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dnr.wi.gov/files/PDF/pubs/rr/RR705.pdf

**Applicability of the Hazardous
Waste Rules to Cleanups**

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Introduction

- This presentation will be a summary of how the hazardous waste rules apply to cleanups.
- More detailed information on this topic is available in publication RR-705 (Guidance for Hazardous Waste Remediation).
- Background and history on this issue is also available on our web page.

Background

- The applicability of EPA's 1980 RCRA rules to contaminated media was not considered until a number of years later.
- In 1986, EPA issued a memo stating that contaminated media must be managed as a hazardous waste if it contains hazardous waste.
- This decision became known as the "contained-in" policy.

Background (cont.)

- EPA was sued on this interpretation.
- A Court of Appeals decision upheld their ability to implement this approach.
- EPA subsequently issued a number of guidance documents and Federal Register notices clarifying their position on how the hazardous waste rules applied to cleanups.

Hazardous Waste Determinations

- The generator is required to determine if their waste is hazardous.
- There are 2 major ways contaminated media can be hazardous waste:
 1. The media contains a listed hazardous waste, or
 2. The media exhibits a hazardous waste characteristic.

Listed Hazardous Wastes

- NR 661 has a series of tables identifying waste streams that are hazardous.
 1. Non-specific sources – “F” listed.
 2. Specific sources – “K” listed.
 3. Commercial chemical products would be either “U” or “P” listed if they were discarded or intended to be discarded.
- Soil containing listed HW is hazardous until health based direct contact values are met.

Contained-Out Determinations for Soil Containing Listed HW

- Once the concentrations in soil are below health based numbers (HBN) a “contained-out” determination can be made.
- HBN’s are determined using industrial land use assumptions.
- If there are multiple contaminants, an evaluation of the cumulative excess cancer risk or the hazard index is not necessary for disposal in a SW landfill.

Soil Contained Out Values

<u>Contaminant</u>	<u>Contained-out Value</u>
TCE	8.8 mg/kg
PCE	153 mg/kg
Vinyl Chloride	2 mg/kg

Characteristic Hazardous Wastes

- Ignitability (D001)
 - Corrosivity (D002)
 - Reactivity (D003)
 - Toxicity (D004 – D043)
- The characteristic that typically results in contaminated media being hazardous is toxicity, as determined by the TCLP test.

TCLP Exemptions

- In 2002 EPA codified a court of appeals decision that MGP Waste is not subject to TCLP testing. NR 661 contains similar language.
- Petroleum contaminated media from underground storage tanks that fails TCLP for waste codes D018 to D043.

Hazardous Waste Determinations (cont.)

- Waste determinations can be made by:
 1. Testing using the procedures specified in ch. NR 661, or
 2. Applying knowledge
- Testing is typically done to determine hazardous waste characteristics, while applying knowledge is used for waste listings

Hazardous Waste Determinations (cont.)

- Waste determinations should be made early in the process, typically at the SI stage.
- This is important because the regulatory status of the media and the selected remedial action can significantly affect the cost and timing of a project.

Hazardous Waste Determinations (cont.)

- Generators need to make a good faith effort to determine the source of contamination.
- This may include an evaluation of:
 1. Material Safety Data Sheets (MSDS's)
 2. manifests, vouchers, bills of lading
 3. Sales and inventory records
 4. Accident, spill and inspection reports
 5. Discussions/Interviews with former employees

Hazardous Waste Determinations (cont.)

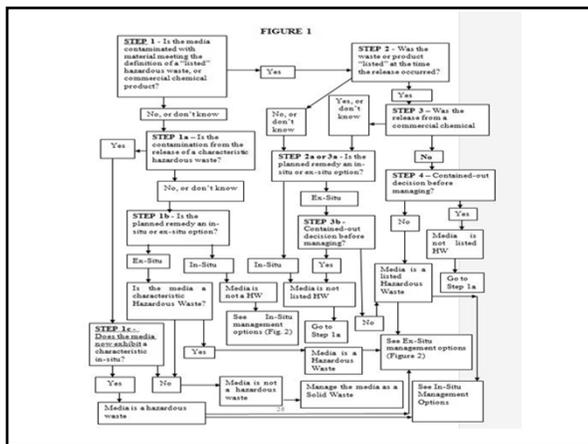
- If after a good faith evaluation, the evidence on the source of the contamination is either unavailable or inconclusive, it should be assumed the media is not contaminated with hazardous waste.
- Typically DNR does not review waste determinations unless a specific request and the appropriate fee are submitted.

