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1450.	Method Detection Limits and Hazardous Waste Determinations	ENCORE AUG 26, 2021
1451.	Method Detection Limits and Hazardous Waste Determinations II	ENCORE SEP 2, 2021
1452.	Totals Analysis vs. TCLP and Dividing by 20	ENCORE SEP 9, 2021
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1454.	Decharacterized Hazardous Waste Listed Solely for Non-Toxic Characteristics	ENCORE SEP 23, 2021
1455.	Decharacterized Wastes and the LDR Dilution Prohibition	ENCORE SEP 30, 2021
1456.	The "Derived from Rule", the "Mixtures Rule", and the "Contained-In Policy"	ENCORE OCT 7, 2021
1457.	Hazardous Debris and Options to Exclude as a Dangerous Waste	OCT 14, 2021
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1459.	RCRA Point of Generation and Baghouse Dust Collection Systems	OCT 28, 2021
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1463.	Multiple Characteristic Hazardous Waste Codes and Underlying Hazardous Constituents	ENCORE NOV 23, 2021
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1469.	Hazardous Debris and Radioactively Contaminated Cadmium Batteries	ENCORE JAN 6, 2022
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1471.	Mercury Wet Cell Batteries - Debris or Not Debris	ENCORE JAN 20, 2022
1472.	Hazardous Debris and Non-Radioactive Lead Acid Batteries	ENCORE JAN 27, 2022
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1475.	Central Accumulation Areas with Satellite Accumulation	FEB 17, 2022
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1477.	RCRA Empty Acutely Hazardous Waste Containers	ENCORE MAR 3, 2022
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1498.	Hazardous Debris Macroencapsulation and Size Reduction	ENCORE JUL 28, 2022
1499.	Hazardous Debris Macroencapsulation and Size Reduction – Part II	ENCORE AUG 4, 2022

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TWO MINUTE TRAINING

TO: CENTRAL PLATEAU CLEANUP COMPANY

FROM: PAUL W. MARTIN, RCRA Subject Matter Expert
CPCCo Environmental Protection, Hanford, WA

SUBJECT: HAZARDOUS DEBRIS MACROENCAPSULATION AND SIZE REDUCTION – PART II

DATE: AUGUST 4, 2022

<u>CPCCo Projects</u>	<u>CPCCo Functionals</u>	<u>HMIS</u>	<u>Hanford Laboratories</u>	<u>Other Hanford Contractors</u>	<u>Other Hanford Contractors</u>
Tania Bates Theresa Boles Justin Bolles James Brack Rene Catlow Peter Ceton Richard Clinton Patty Drago Paul Fernandez Ryan Fisher Andrew Getz Cory Grabee Lawanda Grow Char Hall Stuart Hildreth Aprill Jivelekas Sasa Kosjerina William Krueger Richard Lipinski Stuart Mortensen Edward Myers Trey Reppe Melissa Sahn-dame Seth Slater Phil Sheely Kat Thompson Jeff Westcott Richard Willson Nick Wood Jon Wright	Sara Austin Jeff Bramson Bob Bullock Frank Carleo Bob Cathel Stacy Cutter Jeanne Elkins Jonathan Fullmer Randal Fox Sarah Horn John Hultman Julie Johanson Mitch Marrott Morgan Matson Stewart McMahan Carlie Michaelis Brian Mitcheltree Anthony Nagel Chris Plager Linda Petersen Brent Porter Sean Sexton Dave Shea Deborah Singleton Dale Snyder Britt Wilkins Jennifer Williams	Morgan Baker Brett Barnes Curt Clement Mike Demiter Kip George Jerry Cammann Kelly Elsethagen Garin Erickson Katie Hall Dashia Vander Sys Mark Kamberg Jon McKibben Saul Martinez Matt Mills Carly Nelson Eric Pennala Jon Perry Dave Richards Christian Seavoy David Shaw John Skoglie Greg Sullivan	Dean Baker Linda Conlin Bailey Hardy Garrett Knutson Eric Van Mason Melanie Myers <u>DOE RL, ORP, WIPP</u> Duane Carter Ingrid Colton Tony McKarns Bryan Trimberger Robin Varljen Allison Wright	Bill Bachmann Scott Baker Michael Carlson Danielle Collins Paul Crane Tina Crane Ron Del Mar John Dorian Mark Ellefson Darrin Faulk James Hamilton Leah Hare Andy Hobbs Stephanie Johansen Ryan Johnson Mike Lowery Michael Madison Terri Mars Steve Metzger Tony Miskho Tom Moon Chuck Mulkey Michelle Oates Kirk Peterson	Dan Saueressig Lana Strickling Joelle Moss Greg Varljen Julie Waddoups Jay Warwick Ted Wooley

