

<u>SUBJECT</u>		<u>DATE</u>
1394. RCRA Empty vs. DOT Empty	ENCORE	JUL 30, 2020
1395. RCRA Empty vs. DOT Empty II	ENCORE	AUG 6, 2020
1396. Empty Containers and the "Empty" Label	ENCORE	AUG 13, 2020
1397. Exceptions to Free Liquids in Landfills Prohibition	ENCORE	AUG 20, 2020
1398. Dust Suppression in Landfills with Nonhazardous Liquids	ENCORE	AUG 27, 2020
1399. Treated Hazardous Wastes Used as Dust Suppressant	ENCORE	SEP 3, 2020
1400. Regulatory Status of Used Oil Mixed with Diesel Fuel	ENCORE	SEP 10, 2020
1401. RCRA Liquids, Free Liquids, and Releasable Liquids	ENCORE	SEP 17, 2020
1402. Available Regulatory Relief from Underlying Hazardous Constituent (UHC) Requirements	ENCORE	SEP 24, 2020
1403. Smoke Detector Disposal and the NRC	ENCORE	OCT 1, 2020
1404. DOT Shipping of Damaged, Defective, or Recalled Lithium Batteries	ENCORE	OCT 8, 2020
1405. Conservative Declaration that Material is a Hazardous Waste	ENCORE	OCT 15, 2020
1406. Manifest Exception Report Submittal Timeframes – RCRA vs. TSCA	ENCORE	OCT 22, 2020
1407. Characteristic Ignitable, Corrosive or Reactive Debris and Macroencapsulation	ENCORE	OCT 29, 2020
1408. RCRA Satellite Accumulation Areas and Applicability of Personnel Training		NOV 5, 2020
1409. The Hazardous Waste Generator Improvements Rule and Designation of Nonhazardous Waste		NOV 12, 2020
1410. RCRA Aisle Space Requirements and Washington State vs., EPA		NOV 19, 2020
1411. The Definition of Good Housekeeping	ENCORE	NOV 24, 2020
1412. Absorbent Additions and Treatment	ENCORE	DEC 3, 2020
1413. LDR Notifications and F001-F005 Constituents of Concern	ENCORE	DEC 10, 2020
1414. LDR Notifications and F001-F005 Constituents of Concern – Again!	ENCORE	DEC 17, 2020
1415. 'Twas the Night before Christmas – The Twenty-Seventh Edition		DEC 24, 2020
1416. LDR Notifications and F001-F005 Constituents of Concern - One Last Time!	ENCORE	DEC 31, 2020
1417. RCRA Empty Containers and Removing as Much Waste as Possible	ENCORE	JAN 7, 2021
1418. Universal Waste, Incandescent Bulbs and Nonhazardous Bulbs	ENCORE	JAN 14, 2021
1419. Listed Waste Codes and Pre-RCRA Wastes	ENCORE	JAN 21, 2021
1420. Commercial Chemical Products and Unused Batteries	ENCORE	JAN 28, 2021
1421. Recycling of Non-Listed Commercial Chemical Products	ENCORE	FEB 4, 2021
1422. RCRA Personnel Training and Classroom Training vs. Online Training	ENCORE	FEB 11, 2021
1423. EPA Definition of "Annual" Refresher Training	ENCORE	FEB 18, 2021
1424. Satellite Accumulation of Aerosol Cans and Determining the 55-Gallon Limit	ENCORE	FEB 25, 2021
1425. PCB Wastes and RCRA Hazardous Waste Characteristics D018 through D043	ENCORE	MAR 4, 2021
1426. PCB Containers and Empty Requirements	ENCORE	MAR 11, 2021
1427. PCB Containers and Empty Requirements II	ENCORE	MAR 18, 2021
1428. PCB Containers and Decontamination Requirements	ENCORE	MAR 25, 2021
1429. F002, Methylene Chloride and Coffee Decaffeination	APRIL FOOL'S	APR 1, 2021
1430. Central Accumulation Area – Location and Total Number		APR 8, 2021
1431. Satellite Accumulation Area Container and Temporary Central Accumulation		APR 15, 2021
1432. Satellite Accumulation and "At or Near"	ENCORE	APR 22, 2021
1433. Generators and Waste Analysis Plans		APR 29, 2021
1434. RCRA TSDFs Operating Record Requirements	ENCORE	MAY 6, 2021
1435. Operating Records Not Referenced in the "Operating Record" Regulations	ENCORE	MAY 13, 2021
1436. RCRA Generators Operating Record Requirements		MAY 20, 2021
1437. Operating Record vs. Operating Log		MAY 27, 2021
1438. RCRA Hazard Labeling – A Random Scenario	ENCORE	JUN 3, 2021
1439. RCRA Treatment and the Two-Part Definition	ENCORE	JUN 10, 2021
1440. D002 Waste and Dilution as Adequate LDR Treatment	ENCORE	JUN 17, 2021

