

# Methods of Managing Hazardous Waste That May Constitute Illegal Treatment

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# Treatment

- In 1998, Ohio EPA changed the rules to allowed for the treatment of hazardous waste by generators.
- Ohio EPA Guidance on [Generator Treatment](http://epa.ohio.gov/portals/32/pdf/Generator_Treatment_Guidance.pdf) can be found at:  
[http://epa.ohio.gov/portals/32/pdf/Generator\\_Treatment\\_Guidance.pdf](http://epa.ohio.gov/portals/32/pdf/Generator_Treatment_Guidance.pdf)



# Legal Treatment vs. Illegal Treatment

- Treatment usually starts out with good intentions.
- However, good intentions without the proper knowledge of the rules and of your waste usually fall short of the goal.
- The result may be unlawful activity. Ex. illegal treatment, transport, storage and/or disposal.
- Legal Treatment begins with a proper waste evaluation.



# Waste Evaluation

## Know your Process

- What materials am I using
- What contaminants may it pick up
- What waste do I generate
- What rules am I subject to

*See previous webinar recordings at*

<https://ohioepatrainingcatalog.custhelp.com>



# Waste Evaluation

What materials am I using?

- Knowing about the product that you use
- Review your MSDS -GHS->(SDS)they will give you an indication as to what types of waste you many produce.



# Waste Evaluation

What contaminants may my waste pick up?

- Based on the materials that are used and the process that generates your waste, what other contaminants may be present in your waste.
- Ex: Antifreeze is a non hazardous product, but after use it may pick up benzene and or lead.



# Waste Evaluation

What materials and/or waste do I have remaining?

- Can these items be reused as normally intended
- How do I manage these items?



# Waste Evaluation

Is my waste hazardous?

– Process Knowledge

- What products were used and how were they used?

– Analytical Testing

- Does my waste have any characteristics of a hazardous waste?



# My Waste is Hazardous

What rules apply to my waste?

- Can I treat my hazardous waste?
- Can I recycle my hazardous waste?



# What is Treatment?

- Treatment is defined in OAC rule 3745-50-10(A) as any method, technique or process—including neutralization—designed to change the physical, chemical or biological character or composition of any hazardous waste



# What is Treatment?

- Neutralize the waste;
- Recover energy or material resources from the waste;
- Render the waste nonhazardous or less hazardous;
- Make the waste safer to transport, store or dispose of;
- Make the waste easier to recover or store; or
- Reduce the waste volume.



# Can I Treat My Hazardous Waste On-site Without a Permit?

- As a generator, you are allowed to treat hazardous waste on-site without obtaining a hazardous waste permit if you comply with the requirements found in OAC rule 3745-52-34.



# Can I Treat My Hazardous Waste On-site Without a Permit?

- Large quantity generators (LQG) can treat/store waste for up to 90 days after generation.
- Small quantity generators (SQG) can treat/store waste for up to 180 days after generation.



## Can I Treat My Hazardous Waste On-site Without a Permit? (cont.)

- What about CESQG?
- As a CESQG, the rules do not allow you to treat your waste.
- To conduct treatment you must comply with the LQG requirements if you wish to treat your hazardous waste on-site. Again, these requirements can be found in OAC rule 3745-52-34.



# Can I Treat My Hazardous Waste On-site Without a Permit?

- A generator may treat Hazardous Waste in:
- Containers - OAC rules 3745-66-70 to 3745-66-77
- Tanks - OAC rules 3745-66-90 to 3745-66-101, except paragraph (C) of rule 3745-66-97 and rule 3745-66-100
- Drip pads - OAC rules 3745-69-40 to 3745-69-45  
(wood preserving only)
- Containment Buildings - OAC rule 3745-256-100 to 3745-256-102 (Usually for Large Volumes of solids)



# Treatment in Containers

## OAC Rule 3745-

- 66-70 Applicability of rule
- 66-71 Conditions of containers
- 66-72 Compatibility of waste with container



# Treatment in Containers

## OAC Rule 3745-

- 66-73 Management of containers
- 66-74 Inspections
- 66-76 Special requirements for ignitable or reactive waste
- 66-77 Special requirements for incompatible waste



# Treatment in Tanks

## OAC Rule 3745-

- 66-90 Applicability- tanks
- 66-91 Assessment of existing tank systems' integrity
- 66-92 Design and installation of new tank systems or components
- 66-93 Containment and detection of releases
- 66-94 General operating requirement
- 66-95 Inspections



# Treatment in Tanks

## OAC Rule 3745-

- 66-96 Response to leaks or spills and disposition of leaking or unfit tank systems
- 66-97 Closure and post-closure care
- 66-98 Special requirements for ignitable or reactive waste
- 66-99 Special requirements for incompatible wastes
- 66-101 Special requirements for generators of between one hundred and one thousand kilograms per month that accumulate hazardous waste in tanks



# What Type of Treatment will you be Conducting?

- Is your treatment intended to meet Land Disposal Restrictions (LDR) standards?