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TWO MINUTE TRAINING

SUBJECT: Hazardous Debris Macroencapsulation and Size Reduction - Part II

Q: This week, a customer has hazardous debris that is intended for macroencapsulation under the alternative treatment standards for debris at [40 CFR 268.45](#). As opposed to last week when the customer wanted to shred all the debris waste to reduce the size to less than 60 mm - and almost lose the debris option - this week the customer proposes to shred/size reduce only a portion of the debris in order to increase waste packaging efficiency and save on disposal costs. However, the customer is still concerned that if even a portion of the debris is size reduced to less than 60 mm, macroencapsulation per 268.45 might no longer be an option. Should our customer be concerned?

A: Customers should always be concerned.....

Last week, the customer wanted to size reduce all the debris to less than 60 mm. This week the customer only wants to size reduce a portion of the debris. The concern would be how large a portion is to be size reduced.

Per the definition of debris at [40 CFR 268.2\(g\)](#), a "mixture of debris that has not been treated to the standards provided by §268.45 and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection" (emphasis added).

If the customer size reduces a portion of the debris and the combined mixture of debris-sized material (>60 mm) remains greater than the size-reduced material (≤60 mm), then the mixture is comprised primarily of debris and remains eligible for the alternative treatment standards of debris at 40 CFR 268.45.

The customer must be concerned that the size-reduced material does not become the primary component of the mixture. If that happened, the mixture would become amenable to sampling and analysis and no longer eligible for the debris standards. The customer would also have to be concerned with separate non-debris waste streams being added to the original debris waste stream. This would be considered impermissible dilution to avoid the conventional treatment standards for the non-debris at [40 CFR 268.40](#) and EPA would consider that activity illegal.

As further clarification, another customer generated automotive shredder residues (ASR, a.k.a. "fluff") that after shredding met the definition of debris. This customer separated the various sizes of material (rubber, glass, metals, etc.) to capture non-ferrous metals for recycling. This customer then recombined the various sizes of material (some of which were ≤60 mm) and wanted to manage the recombined mixture as debris. EPA's October 27, 1999, ([RO 14525](#)) response was that since a single wastestream was recombined, and since the recombined mixture was "primarily debris" (>60 mm), the recombined mixture remained eligible for the debris treatment standards.

SUMMARY:

- If debris from a single wastestream is size reduced and following size reduction the material is comprised primarily of debris material, the waste remains eligible for the alternative treatment standards for debris.
- If debris from a single wastestream is size reduced and following size reduction the material is comprised primarily of non-debris material, the waste is not eligible for the alternative treatment standards for debris.
- Non-debris intentionally mixed with debris in order to avoid a conventional treatment standard is a form of impermissible dilution and the entire mixture must be treated to the conventional treatment standards - unless the non-debris is re-separated from the debris.

40 CFR 268.2(g), the October 27, 1999, EPA memo and a bonus excerpt from the [August 18, 1992, Federal Register](#) concerning debris are attached to the e-mail. If you have any questions, please contact me at [Paul W. Martin@rl.gov](mailto:Paul.W.Martin@rl.gov) or at (509) 376-6620.

FROM: Paul W. Martin

DATE: 8/4/2022

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TWO MINUTE TRAINING - ATTACHMENT

SUBJECT: Hazardous Debris Macroencapsulation and Size Reduction – Part II

40 CFR Part 268.2(g) (*Reformatted for ease of reading*)

Debris means solid material exceeding a 60 mm particle size that is intended for disposal and that is:

- A manufactured object; or
- Plant or animal matter; or
- Natural geologic material.

However, the following materials are not debris:

- Any material for which a specific treatment standard is provided in Subpart D, Part 268, namely lead acid batteries, cadmium batteries, and radioactive lead solids;
- Process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and
- Intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume.

A mixture of debris that has not been treated to the standards provided by §268.45 and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.

