Stranger Things in the RCRA Hazardous Waste Regulations

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Federal judges have variously described the hazardous waste regulatory program under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901 *et seq*., as Cloud Cuckoo Land, Alice in Wonderland, a topsy-turvy universe, and a mind-numbing journey. *See, e.g.*, *Am. Petroleum Inst. v. EPA*, 862 F.3d 50, 65 (D.C. Cir. 2017), *decision modified on reh'g*, 883 F.3d 918 (D.C. Cir. 2018) ("topsy-turvy universe"). One judge went so far as to declare that "[t]he people who wrote [the rules] ought to go to jail." *Judge Critical of Both Parties in* Marine Shale *Case*, Pesticide & Toxic Chem. News, Sept. 7, 1994, at 20.

These judges are not alone in this assessment. Indeed, the rules explicitly anticipate that they will sometimes create "substantial confusion" in the regulated community. 40 C.F.R. § 270.10(e)(2). They provide a formal mechanism for the EPA to rectify at least some of those situations, which the agency has employed on several occasions. *See, e.g.*, Burning of Hazardous Waste in Boilers and Industrial Furnaces, 56 Fed. Reg. 7134 (Feb. 21, 1991) (extending deadlines because of substantial confusion over the status of halogen acid furnaces and carbon regeneration units).

While there is stiff competition for the title of Biggest Head Scratcher in the RCRA rules, this article reviews some of the top contenders. In each case, RCRA's implementation could be significantly improved through regulatory reform.

The "Entire Recycling Train" Train Wreck

Under the RCRA regulations, the status of a recyclable material as waste or nonwaste depends on the nature of the material and how it will be recycled. For example, air or water pollution control sludges that are destined for recovery of useful metals are generally not classified as wastes, unless the EPA has specifically listed them as such. 40 C.F.R. § 261.2(c)(3). However, if the same materials are "used to produce products that are applied to or placed on the land" (e.g., fertilizers or cement)—commonly known as "use constituting disposal"—they are classified as wastes. *Id*. § 261.2(c)(1).

What if a sludge is processed in both ways—for example, first by recovering metal and then by using the remaining material to make fertilizer? The EPA issued multiple letters on this issue in 1991, concluding that the original sludge is a waste because "some portion of the [sludge] is to be used in a manner constituting disposal, even though another portion (the recovered [metal]) will not." Letter from Sylvia Lowrance, Dir., Off. of Solid Waste, EPA, to David Wisch, Neb. Dep't of Env't Control (Oct. 11, 1991) (RCRA Online #13507). It reasoned that "the solid waste determination for a recycled material is made at the point of generation of the waste, and takes into account the entire waste recycling process, not just the first step in a waste recycling train." *Id*. Accordingly, "[a]ny step which involves use in a manner constituting disposal . . . causes the waste to be a solid waste from the point of generation on." *Id*.

The EPA's position is problematic for several reasons. As a legal matter, it is questionable whether sludge sent for metals recovery can properly be viewed as "[u]sed to produce products that are applied to or placed on the land" just because a residue from the recovery process is used to make fertilizer. Perhaps if the recovered metals have little value and the primary motivation is the production of fertilizer, it could be said that the sludge is being used "to produce" (i.e., for the purpose of producing) a land-applied product. However, the EPA's letters are not limited in this way; instead, they make the blanket statement that if "any portion" is used in a manner constituting disposal, the entire sludge is being used in that manner and thus qualifies as waste, subject to onerous requirements for generators, transporters, and metal recovery facilities.

Moreover, the EPA's approach is environmentally counterproductive. If the residue from the metals recovery process is

Published in *Natural Resources & Environment* Volume 40, Number 4, Spring 2026.

disposed in a landfill, rather than used beneficially to make fertilizer, there will be no *use* constituting disposal—and indeed no use of the residue at all. Instead, the sludge will be recycled only to recover metal and thus will be classified as nonwaste. By reclassifying the sludge as waste if the residue is instead used in a manner constituting disposal, the agency discourages beneficial use of residues and favors their disposal in landfills—a result directly at odds with RCRA's goals. (Of course, the residues will be wastes whether they are disposed of or used in a manner constituting disposal, but they might not be hazardous if the initial metals recycling process removed hazardous constituents such as lead.)

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In practice, most recycling processes likely yield a residue that is used in a manner constituting disposal because some amount of residues are unavoidable and recyclers have an economic incentive to use "everything but the oink." The EPA's focus on the entire recycling train therefore may effectively nullify the rule that nonlisted sludges destined for metals recovery are not wastes, unnecessarily and inappropriately increasing the amount of material that must be managed as hazardous waste.

To avoid these problems, the EPA should rescind its guidance or perhaps modify it to state that when assessing the status of a material as waste or nonwaste, downstream steps in a recycling train need only be considered if there is clear evidence that they are the primary motivation for recycling.

The Definition That the EPA Doesn't Want You to Read

Continuing with the RCRA definition of "solid waste," another category of recyclable materials is "spent materials," which—unlike the (nonlisted) sludges discussed above—are classified as solid wastes when recycled through reclamation (e.g., recovery of useful constituents). 40 C.F.R. § 261.2(c)(3). For these purposes, a spent material is defined as "any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing." *Id.* § 261.1(c)(1). For example, a solvent that was used to degrease metal parts but became so contaminated that it could no longer be used for cleaning would be a spent material.

