

Potential RCRA Issues at VAP Sites and How to Avoid Them

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Center for Excellence



Introduction

Today's presentation is meant to be an informative follow-up to comments and questions raised during the previous CP Training held on October 23rd entitled "Impact of Hazardous Waste Rules on VAP".

It's meant to provide clear and concise guidance so CP's can make informed decisions, help comply with all applicable laws, and keep cleanup projects moving forward.

Introduction

We will be discussing the following aspects of RCRA and how they may relate to a VAP cleanup:

- LDR's (Land Disposal Restrictions)
- Listings (How to Determine)
- AOC's (Areas of Contamination)
- Contained-In Policy

4

Summary of Land Disposal Restriction (LDR)

- What are LDRs and how do we determine if/when LDRs apply?
- <http://www.epa.gov/osw/inforesources/pubs/orientat/rom36.pdf>

Basis for LDRs

- In recognition of the limitations of land disposal, Congress mandated US EPA to develop regulations requiring treatment of waste prior to disposal in order to minimize toxicity and leachate generation potential.
- US EPA developed treatment standards (LDRs) for each waste specifying treatment technologies or concentration level

LDR APPLICABILITY

- Generator to determine if the waste has to be treated before it can be land disposed.
- LDRs apply ...
 - only to HWs
 - at the point of HW generation
 - when any portion of a HW will be land disposed (i.e., placement of a restricted RCRA hazardous waste in a disposal unit is prohibited w/o first meeting LDR treatment standards)

7

LDR STANDARDS

- applicable treatment standards found in Rules 3745-270-40 to 3745-270-49 of the Ohio Administrative Code.
- Both listed and characteristic hazardous waste must meet LDR before land disposal

8

LDR STANDARDS

- Universal Treatment Standards (3745-270-48)
- Alternative LDR Contaminated Soils (3745-270-49)
- Debris (3745-270-45),
- Lab packs, (3745-270-42)
- As-generated waste (3745-270-40)

9

LDR STANDARDS

- Special requirement for generators of characteristic waste (3745-270-09)
- Generator must also identify reasonably expected underlying hazardous constituents (UHC)
- Determine Universal Treatment Standards (UTS) LDR for the UHC

10

LDR STANDARDS

- The UHC (underlying hazardous constituents) means any constituent found on the UTS LDR which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the UTS concentration. OAC 3745-270-02 (A)(9)
- UHCs are not what cause a waste to exhibit a characteristic but they can pose hazards

