

Land Disposal Restrictions

Generation

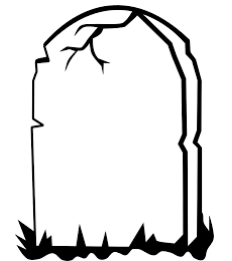
Transportation

Treatment

Disposal

Manifest System – Waste Tracking

Land Disposal Restrictions – Is it Safe to Dispose?



LDR Program Prohibits Disposal, Dilution, and Indefinite Storage of Hazardous Waste

Prohibition on Land Disposal of Hazardous Waste

- Establishes Treatment Standards hazardous waste must meet before land disposal
- Prohibits waste that doesn't meet the treatment standards from being land disposed

Prohibition on Dilution of Hazardous Waste

- **R315-268-3**
- Handlers of hazardous waste can not mix hazardous waste with non-hazardous waste to decrease the concentration

Prohibition on Indefinite Storage of Hazardous Waste

- **R315-268-50**

Applicable Treatment Standards Depend on Waste Codes

Table from 40 CFR 268.40 lists treatment standards by waste code

Waste Code	Waste Description / Regulatory Subcategory	Common Name	CAS Number	Wastewater ¹ Standard Concentration in mg / L; or Technology Code	Non-Wastewater Standard Concentration in mg / kg ² ; or Technology Code
U002	Acetone	Acetone	67-64-1	0.28	160
F007	Cyanide plating solutions from electroplating	Cadmium	7440-43-9	NA	0.11 mg/L TCLP
P003	Acrolein	Acrolein	107-02-8	0.29	CMBST
D002	Corrosive Characteristic	NA	NA	DEACT ³ and meet §268.48 standards	DEACT and meet §268.48 standards

- 1) Wastewaters are wastes that contain less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS).
- 2) Unless noted as “mg / L TCLP”
- 3) Treatment codes are described in **R315-268-42(a)**

Characteristic Wastes, Underlying Hazardous Constituents, and Universal Treatment Standards

D002	Corrosive Characteristic	NA	NA	DEACT and meet §268.48 standards	DEACT and meet §268.48 standards
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R315-268-48 - Table Universal Treatment Standards (UTS)

- Contains treatment concentrations for individual chemical components regardless of waste code or waste stream

R315-268-9 – Special Rules Regarding Wastes that Exhibit a Characteristic

- When treating a waste that exhibits a characteristic, the waste must be de-characterized **AND** underlying hazardous constituents must be treated to UTS concentrations.
- If a waste is both listed and exhibits a characteristic, the treatment for the listed waste can be used in lieu of the characteristic treatment provided that the treatment standard for the listed waste includes a treatment standard for the constituent that causes the waste to exhibit the characteristic.

Alternative Treatment Standards for Lab Packs, Debris, and Soils – Lab Packs

R315-268-42(c) – Treatment Standards for Lab Packs

- 1) Lab packs comply with applicable provisions of **R315-264-316**
- 2) Lab pack does not contain any of the following wastes (**R315-268-52**):
D009, F019, K003, K004, K005, K006, K062, K071, K100,
K106, P010, P011, P012, P076, P078, U134, U151
- 3) Lab packs are incinerated in accordance with the requirements of Sections **R315-264-340 through 351**
- 4) Any incinerator residues from lab packs containing D004, D005, D006, D007, D008, D010, and D011 are treated in compliance with the applicable treatment standards specified for such wastes in Sections R315-268-40 through 49

Alternative Treatment Standards for Lab Packs, Debris, and Soils - Debris

R315-268-2(g) – Debris means solid material exceeding a **60 mm particle** size that is intended for disposal and that is a manufactured object, plant or animal matter, or natural geologic material. **However, if the material has a specific treatment standard listed in Sections R315-268-40 through 49, it is not a debris.****

40 CFR 268.45 – Table 1 – Alternative Treatment Standards For Hazardous Debris

R315-268-45 – Treatment Standards for Hazardous Debris

- a) Treatment Standards
- b) Contaminants Subject to Treatment
- c) Conditioned Exclusion of Treated Debris
 - Hazardous debris that has been treated using one of the specified **extraction or destruction** technologies and does not exhibit a characteristic after treatment is **not a hazardous waste** and need not be managed in a hazardous waste facility
 - Hazardous debris contaminated with a listed waste that is treated by an **immobilization** technology is a **hazardous waste** and shall be managed in a hazardous waste facility
- d) Treatment Residuals



Alternative Treatment Standards for Lab Packs, Debris, and Soils - Soil

R315-268-49 – Treatment Standards for Contaminated Soil

a) Applicability

- “You shall comply with LDRs prior to placing soil that exhibits a characteristic of hazardous waste, or exhibited a characteristic of hazardous waste at the time it was generated, into a land disposal unit”
- A table / flow chart helps determine whether soil needs to comply

c) Treatment Standards

- For Hazardous Constituents, treatment needs to **reduce the initial concentration by 90% or achieve a concentration 10 times UTS**, whichever final concentration is **higher**.
- Soils exhibiting ignitability, corrosivity, or reactivity need to be de-characterized