Or

- Is your treatment intended to make the waste safer for storage and transport but it is not intended to meet the LDR standards?



# Lawful Generator Treatment

Lawful Generator Treatment (no permit required)	Treatment Activities	Technology Treatment Unit
Mixing a waste exhibiting the characteristic of toxicity for lead with cement to stabilize the lead	stabilization	containment building, tank or container
Treating a characteristic waste water in an exempt waste water treatment unit with a flocculent to remove the hazardous constituents from the waste water	Waste water treatment	Exempt waste water treatment unit



# Lawful Generator Treatment

Lawful Generator Treatment (no permit required)	Treatment Activities	Technology Treatment Unit
Treating a hazardous corrosive sludge to land disposal restrictions (LDR) and disposing of the treated waste in a solid waste landfill	deactivation, neutralization	elementary neutralization unit, containment building, container or tank
Treating an ignitable resin by starting a polymerization reaction to form a solid non ignitable waste	polymerization	tank or container



# Lawful Generator Treatment

If you treat your hazardous waste to meet land disposal restrictions (LDR) under OAC Chapter 3745-270, you must:

- Develop and follow a written Waste Analysis Plan (WAP) pursuant to 270-07(A)(5).
- Comply with the notification and certification requirements found in 3745-270-07(A)(5)(c)-> 270-07(A) (3).



# Waste Analysis Plan

## OAC rule 3745-270-07(A)(5)

At a minimum it must contain:

- A detailed chemical and physical analysis of a representative sample of the prohibited waste being treated;
- All other information used to develop the plan;
- The selected frequency of testing to demonstrate the waste meets the LDR; and

The WAP must be kept in your on-site files and made available to inspectors.



# Treatment Facility Paperwork Requirements

## OAC rule 3745-270-07 (A)

(3) If the waste or contaminated soil meets the treatment standard at the original point of generation:

(a) With the initial shipment of waste to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each treatment, storage, or disposal facility receiving the waste, and place a copy in the generator's files. The notice must include the information in column B of table 1 of OAC rule 3745-270-07 and the following certification statement, signed by an authorized representative:



# Treatment Facility Paperwork Requirements

- "I certify under penalty of law that I personally have examined and am familiar with the waste, through analysis and testing or through knowledge of the waste, to support this certification that the waste complies with the treatment standards specified in rules 3745-270-40 to 3745-270-49 of the Administrative Code. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."



# Treatment Facility Paperwork Requirements

Required information	3745-270-07(B)
1. EPA hazardous waste numbers and manifest number of first shipment	X
3. The waste is subject to the LDRs of Chapter 3745-270 of the Administrative Code. The constituents of concern for F001 to F005 and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.	X
4. The notice must include the applicable wastewater/nonwastewater category [see the definitions of "wastewaters" and "nonwastewaters" in of rule 3745-270-02 of the Administrative Code and subdivisions made within an EPA hazardous waste number based on waste-specific criteria (such as D003 reactive cyanide)].	X

# Treatment Facility Paperwork Requirements

Required information	3745-270-07(B)
5. Waste analysis data (when available)	X
8. For contaminated soil subject to LDRs as provided in paragraph (A) of rule 3745-270-49 of the Administrative Code, the constituents subject to treatment as described in paragraph (D) of rule 3745-270-49 of the Administrative Code, and the following statement: "This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by paragraph (C) of rule 3745-270-49 of the Administrative Code."	X
9. A certification is needed (see applicable rule for exact wording)	X



# May I Treat my Hazardous Waste and Dispose of it in a Solid Waste Landfill?

- Yes and No
- No if you have treated a listed hazardous waste
  - Except if it is only listed because it is ignitable, corrosive and/or reactive. Exemption found in 3745-51-03(G)
- You cannot dispose of the treated listed waste in a solid waste landfill.
- It must be sent to a hazardous waste landfill.



# May I Treat my Hazardous Waste and Dispose of it in a Solid Waste Landfill?

- No if you have treated a characteristic hazardous waste to the LDR standards but the waste is still hazardous
  - Ex: You have treated your TCE waste that was tested at 1 ppm by the TCLP method and 5 ppm total
  - The regulatory hazardous level is .5 ppm TCLP
  - The waste meets the LDR treatment standard of 6 ppm total, however



# May I Treat my Hazardous Waste and Dispose of it in a Solid Waste Landfill?

TCE example cont.