11

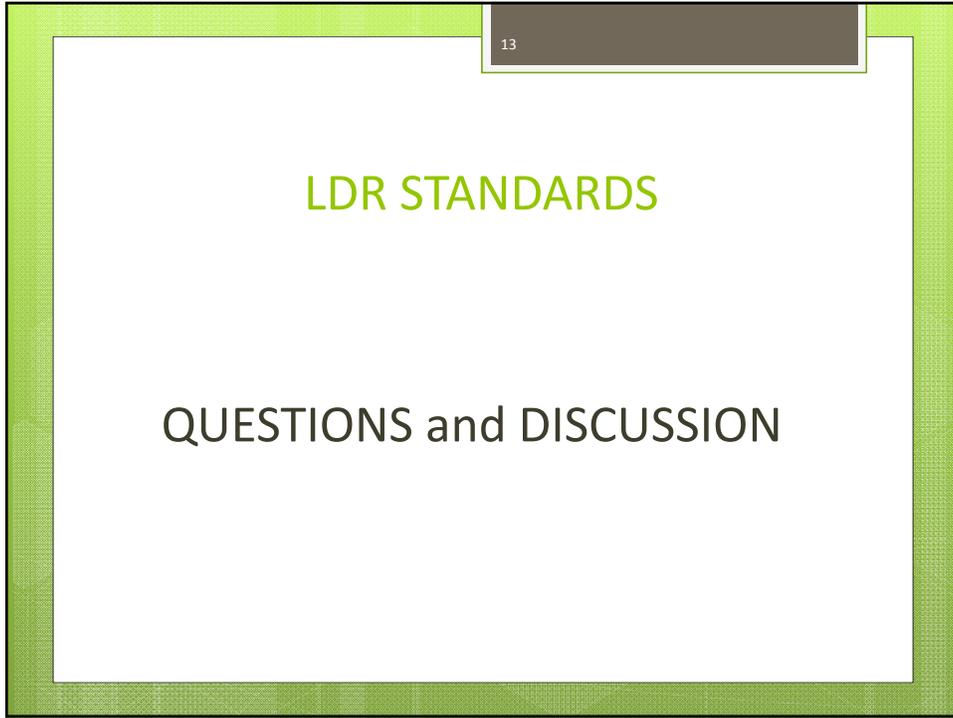
LDR STANDARDS

- The UTS (Universal Treatment Standards) rule of the LDR is the reason why some characteristic waste that no longer exhibit the characteristic must still be treated to meet LDR
- Once characteristic waste has been de-characterized and treated for UHC, the waste can be disposed of as non-hazardous.

12

LDR STANDARDS

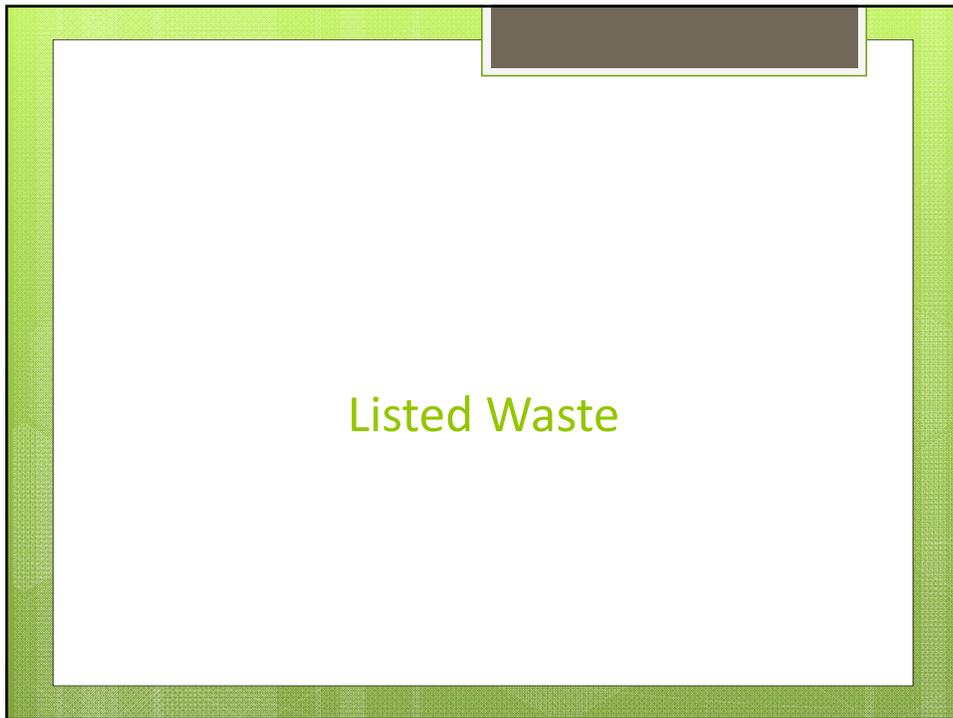
- Alternate LDR standards for Contaminated Soil
- Mandates reduction of hazardous constituents in the soil by 90% or 10X the UTS whichever is higher
- Removal of Characteristic is also required.



13

LDR STANDARDS

QUESTIONS and DISCUSSION



Listed Waste

15

Summary of RCRA HW Listings

- Management of waste in a cleanup must comply with RCRA requirements
- If a hazardous waste is generated RCRA applies.
 - Generator is responsible for characterizing waste.
 - Generator to determine if the waste has to be treated before it can be land disposed (LDR).
- Prior to management of material confirm and demonstrate it's NOT hazardous waste.

16

Hazardous Waste Requirements Two Key Questions:

- What is a hazardous waste ?
- What is a hazardous waste generator?
- <http://www.epa.gov/osw/inforesources/pubs/orientat/rom33.pdf>

What is a Hazardous Waste?