Alternative Treatment Standards for Lab Packs, Debris, and Soils - Soil

40 CFR 268.49 – Treatment Standards for Contaminated Soil

If LDRs	And if LDRs	And if	Then you
Applied to the listed waste when it contaminated the soil*	Apply to the listed waste now		Must comply with LDRs
Didn't apply to the listed waste when it contaminated the soil*	Apply to the listed waste now	The soil is determined to contain the listed waste when the soil is first generated	Must comply with LDRs.
Didn't apply to the listed waste when it contaminated the soil*	Apply to the listed waste now	The soil is determined not to contain the listed waste when the soil is first generated	Needn't comply with LDRs.
Didn't apply to the listed waste when it contaminated the soil*	Don't apply to the listed waste now		Needn't comply with LDRs.



The Moment You've All Been Waiting For.....

Generator Requirements

R315-268-7(1): Determination

“A generator of hazardous waste **shall determine if the waste has to be treated before it can be land disposed**. This is done by determining if the hazardous waste meets the treatment standards in Sections R315-268-40, R315-268-45, or R315-268-49. This determination can be made **concurrently with the hazardous waste determination** required in Section R315-262-11, in either of two ways: **testing the waste or using knowledge of the waste**.*

*For both testing and knowledge, generator must retain data used in the determination in their files (R315-268-7(6)).

Generator Can Choose to Not Make the Determination

R315-268-7(a)(2): If Generator Does Not Make the Determination

“If the generator chooses not to make the determination of whether the waste shall be treated, the notification shall include the EPA Hazardous Waste Numbers and Manifest Number of the first shipment and shall state **“This hazardous waste may or may not be subject to the LDR treatment standards. The treatment facility shall make the determination.”**”

Paperwork Requirements for Prohibited Waste

R315-268-7(a)(2): If Waste is Prohibited

If the waste or contaminated soil does not meet the treatment standards, the generator shall send a **one-time written notice to each treatment or storage facility receiving the waste** with the initial shipment of waste and **place a copy in the file**. The notice shall include the information in column "268-7(a)(2)" of the **Generator Paperwork Requirements Table** in Subsection R315-268-7(a)(4).

Generator Paperwork Requirements Table

Required information	§268.7 (a)(2)	§268.7 (a)(3)	§268.7 (a)(4)	§268.7 (a)(9)
1. EPA Hazardous Waste Numbers and Manifest Number of first shipment	✓	✓	✓	✓
2. Statement: this waste is not prohibited from land disposal			✓	
3. The waste is subject to the LDRs. The constituents of concern for F001-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	✓	✓		
4. The notice must include the applicable wastewater/ nonwastewater category (see §268.2(d) and (f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)	✓	✓		
5. Waste analysis data (when available)	✓	✓	✓	
6. Date the waste is subject to the prohibition			✓	
7. For hazardous debris, when treating with the alternative treatment technologies provided by §268.45: the contaminants subject to treatment, as described in §268.45(b); and an indication that these contaminants are being treated to comply with §268.45	✓		✓	
8. For contaminated soil subject to LDRs as provided in §268.49(a), the constituents subject to treatment as described in §268.49(d), 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 §268.49(c) or the universal treatment standards	✓	✓		
9. A certification is needed (see applicable section for exact wording)		✓		✓



Paperwork Requirements for Non-Prohibited Wastes

R315-268-7(a)(3): If Waste is Not Prohibited

If the waste or contaminated soil meets the treatment standards **at the initial point of generation**, the generator shall send a **one-time written notice to each treatment or storage facility receiving the waste** with the initial shipment of waste and **place a copy in the file**. The notice shall include the information in column "268-7(a)(3)" of the **Generator Paperwork Requirements Table** in Subsection R315-268-7(a)(4).

Requirements and Paperwork for Wastes Treated On-Site

R315-268-7(a)(5): If Generator Treats Waste On-Site

- Treatment must be done in tanks, containers, or containment buildings according to **R315-262-14, -16, and -17.**
- Generator must develop and follow a **Waste Analysis Plan (WAP)*** which describes the procedures it will carry out to comply with the treatment standards
- Treated waste can be shipped off-site with the notifications listed in the **Generator Paperwork Requirements Table** in Subsection R315-268-7(a)(3)

Paperwork Requirements for Lab Packs

R315-268-7(a)(9): Lab Packs following the Alternative Treatment Standards

The generator shall submit a notice with the initial shipment of waste to a facility that provides the information in column "268-7(a)(9)" in the **Generator Paperwork Requirements Table** in Subsection R315-268-7(a)(4), and the following certification. The certification, which shall be signed by an authorized representative and shall be **placed in the generator's files**, shall say the following:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under Appendix IV to Rule R315-268 and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at Subsection R315-268-42(c). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

Brief Overview of Specific Exemptions and Exclusions

Special Scenarios:

R315-268-7(a)(4): Wastes exempt due to case-by-case extensions, disposal in no-migration units, or national capacity variances

R315-268-7(a)(7): Waste is excluded from definition of hazardous or solid waste or exempt from land disposal restrictions because they are disposed in CWA or SDWA facilities.