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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: D002 WASTE AND DILUTION AS ADEQUATE LDR TREATMENT

DATE: JUNE 17, 2021

<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>
Richard Austin Tania Bates Rene Catlow Richard Clinton Stuart Hildreth Sasa Kosjerina Richard Lipinski Stuart Mortensen Dave Richards Sean Sexton Dave Shea Phil Sheely Jeff Westcott	Jeff Bramson Bob Bullock Frank Carleo Danielle Collins Jennifer Copeland Jeanne Elkins Ryan Fisher Jonathan Fullmer Leah Hare Steve Heninger John Hultman Julie Johanson Barry Lawrence Diane Leist Mitch Marrott Stewart McMahand Brian Mitcheltree Anthony Nagel Chris Plager Linda Petersen Brent Porter Dale Snyder Kat Thompson Wayne Toebe Daniel Turlington Britt Wilkins	Brett Barnes Michael Carlson Mike Demiter Kip George Jerry Cammann Garin Erickson Panfilo Gonzalez Jr. Dashia Huff Mark Kamberg Jon McKibben Saul Martinez Matt Mills Carly Nelson Michelle Oates Eric Pennala Jon Perry Christina Robison Christian Seavoy David Shaw John Skoglie Lana Strickling Greg Sullivan	(TBD) <u>DOE RL, ORP, WIPP</u> Duane Carter Al Farabee Tony McKarns	Bill Bachmann Dean Baker Scott Baker Paul Crane Tina Crane Ron Del Mar John Dorian Mark Ellefson Darrin Faulk Rob Gregory James Hamilton Andy Hobbs Stephanie Johansen Ryan Johnson Megan Lerchen Mike Lowery Michael Madison Terri Mars Cary Martin Grant McCalmant Steve Metzger Tony Miskho Tom Moon Chuck Mulkey Kirk Peterson	Dan Saueressig Joelle Moss Glen Triner Greg Varljen Robin Varljen Julie Waddoups Jay Warwick Ted Wooley

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TWO MINUTE TRAINING

SUBJECT: D002 Waste and Dilution as Adequate LDR Treatment

Q: A customer has a container of waste acid ($\text{pH} \leq 2$) that exhibits the characteristic of corrosivity and the customer assigned the hazardous waste code D002. The land disposal restriction (LDR) treatment standard for this waste is "DEACT" (deactivation - remove the characteristic) and treat for underlying hazardous constituents (UHCs). The customer has determined that no UHCs are present and therefore wants to simply add water to the waste to raise the pH to >2 and remove the characteristic. Can the customer add water to this waste acid in order to meet the LDR treatment standard of DEACT or would this be considered impermissible dilution?

A: Per [40 CFR 268.3\(a\)](#), it basically states that dilution of an LDR waste cannot occur as a substitute for adequate LDR treatment. There is an exception to the dilution prohibition in 40 CFR 268.3(b) but it is limited to management in Clean Water Act (CWA) systems or CWA equivalent systems.

However, [40 CFR 268, Appendix VI](#), "Recommended Technologies to Achieve Deactivation of Characteristics in Section 268.42" provides other specified treatment options for meeting the DEACT standard. Per this table, a D002 waste with a pH of ≤ 2 can be deactivated by using the specified technologies of RCORR (recovery of acids or bases), INCIN (incineration) or NEUTR (neutralization). A review of [40 CFR 268.42](#), "Treatment standards expressed as specified technologies" defines NEUTR as: "Neutralization with the following reagents (or waste reagents) or combinations of reagents: (1) Acids; (2) bases; or (3) water (including wastewaters) resulting in a pH greater than 2 but less than 12.5 as measured in the aqueous residuals".

