

<u>SUBJECT</u>			<u>DATE</u>
1056.	Hazardous Waste Tanks and the Less than 90-Day Accumulation Time Limit	ENCORE	APR 23, 2015
1057.	Decharacterized RCRA Waste - Manifesting and LDR Reporting	ENCORE	APR 30, 2015
1058.	Decharacterized Hazardous Waste Listed Solely for Non-Toxic Characteristics	ENCORE	MAY 7, 2015
1059.	Decharacterized Wastes, <90-Day Accumulation Time Limits and LDR Storage Prohibition	ENCORE	MAY 14, 2015
1060.	Decharacterized Wastes and the LDR Dilution Prohibition	ENCORE	MAY 21, 2015
1061.	Hazardous Debris Macroencapsulation and Size Reduction	ENCORE	MAY 28, 2015
1062.	Universal Waste Lamps and Prohibition on Crushing		JUN 4, 2015
1063.	F003 Listed Hazardous Waste and the 10% Rule	ENCORE	JUN 11, 2015
1064.	F001 - F005 Listed Hazardous Waste and the 10% Rule	ENCORE	JUN 18, 2015
1065.	Macroencapsulation of Hazardous Debris and Presence of Free Liquids	ENCORE	JUN 25, 2015

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TWO MINUTE TRAINING

TO: CH2M HILL PLATEAU REMEDIATION COMPANY

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

SUBJECT: MACROENCAPSULATION OF HAZARDOUS DEBRIS AND PRESENCE OF FREE LIQUIDS

DATE: JUNE 25, 2015

<u>CHPRC Projects</u>	<u>CH PRC - Env. Protection</u>	<u>MSA</u>	<u>Hanford Laboratories</u>	<u>Other Hanford Contractors</u>	<u>Other Hanford Contractors</u>
Richard Austin Tania Bates Ty Blackford Bob Cathel Rene Catlow Richard Clinton Larry Cole John Dent Brian Dixon Eric Erpenbeck Stuart Hildreth Mike Jennings Stephanie Johansen Jeanne Kisielnicki Melvin Lakes Jim McGrogan Stuart Mortensen Anthony Nagel Dean Nester Dave Richards Phil Sheely Connie Simiele Roni Swan Michael Waters Jeff Widney	Brett Barnes Ron Brunke Bill Cox Laura Cusack Lorna Dittmer Rick Engelmann Ted Hopkins Jim Leary Dale McKenney Jon McKibben Rick Oldham Linda Petersen Fred Ruck Jennie Seaver Ray Swenson Wayne Toebe Lee Tuott Daniel Turlington Dave Watson Joel Williams	Jerry Cammann Jeff Ehlis Garin Erickson Lori Fritz Panfilo Gonzales Jr. Dashia Huff Mark Kamberg Edwin Lamm Candice Marple Saul Martinez Jon Perry Thomas Pysto Christina Robison Don Rokkan Lana Strickling Lou Upton	(TBD) <u>DOE RL, ORP, WIPP</u> Mary Beth Burandt Cliff Clark Mike Collins Tony McKarns Ellen Mattlin Greg Sinton Scott Stubblebine	Bill Bachmann Dean Baker Scott Baker Lucinda Borneman Paul Crane Tina Crane Greta Davis Jeff DeLine Ron Del Mar John Dorian Mark Ellefson Darrin Faulk Joe Fritts Tom Gilmore Rob Gregory Gene Grohs James Hamilton Andy Hobbs Ryan Johnson Dan Kimball Megan Lerchen Richard Lipinski Charles (Mike) Lowery Michael Madison Terri Mars Cary Martin Grant McCalmant Steve Metzger Tony Miskho Matt Mills Tom Moon Chuck Mulkey Mandy Pascual Kirk Peterson Jean Quigley	Dan Saueressig Merrie Schilperoort Joelle Moss Glen Triner Greg Varljen Julie Waddoups Kyle Webster Jeff Westcott Ted Wooley

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TWO MINUTE TRAINING

SUBJECT: Macroencapsulation of Hazardous Debris and Presence of Free Liquids

Q: A customer has hazardous debris as defined at [40 CFR 268.45](#) in the form of crushed containers. The crushed containers are destined for landfill disposal following macroencapsulation as defined at [40 CFR 268.45 Table 1](#). Some of the containers contain small amounts of free liquids and the customer is concerned about the prohibition on liquids in landfills at [WAC 173-303-140\(4\)\(b\)](#) [[40 CFR 264.314\(c\)](#) / [265.314\(b\)](#)]. Can the customer's debris contain free liquids if destined for macroencapsulation and landfill?