- You cannot dispose of this treated waste in a solid waste landfill because it is still hazardous.
- It must be sent to a hazardous waste landfill.
  - You can notify the landfill that it meets the treatment standard



# May I Treat my Hazardous Waste and Dispose of it in a Solid Waste Landfill?

(Yes)

- If you have treated a characteristic hazardous waste to meet the LDR standards and it is not hazardous
- You may dispose of it in a solid waste landfill
- You instituted your WAP
- You submit the proper paperwork in OAC rule 3745-270-07 and
- The landfill's approval



# Generator Treatment Not meeting LDR's

- If you are treating a hazardous waste but it is not intended to meet LDRs
- You are not required to have a WAP.
- You must notify the disposal facility about all of the LDR's that must be met before the waste is land disposed.
  - Including the treatment you conducted to make the waste safer for storage or transport



# Can I Dilute My Hazardous Waste?

- OAC rule 3745-270-03 prohibits dilution of a hazardous waste to meet LDRs.
- If you are a generator and/or handler, you may not in any way dilute a hazardous waste or the residual from treatment of a hazardous waste as a substitute for adequate treatment to achieve compliance with the LDRs.



# Are there any Dilution Exceptions?

- There are exceptions that allow dilution
  - OAC rule 3745-270-03(B)
- Allows you to dilute characteristic hazardous
  - In a Waste water treatment unit (tanks)
  - Provided the unit discharges under a National Pollutant Discharge Elimination System (NPDES) or a Clean Water Act (CWA) equivalent treatment system



# Are there any Dilution Exceptions?

- Unless a method other than DEACT has been specified in rule 3745-270-40 of the Administrative Code



# What about the Waste that is generated from treating my Hazardous Wastewater?

- If you generate any waste from treating your wastewater in the treatment unit (sludge)
- This new waste must be evaluated to determine if it is regulated
- If it is a waste hazardous
- The LDRs apply



# Wastewater Treatment

- This facility is treating a hazardous wastewater in a tank to precipitate out the hazardous metals before discharging the waste water to a sanitary sewer.
- The sludge needs to be evaluated



# Other forms of Impermissible Dilution

- Adding a bulking agent to a characteristic waste to lower TCLP results.
- Adding water to a “high TOC” flammable hazardous waste to eliminate the flammability.



# May I use an Evaporator to Treat My Hazardous Waste?

- There are limited uses of an evaporator for the treatment of hazardous waste.
  - Aqueous waste that does not contain any solvents or volatile hazardous metals
  - If Aqueous waste contains solvents or volatile hazardous metals, must first remove by filtration or some other manner before evaporation.



# May I use an Evaporator to Treat My Hazardous Waste? (cont.)

- Evaporators can be used to concentrate certain inorganic wastes, such as acidic solutions with heavy metals.
- However, some metals such as lead and mercury, can be released to the air at certain temperatures.



# May I use an Evaporator to Treat My Hazardous Waste? (cont.)

- The overriding determinant is that hazardous waste or hazardous waste constituents may not be released to the environment
- This would be considered disposal



# Evaporator

- Waste water is evaporated in a tank.
- It may be part of a waste water treatment system.
- They could be stand alone batch units



# Elementary Neutralization

- This method may be conducted on a waste that only exhibits the characteristics of corrosivity, D002
  - Liquid with a pH of  $\leq 2$  or a pH  $\geq 12.5$
  - Meets definition of elementary neutralization found in OAC rule 3745-50-10 A (35)



# Elementary Neutralization

- This is an LDR treatment standard.
- Therefore as long as the waste only exhibits the characteristics of corrosivity, once it has been treated it could be discharged to the wastewater treatment plant with their permission.



# Elementary Neutralization

- The facility is treating the corrosive waste by raising the pH so it is no longer hazardous. This waste was not hazardous for any other hazardous characteristics.



# Elementary Neutralization

- Treatment not meeting LDR standard
- The waste exhibits the characteristics of corrosivity and contains heavy metals
- You treat for the corrosivity
- The waste needs to be shipped out to be treated for the metals.
- Notify treating facility for all characteristics that must be treated including corrosivity



# Are Recycling Units Considered to be Treatment Units?

- Yes. Recycling units are treatment units
- The recycling process has been exempt for some time according to OAC rule 3745-51-06
- However, as a generator you must comply with the applicable provisions of OAC rule 3745-52-34
  - Which provides management requirements for accumulation of hazardous waste before recycling



# Example: A Solvent Distillation Unit

- The solvent may be reused numerous times
- The spent solvent must be managed as a hazardous waste prior to recycling
- The initial spent solvent must be counted towards your generator status at the beginning of each month
- The subsequent still bottoms must be managed appropriately and counted if required
  - Spent solvent counted once
  - Still bottoms counted after the solvent has been counted



## Example: A Solvent Distillation Unit

**Advisory:** The original discussion about recycling 50 gallons of spent solvent has been amended to clarify the correct methods of counting recycled solvent toward waste generation. See [“Additional information regarding solvent distillation units”](#) available on Ohio EPA’s Training Catalogue for this session.