Therefore, per the EPA recommended technologies in 40 CFR 268, Appendix VI, our customer could add water to the acid waste in order to meet the DEACT treatment standard. When the addition of water creates a pH >2 , the waste would be no longer exhibit the D002 characteristic and hence the LDR treatment standard of DEACT achieved. This dilution would be permissible since EPA considers it adequate LDR treatment.

Note that if the customer's acidic waste had also contained UHCs, neutralization alone would not be an adequate form of treatment since the UHCs would be impermissibly diluted. An acidic or basic waste with UHCs could be neutralized to remove the corrosive characteristic but then subsequent treatment would be required such as solidification or incineration to address any UHCs.

SUMMARY:

- The LDR treatment standard of DEACT can be achieved via NEUTR.
- NEUTR includes neutralization with water that results in a pH greater than 2 but less than 12.5.
- Adding water to a waste acid with no UHCs is not impermissible dilution since EPA recommends NEUTR as an adequate form of treatment to achieve DEACT.

Excerpts from 40 CFR 268.3, 268.42 and 268, Appendix VI are attached to the e-mail. If you have any questions, contact me at [Paul W Martin@rl.gov](mailto:Paul_W_Martin@rl.gov) or at (509) 376-6620.

FROM: Paul W. Martin

DATE: 6/17/2021

FILE: 2MT\2021\061721.rtf

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TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: D002 Waste and Dilution as Adequate LDR Treatment

40 CFR 268.3 Dilution prohibited as a substitute for treatment.

- (a) Except as provided in paragraph (b) of this section, no generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with subpart D of this part, to circumvent the effective date of a prohibition in subpart C of this part, to otherwise avoid a prohibition in subpart C of this part, or to circumvent a land disposal prohibition imposed by RCRA section 3004.
- (b) Dilution of wastes that are hazardous only because they exhibit a characteristic in treatment systems which include land-based units which treat wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Clean Water Act (CWA), or which treat wastes in a CWA-equivalent treatment system, or which treat wastes for the purposes of pretreatment requirements under section 307 of the CWA is not impermissible dilution for purposes of this section unless a method other than DEACT has been specified in §268.40 as the treatment standard, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.

40 CFR 268, Appendix VI

Recommended Technologies to Achieve Deactivation of Characteristics in Section 268.42

The treatment standard for many characteristic wastes is stated in the §268.40 Table of Treatment Standards as “Deactivation and meet UTS.” EPA has determined that many technologies, when used alone or in combination, can achieve the deactivation portion of the treatment standard. Characteristic wastes that are not managed in a facility regulated by the Clean Water Act (CWA) or in a CWA-equivalent facility, and that also contain underlying hazardous constituents (see §268.2(i)) must be treated not only by a “deactivating” technology to remove the characteristic, but also to achieve the universal treatment standards (UTS) for underlying hazardous constituents. The following appendix presents a partial list of technologies, utilizing the five letter technology codes established in 40 CFR 268.42 Table 1, that may be useful in meeting the treatment standard. Use of these specific technologies is not mandatory and does not preclude direct reuse, recovery, and/or the use of other pretreatment technologies, provided deactivation is achieved and underlying hazardous constituents are treated to achieve the UTS.

Waste code/subcategory	Nonwastewaters	Wastewaters
D002 Acid Subcategory based on 261.22(a)(1) with pH ≤ to 2	RCORR NEUTR INCIN	NEUTR INCIN
D002 Alkaline Subcategory based on 261.22(a)(1) with pH ≥ to 12.5	NEUTR INCIN	NEUTR INCIN

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TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: D002 Waste and Dilution as Adequate LDR Treatment

40 CFR 268.42 Treatment standards expressed as specified technologies.

- (a) The following wastes in the table in §268.40 "Treatment Standards for Hazardous Wastes," for which standards are expressed as a treatment method rather than a concentration level, must be treated using the technology or technologies specified in the table entitled "Technology Codes and Description of Technology-Based Standards" in this section.

Table 1-Technology Codes and Description of Technology-Based Standards

Technology code	Description of technology-based standards
DEACT:	Deactivation to remove the hazardous characteristics of a waste due to its ignitability, corrosivity, and/or reactivity.
NEUTR:	Neutralization with the following reagents (or waste reagents) or combinations of reagents: (1) Acids; (2) bases; or (3) water (including wastewaters) resulting in a pH greater than 2 but less than 12.5 as measured in the aqueous residuals.