for your determination?

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COMMON VIOLATIONS and HOW TO PREVENT THEM

- Waste Determinations
- Container Management
- Preparedness and Prevention
- Training
- Unlawful Acts

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RESOURCES AVAILABLE

- Hazardous Waste Generator Handbook
- Compliance/Training Manual
- Inspector Checklists
- Technical Guidance Documents and Policies
- Website

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RESOURCES AVAILABLE

- KDHE wants to help all generators achieve compliance. Please call us with any questions.
- Small Business Environmental Assistance Program (SBEAP) operated by the Pollution Prevention Institute (PPI) at KSU 1-800-578-8898 (free anonymous assistance).

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CONTACT INFORMATION

- BWM web site:
<http://www.kdheks.gov/waste>
- [Ken Powell](#)
[785-296-1121](tel:785-296-1121)
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Questions



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