To be a hazardous waste, a material must first be a waste (OAC 3745-51-02).

A waste is any material that is discarded.

A material that can no longer be used is probably a waste.

(Media is not a waste but may contain it—concept for CIP)

Exclusions (OAC rule 3745-51-04):

- Samples
- Household hazardous waste, and others

What is a Hazardous Waste Generator?

- A hazardous waste generator is any person, by site, whose act or processes produces hazardous waste or whose act first causes a hazardous waste to become subject to the hazardous waste rules (see OAC Rule 3745-50-10).

19

To properly evaluate its waste, a generator must:

- Determine if waste is excluded
- Determine if waste is listed
- Determine if waste exhibits a characteristic (and if so, any UHCs for LDR)*

** do this by either testing or using generator knowledge of constituents in the waste and the process that produces the waste*

20

Determine if waste is excluded

Excluded wastes (OAC rule 3745-51-04):

- not waste
- not hazardous waste, or
- not subject to hazardous waste rules

Examples:

- Samples you send for analysis
- Excluded scrap metal when recycled
- Household hazardous waste

21

Determine if waste is listed

To determine if a listed waste, carefully compare the waste with the listing descriptions

22

Determine if waste is listed**

Non-specific waste sources (F listed) OAC rule 3745-51-31

Specific waste sources (K listed) OAC rule 3745-51-32

Discarded commercial chemical products (P and U listed) OAC rule 3745-51-33

***Hazardous waste listings are retroactive, and apply to wastes disposed prior to RCRA. Once a particular waste is listed, all wastes meeting that description are hazardous wastes no matter when disposed.*

23

F Listing Table Example

OAC 3745-51-31 Hazardous wastes from non-specific sources

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F002	The following <u>spent halogenated solvents</u> : Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use , a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)

24

Determine if waste exhibits a characteristic

- Test a representative sample of the waste
- Apply knowledge of hazardous characteristics/constituents in light of the materials or processes used (GENERATOR KNOWLEDGE)

Determine if waste exhibits a characteristic

Resources may include:

Testing of representative sample- OAC 3745-50-10 and 3745-51-20

Generator knowledge- OAC 3745-52-11

- Information from vendor/supplier
- Material Safety Data Sheet (MSDS)
- Process information

Listed Waste

QUESTIONS AND DISCUSSION

Policies that Facilitate Remediation

- Management of soils, waters and debris containing hazardous waste for the purpose of remediation is termed remediation waste.
- USEPA recognized that application of hazardous waste listings and land disposal Restrictions could impede site cleanup.
- USEPA developed policies to facilitate site cleanup when hazardous waste is present.

~What can help ~

USEPA Policies and Regulations to Facilitate Remediation

1. Area of Contamination Policy (AOC)
2. Contained-in Decision Policy



Area of Contamination Policy

Area of Contamination (AOC) policy was first enunciated in the preamble to the National Contingency Plan (NCP) in 1990 (55 CFR 8758-8760;1990).

- AOC: A discrete area of generally dispersed contamination that can be equated to a RCRA landfill.
- AOC policy can be used at any site undergoing remedial activities.

Does not require formal Agency “approval” –But if you misapply the concept you may be liable.

Area of Contamination Policy

AOC

- The AOC policy allows the movement of contaminated media with hazardous and solid wastes within an AOC without triggering land disposal restrictions (LDRs) or minimum technology requirements.
- This is not without restrictions because USEPA also discusses the concept of “placement” when RCRA requirements might apply.

Area of Contamination Policy

AOCs and Placement

Placement is an important consideration, because LDRs and other RCRA regulations can apply.

- Placement “does not occur” when remediation waste is consolidated within an AOC, treated in-situ or left in place.
- Placement “does occur” when wastes are moved from one AOC to another, or actively managed.

Area of Contamination Policy

AOCs and Placement

What is Active Management?

- Active management is when contaminated media is treated within an AOC or outside of an AOC and placed back into the AOC.
- OEPA has taken enforcement and received significant penalties for “Active Management” violations.

Area of Contamination Policy

How to Define and AOC.