R315-268-7(a)(10): Small quantity generators who reclaim wastes through a tolling agreement pursuant to 40 CFR 262.20(e)

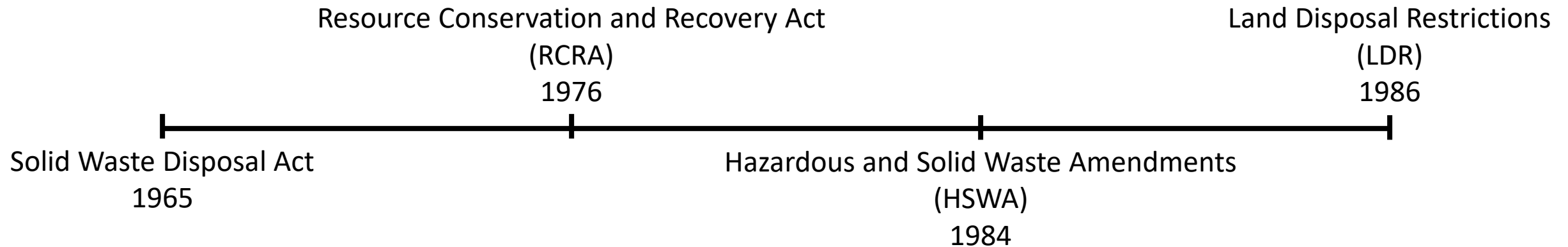
Final Take-Aways

1. The LDR Program Prohibits Land Disposal of Untreated Hazardous Waste, Dilution of Hazardous Waste, and Indefinite Storage of Hazardous Waste
2. Treatment standards can be Concentration Based or Technology Based and depend on Waste Codes, Underlying Hazardous Constituents, and the Physical Characteristics of the waste (wastewater vs. non, soil, debris, etc.)
3. The Generator is responsible for determining if a hazardous waste is prohibited and notifying subsequent facilities of the waste's LDR status

References / Further Reading

- Utah Annotated Code R315-268
- 40 CFR 268
- Introduction to Land Disposal Restrictions (2005), EPA530-K-05-013
- Land Disposal Restrictions: Summary of Requirements (2001), EPA530-R-01-007

Background to the LDR Program



Alternative Treatment Standards for Lab Packs, Debris, and Soils - Debris

R315-268-45 – Treatment Standards for Hazardous Debris

a) Treatment Standards

- Contaminated debris must be treated for each “contaminant subject to treatment”
- Debris exhibiting a characteristic must be de-activated
- Mixtures? – Treat it all

b) Contaminants Subject to Treatment

- Toxicity Characteristic, Listed Waste, and/or Cyanides

c) Conditioned Exclusion of Treated Debris

- Hazardous debris that has been treated using one of the specified **extraction or destruction** technologies and does not exhibit a characteristic after treatment is **not a hazardous waste** and need not be managed in a hazardous waste facility
- Hazardous debris contaminated with a listed waste that is treated by an **immobilization** technology is a **hazardous waste** and shall be managed in a hazardous waste facility

d) Treatment Residuals

- Residue from the treatment shall be separated from the treated debris and is subject to LDRs
- Non-toxic, characteristic residues only need deactivation
- Cyanide Reactive must meet D003 treatment standards
- Ignitable non-wastewater residue is subject to the technology specified in the treatment standard for D001:
Ignitable Liquids

Additional Information on WAPs

R315-268-7(a)(5) – Generators Treating Hazardous Waste

(5) If a generator is managing and treating prohibited waste or contaminated soil in tanks, containers, or containment buildings regulated under Sections R315-262-15, R315-262-16, and R315-262-17 to meet applicable LDR treatment standards found at Section R315-268-40, the generator shall develop and follow a written waste analysis plan which describes the procedures it will carry out to comply with the treatment standards. **Generators treating hazardous debris under the alternative treatment standards of Table 1 to Section R315-268-45, however, are not subject to these waste analysis requirements.** The plan shall be kept on site in the generator's records, and the following requirements shall be met:

(i) The waste analysis plan shall be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and contain the information necessary to treat the wastes in accordance with the requirements of Rule R315-268, including the selected testing frequency.

(ii) Such plan shall be kept in the facility's on-site files and made available to inspectors.

(iii) Wastes shipped off-site pursuant to Subsection R315-268-7(a) shall comply with the notification requirements of Subsection R315-268-7(a)(3).