# Example: A Solvent Distillation Unit

## Still Bottoms

- From listed hazardous waste solvent continue to be a listed hazardous waste.
- From a characteristic hazardous waste solvent are only hazardous if they continue to exhibit the characteristics of a hazardous waste.
- See the [Mixture and Derived from rule guidance](#) at
- <http://www.epa.ohio.gov/portals/32/pdf/MixtureDerivedFromRule.pdf>



This is an example of a Distillation Unit



Are the still bottoms hazardous?  
It depends



# What if my waste can be managed under several different regulations?



- Bulbs could be managed as a Universal waste, or a Hazardous waste or a Solid waste
- The management standard will depend on the bulbs ultimate disposition.
- Where will the bulbs end up?

# What if my waste can be managed under several different regulations?

- Disposal -> Hazardous Waste + Bulb crushing = Treatment
  - Ok, because you are not treating to meet LDR
- Recycling -> Hazardous Waste + Bulb crushing = Treatment
  - Ok, because you are not treating to meet LDR
- Recycling -> Universal Waste + Bulb crushing = **Improper Treatment**
  - Because UW Handler can not conduct treatment
- Disposal -> Solid Waste + Bulb crushing = Treatment
  - OK, but the bulb must be non-hazardous before crushing



# What if my waste can be managed under several different regulations?



- You must pick only one management standard
- You can not manage the bulbs as a Universal Waste, transporting them to another facility and then crush and dispose of them as a hazardous waste.

# Can I mix Hazardous Waste with my Used Oil?

- LQGs and SQGs can not mix a listed Hazardous Waste into their used oil.
- LQGs and SQGs may mix in a characteristic Hazardous Waste providing the resultant mixture does not exhibit any characteristic.
  - Managed as a used oil
- Therefore, all mixtures must be evaluated



# Can I mix Hazardous Waste with my Used Oil? (cont.)

- A CESQG is allowed to mix hazardous waste and used oil.
- The resultant mixture is managed as used oil.



# Can I dispose of my Shop Towels as a Solid Waste?

- Yes, under the following Federal conditions:
  - Stored in a closed container
  - There are no free liquids
  - You record the quantity of waste generated
  - They **do not** contain TCE or
- You may opt to follow Ohio EPA's current guidance until Ohio adopts the federal rule
- Adoption expected in Summer of 2014



# What about my Spent Solvent and Paint Filters?

- Paint filters are used to collect paint overspray.
- They are not intended to collect spent solvent from cleaning the gun.
- This attempt at treatment is illegal disposal.
- Both waste must be collected and evaluated separately.



# Can I wet down my spent paint filters and dispose of them as Solid Waste?

- If they are only an ignitable characteristic hazardous waste and
- It does not contain any hazardous characteristics or underlying hazardous constituents

Because DEACT is an LDR treatment standard  
They are now a solid waste.



# Can I Consolidate my Waste?

- This equipment will consolidate light weight low density items to make them easier to store and transport.
- This is treatment, but it is not intended to meet LDR standards
- Once compaction is complete the lid needs to be replaced
- Guidance for [consolidation](#) can be found at:  
[http://epa.ohio.gov/portals/32/pdf/Hazardous\\_Waste\\_Consolidation\\_Guidance.pdf](http://epa.ohio.gov/portals/32/pdf/Hazardous_Waste_Consolidation_Guidance.pdf)



# Can I use spent solvent as a weed killer?

- No
- This is not a treatment method
- This is not a recycling method
- It is not the product's intended use
- It is a use constituting disposal



# Are there other requirements you need to follow when treating your Hazardous Waste?

- You may be required to comply with federal RCRA regulations regarding air emissions from hazardous waste management – found in 40 CFR part 265 subpart AA, BB and CC.
- You can not allow volatiles to escape from your treatment and/ or recycling system.



# Sources of Information

- Generator Treatment Guidance

[http://epa.ohio.gov/portals/32/pdf/Generator Treatment Guidance.pdf](http://epa.ohio.gov/portals/32/pdf/Generator_Treatment_Guidance.pdf)

- Hazardous Waste Rules

<http://www.epa.ohio.gov/dmwm/dmwmrules/tabid/5797/LiveAcclId/122199/Default.aspx>

- Ohio EPA's Hazardous Waste Compliance & Inspection Support Unit, [614-644-2621](tel:614-644-2621)



# Sources of Information

- Ohio EPA Publications:
- <http://www.epa.ohio.gov/pic/facts/fslist.aspx>
- Ohio EPA Answer Place:  
<http://ohioepa.custhelp.com/>
- Previous webinar recordings at  
<https://ohioepatrainingcatalog.custhelp.com>



# Questions?