Example

- Vacant shopping center with low level PCE concentrations in both soil and groundwater.
- The proposed developer evaluates potential sources including a former dry cleaner, but a specific source is not found.
- Without a documented source, they can conclude the media doesn't contain a listed Hazardous Waste.
- The media could still be a characteristic HW.

Example (cont.)

- If a source area is found adjacent to the former dry cleaner or if documentation exists on the cause of the release, then the media may be a hazardous waste. It depends on:
 1. When the release occurred,
 2. Product spill vs. waste release, and
 3. Selected option for management of the contaminated media.



Step 1

- Is the media contaminated with material meeting the definition of a listed hazardous waste or a commercial chemical product?
- This determination requires a good faith effort by the RP.
- If information on the source of contamination is either unavailable or inconclusive, then answer no.

Step 1a

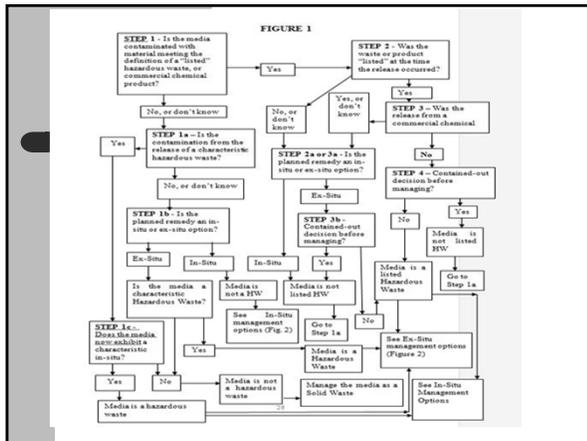
- If the answer under Step 1 is no, then the RP must next evaluate whether the source of the contamination was from the release of a characteristic hazardous waste.
- This requires the same good faith evaluation.
- As before, if the information on the source of contamination is either unavailable or inconclusive, answer no and go to step 1b.

Step 1b

- Will the media be managed in-situ or ex-situ?
- If in-situ the media would not be a hazardous waste and the NR 700 process applies.
- If ex-situ then determine if the media exhibits a hazardous characteristic.
- If no, manage as a solid waste. If yes, either manage as a hazardous waste or treat the soil to remove the characteristic, then manage as solid waste.

Step 1c

- If the answer under Step 1a is yes (i.e. the media was contaminated by a characteristic hazardous waste, then the RP needs to determine if the media still exhibits a hazardous characteristic.
- If no, the media is not hazardous waste.
- If yes, then either manage as a hazardous waste or treat the soil to remove the characteristic.



Step 2

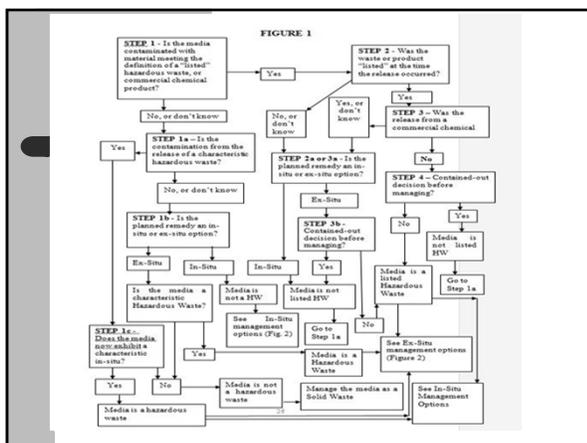
- If the answer under Step 1 was yes (i.e. the media was contaminated by a listed hazardous waste or commercial chemical product), then the RP needs to determine if the waste or product was listed at the time the release occurred.
- If the evaluation under Step 2 concludes the waste or product was not listed at the time the release occurred, then go to step 2a.

Step 2a

- In Step 2a, the RP then needs to decide if management will be in-situ or ex-situ.
- If in-situ, the soil is not listed but there still need to be a determination if a hazardous characteristic applies.
- If ex-situ, then the RP needs to determine if a “contained-out” decision can be made before the material is managed.

Step 3b

- If a “contained-out” decision can be made before excavation, then the material would not be listed.
- The RP still needs to make a determination on whether the material would be a characteristic hazardous waste.
- If a contained-out decision can not be made, then manage the material as a listed hazardous waste.



Step 4

- If the answer under step 3 was no (i.e. the release was from a listed hazardous waste), then the RP needs to determine if a "contained out" determination can be made.
- If yes, the media is not a listed hazardous waste but the RP needs to determine if the material exhibits a hazardous characteristic.
- If no, then management as a hazardous waste is required.