A: Per the [August 18, 1992 Federal Register \(57 FR 37194\)](#) on page 37223, it states:

"Even though debris must be a solid material, it may contain or be mixed with free liquids. The liquids may be waste or ground or surface water that may be entrapped in the debris (e.g. in partially crushed containers) or may be still oozing from the debris if the debris was newly generated or newly excavated from a remediation site. (If liquids separate from hazardous debris prior to treatment of the debris, they must be managed as hazardous waste.) Liquids that are entrapped in debris will be effectively treated under today's [hazardous debris] treatment standards for extraction or destruction technologies. If an extraction technology is used, the toxic constituents in the liquid will be removed from the debris as a treatment residue and is subject to the LDRs for the waste contaminating the debris. If a destruction technology is used, the toxic constituents in the liquids should be destroyed.

We note, however, that debris that is immobilized prior to land filling may not contain free liquids as provided by §§264.314 and 265.314. Thus, free liquids (including liquids in crushed containers) cannot be present in debris that is macroencapsulated or sealed, and cannot be present in debris that has been microencapsulated."

Therefore, the customer's debris consisting of crushed drums destined for landfill, could not be macroencapsulated if the debris contained free liquids. The free liquids would have to be removed prior to macroencapsulation. However, the free liquids would not have to be removed if the debris was treated via an extraction or destruction technology listed in 40 CFR 268.45, Table 1.

SUMMARY:

- Hazardous debris must be a solid, but may contain or be mixed with free liquids.
- Hazardous debris containing entrapped liquids are effectively treated via extraction or destruction technologies, e.g., chemical extraction, thermal extraction, thermal destruction, etc.
- Hazardous debris containing free liquids cannot be treated via immobilization (macroencapsulation, sealing or microencapsulation) and then disposed in a landfill.

Excerpts from WAC 173-303-140(4) and 40 CFR 264/265.314 are attached to the e-mail. If you have any questions, please contact me at "Paul_W_Martin@rl.gov" or at (509) 376-6620.

FROM: Paul W. Martin

DATE: 6/25/15

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TWO MINUTE TRAINING - ATTACHMENT

SUBJECT: Macroencapsulation of Hazardous Debris and Presence of Free Liquids

WAC 173-303-140 Land Disposal Restrictions.

(4) Land disposal restrictions and prohibitions. The land disposal requirements of this subsection apply to land disposal in Washington state.

(b) Disposal of liquid waste. Special requirements for bulk and containerized liquids.

(i) The placement of bulk or noncontainerized liquid dangerous waste or dangerous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

(ii) Containers holding free liquids must not be placed in a landfill unless:

(A) All free-standing liquid:

(I) Has been removed by decanting, or other methods; or

(II) Has been mixed with sorbent or stabilized (solidified) so that free-standing liquid is no longer observed; or

(III) Has been otherwise eliminated; or

(B) The container is very small, such as an ampule; or

(C) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

(D) The container is a labpack and is disposed of in accordance with WAC 173-303-161 and this chapter.

(iii) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following tests must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" EPA Publication SW-846 as incorporated by reference in WAC 173-303-110 (3)(a).

(iv) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: Materials listed or described in (b)(iv)(A) of this subsection; materials that pass one of the tests in (b)(iv)(B) of this subsection; or materials that are determined by the department to be nonbiodegradable through WAC 173-303-910.

TWO MINUTE TRAINING - ATTACHMENT

SUBJECT: Macroencapsulation of Hazardous Debris and Presence of Free Liquids

40 CFR §264.314 Special requirements for bulk and containerized liquids

- (a) The placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.
- (b) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846, as incorporated by reference in §260.11 of this chapter.
- (c) Containers holding free liquids must not be placed in a landfill unless:
- (1) All free-standing liquid:
 - (i) Has been removed by decanting, or other methods;
 - (ii) Has been mixed with sorbent or solidified so that free-standing liquid is no longer observed;
or
 - (iii) Has been otherwise eliminated; or
 - (2) The container is very small, such as an ampule; or
 - (3) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or
 - (4) The container is a lab pack as defined in §264.316 and is disposed of in accordance with §264.316.
- (d) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in paragraph (d)(1) of this section; materials that pass one of the tests in paragraph (d)(2) of this section; or materials that are determined by EPA to be nonbiodegradable through the part 260 petition process.

40 CFR §265.314 Special requirements for bulk and containerized liquids

40 CFR 265.314 (final status permits) has essentially the same wording as 40 CFR 264.314 (interim status standards) except the order of the paragraphs is slightly different and paragraph (d) reads:

(d) The date for compliance with paragraph (a) of this section is November 19, 1981. The date for compliance with paragraph (c) of this section is March 22, 1982.

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DATE: 6/25/15

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