37224 Federal Register / Vol. 57, No. 160 / Tuesday, August 18, 1992 / Rules and Regulations (Middle Column/1st Paragraph)

"The Agency has therefore decided to classify as debris any mixture where the debris portion comprises the largest amount of material present by volume, to be determined by visual inspection. Thus for example, if upon examination a mixture of cobbles (i.e., with a particle size of 60 mm or more), soil, and sludge is comprised mostly of cobbles, the mixture is classified as debris. After being treated by one of the treatment methods for debris promulgated in today's rule, it could then be land disposed. (Residues from applying the treatment method could be land disposed after being treated to meet the treatment standards for the prohibited waste contaminating the debris.)

This definition of debris encompasses this classification principle by stating that 'A mixture of debris and other material such as soil or sludge is also debris if the mixture is comprised primarily of debris by volume based on visual inspection.' It should be clear from this discussion that the rule does not require debris and nondebris material to be separated prior to treatment (an unintended implication of the proposed rule). Rather, mixtures are either classified as debris or some other type of waste treatability group according to the classification test discussed above.

We note that the 'primarily material' test for classifying debris does not apply to intact, nonempty containers. Given that such containers are not debris and can be readily separated from debris (or mixtures of debris and other materials), they are not considered in applying the 'primary material' test. Consequently, intact, nonempty containers must not be included in making the volume determination to classify mixtures of debris."

FROM: Paul W. Martin

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TWO MINUTE TRAINING -ATTACHMENT

SUBJECT: Hazardous Debris Macroencapsulation and Size Reduction – Part II

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 27, 1999

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Tracy Mattson
Institute of Scrap Recycling Industries, Inc.
1325 G Street, NW, Suite 1000
Washington, D.C. 20005
Dear Ms. Mattson:

This letter is in response to your letter of June 29, 1999, regarding automotive shredder residue (ASR) and whether it qualifies as hazardous debris. Under current regulations, hazardous debris is any solid material exceeding a 60 mm particle size that is intended for disposal and contains a hazardous waste (see §268.2(g) and (h)). As explained more fully below, a mixture of debris and non-debris material can be considered debris if the debris is greater than 50% of the mixture and if non-debris hazardous waste is not intentionally mixed in for the purpose of avoiding waste treatment standards.

According to the materials you submitted to us on June 2, 1999, ASR is composed of the shredded, non-metal parts of demolished cars (upholstery, rubber, plastics, glass, sand, gravel, etc.). Even though ASR is primarily non-metallic in nature, some metals are typically present because they are not able to be efficiently screened out prior to shredding. Scrap recycling facilities generally must handle ASR as a hazardous waste when it exhibits the toxicity characteristic for some metals. The ASR you described also meets the definition of debris after it leaves the shredder mill, i.e., a majority of the ASR exceeds 60 mm in particle size.

As stated in your June 29 letter, before the ASR is disposed, the ASR undergoes a series of separation processes that enable non-ferrous metals to be recovered. These separation processes break out sub-volumes based on particle size to facilitate metal recovery. Once the metals are removed, the various-sized ASR fractions are recombined before further treatment and disposal.

Our conclusion is that the intermediate, separation processes to recover metals do not alter the ability of ASR to qualify as debris for purposes of meeting the alternative waste treatment standards for debris. **As long as the recombined mixture of shredder residue is primarily made up of particles greater than 60 mm in size, the mixture is still considered debris. The act of recombining the waste streams does not constitute intentional mixing of debris with non-debris hazardous waste, which the Agency has stated is a type of impermissible dilution and hence illegal** (see 64 Fed. Reg. at 25,411 (May 11, 1999) and attached memo from Elizabeth Cotsworth to the Regions dated May 28, 1999). In both the Federal Register Notice and the memorandum, the Agency was addressing the practice of deliberately combining debris with other hazardous waste from different processes and then claiming -- incorrectly -- that the mixture should be classified as debris and thus eligible to be treated using one of the alternative treatment standards for hazardous debris found in §268.45. This principle does not apply to processed ASR (as you describe the process in your letter) because you are not adding a foreign waste to the initial fluff: the recombined particles are from the same process, and the purpose for separating the particles is to recover metals, which is an environmentally sound practice, not to circumvent regulation.

If you have any further questions regarding this matter, please contact Rita Chow at 703-308-6158, or Peggy Vyas at 703-308-5477.

Sincerely,

Elizabeth Cotsworth, Director
Office of Solid Waste

Faxback 14525

FROM: Paul W. Martin

DATE: 8/4/2022

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