Land Disposal Restrictions (LDR's)

- LDR's prohibit land disposal of HW unless specified treatment standards are met.
- LDR's are either concentration based or technology based.
- For soils, treatment must either:
 1. Achieves a 90% reduction in concentration, or
 2. Meets a concentration of 10 times the Universal Treatment Standards (UTS).

LDR's (cont.)

<u>Contaminant</u>	<u>10x UTS Concentration</u>
Benzene	100 mg/kg
TCE	60 mg/kg
PCE	60 mg/kg
Vinyl Chloride	60mg/kg
Lead	7.5 mg/l TCLP

Example

- Release of spent TCE took place in the mid 1980's.
- This was after the HW rules became effective, but prior to promulgation of the LDR standards.
- Soil has concentrations above direct contact HBN's, and would likely fail TCLP as well.

Example (cont.)

- If the soil is treated in-situ to below the direct contact HBN, a "contained-out" determination could be made.
- The HBN is low enough that the soil will not exceed the TCLP value so upon excavation it can be managed as a solid waste.
- LDR's would not apply since the release was prior to TCE standards being established and the soil was not HW when generated.

Example (cont.)

- If the soil was excavated prior to treatment, it would be F002 listed HW.
- LDR's would apply at the time of excavation (i.e. generation).
- Soils would need to either be:
 1. Treated to meet LDR's prior to disposal as HW, or
 2. Treated to meet direct contact HBN's (which would also meet LDR's and TCLP) and managed as a solid waste.

Management Options for Media Defined as Hazardous Waste

- In general, the treatment, storage or disposal of media requires a HW license, variance or an exemption from the rules.
- A variance can be issued if it would cause an "undue or unreasonable hardship" to obtain a HW license and the variance is protective of human health and the environment.

Hazardous Waste Variances

- NR 670 indicates it would be an undue or unreasonable hardship to wait for the issuance of a HW license during cleanup of a contaminated site.
- Meeting the undue/unreasonable hardship criteria does not mean the proposal is technically sound.....only that the activity is eligible for a variance.
- The appropriate provisions in NR 700 should be used for preparing a variance application.

Hazardous Waste Variances (cont.)

- Variances typically require a public comment period before a final decision is made.
- The RP is responsible for issuing the notice.
- DNR can provide assistance with the content of the public notice.
- Following the 30 day comment period, DNR responds to the comments and issues the final decision.

Exemptions for Managing Media Defined as Hazardous Waste

- Exemptions by Rule:
 1. Wastewater treatment units,
 2. Publicly Owned Treatment Works (POTW's),
 3. ReInjection of contaminated groundwater, or
 4. Treatment in waste accumulation tanks or containers.

Example of Treatment in Tanks or Containers

- A company discovers several hundred cubic yards of lead contaminated soil that will fail TCLP when excavated.
- They decide to treat the soil in roll-off containers with lime.
- A HW license or variance is not necessary if the appropriate technical standards specified in the rule are followed.

Area of Contamination (AOC)

- EPA's AOC policy allows generally dispersed contamination to be considered RCRA units.
- Consolidation or in-situ treatment within an AOC is not a new point of HW generation.
- The AOC policy does not cover ex-situ treatment or off-site disposal.

AOC's (cont.)

- The AOC policy typically works best for situations where the contaminants are a direct contact concern.
- DNR has authority to approve the designation of an AOC based on the site-specific conditions.
- Example

Example

- A Phase I/II indicates that a property was used for foundry waste disposal from the 60's until the early 1980's.
- Concentrations of lead are high enough to exceed TCLP levels.
- Large volumes makes removal impractical.

Example (cont.)

- Developer wishes to consolidate the waste within the footprint of the new building.
- Since the waste is "generally dispersed" across the property, an AOC can be designated.
- Consolidation would not be considered to be "generation" so TCLP testing not needed. A BAL approval would be required.

Conclusions

- Generators are responsible for determining if their waste is hazardous.
- The following items are needed to make a waste determination:
 1. Date of the release
 2. Regulatory status of the source material at the time of the release
 3. Whether the selected remedy will be in-situ or ex-situ.

Conclusions (cont.)

- If information on the source of contamination is either unclear or inconclusive, it can be assumed the media was not contaminated by a hazardous waste.
- Numerous options exist to allow for practical remedy selection decisions in those situations where the contaminated media is or may be defined as hazardous.

Questions?

- Today's presentation and the audio recording will be available on the R&R Program's Training webpage at:

dnr.wi.gov/topic/Brownfields/Training.html