- An area of contamination is usually defined through soil sampling.
- A site may contained multiple areas of contamination.
- An area of contamination may not be defined by groundwater contamination.

Area of Contamination Policy

QUESTIONS and DISCUSSION

CONTAINED-IN POLICY

Contained-in Decision Policy

Contained-In Decisions (CID)

- One impediment to site remediation is the cost associated with disposal and treatment of remediation waste that contains a listed hazardous waste.
- Soils or water with low concentrations of listed waste are still considered hazardous waste and must be managed as such.

Contained-in Decision Policy

- If the Director or a designate grants a favorable CID, then the waste “does not contain” a listed hazardous waste and can be disposed of in a Subtitle D landfill.
- DERR is currently working on a formal policy for contained-in requests. The general processing, submission requirements, and evaluation steps are as follows.

Contained-in Decision Policy

Submission for VAP Sites:

1. An upfront VAP Technical Assistance (TA) is recommended; or
2. A request in the form of a letter report can be made to the attention of Tiffani Kavalec, Manager Assistance, Cleanup, Reuse Section in Central Office. This letter request is not a TA nor is TA required to receive a contained-in decision.

Contained-in Decision Policy

The stand alone submission must contain sufficient background information on the volume of waste that will be granted the CID.

Information

- Site History
- Nature of the media (is it a mixture of media and waste)
- Listings attached to the media
- Hazardous constituents

Information

- Concentration levels
- Sampling and Analysis information
- Risk Assessment methods or standards
- Waste volume
- LDRs
- Disposal Facility

Contained-in Decision Policy

- CIDs use conservative risk assessments as part of the determination.
- OEPA's concept is to use Screening Levels (RSLs) for industrial settings with multiple chemical adjustment as a first approach.
- This is commensurate with disposal in a Subtitle D landfill.
- The use of screening values may not always be appropriate, then a full risk assessment must be presented for approval.

Contained-in Decision Policy

Problems encountered:

- Insufficient characterization/analytical problems
- Tested hazardous for characteristics
- Request made for waste, not media.
- Poor risk assessment.
- LDRs not met.

Managing Contaminated Media

Chemical	Industrial Soil RSL (mg/Kg)	10X UTS (mg/L)	TCLP (mg/L)
Acetone	100,000	1600	NA
Ethylbenzene	270	100	NA
Vinyl Chloride	17	60	0.2

Contained-in Decision Policy

- Upon review, DERR technical personnel will recommend either addition information be obtained, denial or approval.
- Approval for the VAP will be via a letter signed by the DERR chief or equivalent.
- The DMWM Inspector will be notified of the contained-in decision and the limits of disposal volume.

Hypothetical VAP Project

- VAP cleanup of a historic machine shop located in Cleveland.
- Closed since 1978. Only one above-ground structure remains.
- Phase I and Sanborn maps identify a parts degreasing area and a TCE storage tank.
- Phase II shows exceedences of comm./ind. and drinking water standards in those areas.

Hypothetical VAP Project

- Soil – Meets comm./ind. direct contact standards and passes TCLP tests in “hot spot”. Dig and haul for disposal to meet leaching and vapor intrusion standards.
- Ground water (within USD) – in-situ chemical oxidation to meet vapor intrusion standards.

Potential RCRA Issues

- Soil may contain a listed hazardous waste based on historic use of TCE as a solvent.
- Excavation of the soil may be considered generation of hazardous waste.
- Disposal of this soil at a solid waste landfill may be considered illegal disposal of hazardous waste.

How to Avoid RCRA Issues?

- Whenever “excavation” is the preferred remedial approach, and the contamination may be tied to a historic process that used a listed hazardous material, contact DO/DERR or CO/DERR (Ed Lim or Erik Hagen) immediately to help provide options.
- A positive contained-in determination must be issued prior to disposal in a solid waste landfill.
- May rely on the AOC concept to manage the soil.

Almost Automatic Listings

Processes or operations that create a presumption that soil at a property contains a listed waste:

- Soil contaminated with PCE at former dry cleaning operations.
- 99% of the time.

QUESTIONS and DISCUSSION