However, the EPA has not felt constrained by this definition. It has asserted in guidance that "'contamination,' as used in the definition of spent material, [is] *any impurity, factor or circumstance* which causes the material to be taken out of service for reprocessing." Memorandum from Michael Shapiro, Dir., Off. of Solid Waste, EPA, to Hazardous Waste Mgmt. Div. Dirs., EPA Regions 1–10 (Mar. 24, 1994) (RCRA Online #11822) (emphasis added). Thus, according to the EPA, a material without any impurities whatsoever may be deemed "contaminated" if there is another "factor or circumstance" that causes the material to be taken out of service, such as if it is broken, obsolete, or simply no longer wanted. *Id.* However, this reading conflicts with the plain meaning of the word "contaminated." Moreover, if *any* factor or circumstance qualifies as a form of contamination, there would be no reason for the regulations to specify that a spent material is a material that can no longer serve its original purpose "as a result of contamination." The EPA, through guidance, has effectively struck that phrase from the regulatory definition.

And the agency has not stopped there. In guidance, it has claimed that "[whether] a material can continue to be used for its original purpose is *not relevant* to the issue of whether or not it is a spent material." *Id.* (emphasis added). By asserting that a key part of the regulatory definition is somehow "not relevant," the EPA has effectively used guidance to strike another phrase from the regulatory definition.

Under the EPA guidance, little remains of the regulatory definition except that a spent material is "any material that has been used." And the agency has chipped away even at that. For example, it has claimed that "[a]irbag inflators that were installed in and then removed from vehicles are . . . [used and thus] spent material" even if they never were deployed/inflated. Memorandum from Barnes Johnson, Dir., Off. of Res. Conservation & Recovery, EPA, to EPA Reg'l RCRA & Enf't Div. Dirs. (July 19, 2018) (RCRA Online #14920). At this point, the incredible shrinking definition has nearly disappeared.

The EPA should rescind the guidance that has "interpreted" the term "spent material" to mean something other than what the rules say. If the agency believes the definition should be expanded, it should go through the rulemaking process to ensure full consideration of relevant legal and policy issues, including input from the regulated community and the general public.

Discarded Products Consisting of Mixed Toxics Are Not Toxic

Turning to the RCRA definition of *hazardous* waste, one of the two main ways that the regulations classify solid wastes as hazardous wastes is by specifically listing them as such. 40 C.F.R. § 261.3(a)(2)(ii). The regulations include a few lists, the longest of which contain hundreds of chemical names for toxic "commercial chemical products" that are hazardous wastes when discarded. *Id.* § 261.33. However, the rules specify that the term "commercial chemical product" covers only commercially pure or technical grades of the listed chemicals and "formulations in

which [a listed] chemical is the sole active ingredient." *Id.* § 261.33(d), Comment.

Under these rules, a product consisting of a listed chemical (e.g., a listed pesticide) diluted to a concentration of 1% by water, a solvent, or other inert ingredients would be a hazardous waste when discarded. However, a discarded product consisting of 80% of the same listed chemical and 20% of a second active ingredient (without any inactive ingredients) would *not* be a hazardous waste—even if the second active ingredient is also a listed chemical (e.g., another listed pesticide).

The RCRA "mixture rule" would not affect this outcome. Although that rule classifies mixtures of listed hazardous wastes with other wastes as hazardous wastes, *id.* § 261.3(a)(2)(iv), it does not apply to discarded products containing more than one active ingredient because such products result from a mixture of raw material ingredients, not a mixture of wastes. As a result, a discarded product consisting 100% of listed toxic chemicals may not qualify as hazardous waste at all.

From the beginning of the RCRA program, the EPA has recognized that the rules are "deficient in [their] failure to address products containing mixtures of [toxic active] ingredients." Hazardous Waste Management System: Identification and Listing of Hazardous Waste, 45 Fed. Reg. 78,532, 78,539 (Nov. 25, 1980). It proposed a partial fix to the problem in 1986 but never took final action on that proposal. Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Commercial Chemical Products, 51 Fed. Reg. 5472 (Feb. 13, 1986). A few states have adopted their own approaches to the issue, but they may be problematic for independent reasons. *See, e.g.*, 6 Colo. Code Regs. 1007-3, § 261.33(d), Note (covering "formulations [with] more than one active ingredient"); Or. Admin. R. 340-101-0033(2)(a) (covering most discarded products containing more than 3% or 10% listed toxic chemicals, depending on the chemicals).

The EPA should revisit its 1986 proposal, which provided at least the seed of a rational approach for discarded products containing acutely toxic chemicals. It specified a method for estimating the toxicity of such a product, based on the concentrations and toxicities of individual components, and it would have classified the product as hazardous if the estimated overall toxicity exceeded certain limits.

Lies, Damn Lies, and EPA Statistics

The other main way (besides listing) that the RCRA regulations classify a solid waste as a hazardous waste is if a "representative sample" of the waste exhibits certain characteristics, such as if, when subjected to a laboratory test known as the Toxicity Characteristic Leaching Procedure (TCLP), it yields a leachate containing certain hazardous constituents in concentrations at or above specified regulatory thresholds. 40 C.F.R. § 261.24. For these purposes, a "representative sample" is defined as "a sample of a universe or whole . . . which can be expected to exhibit the *average* properties of the universe or whole." *Id.* § 260.10 (emphasis added). However, the EPA has cautioned that "the term 'representative sample' can be misleading unless one is dealing with a homogeneous waste from which one sample can represent the whole population." EPA, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (commonly known as SW-846), at NINE-30 (1986). According to the agency, "[i]n most cases, it would be best to consider a 'representative data base' generated by the collection and analysis of more than one sample that defines the average properties or composition of the waste." *Id.*

The EPA, in guidance, has identified a statistical method for determining whether a database indicates that a waste is hazardous under the TCLP. Because random samples may not reflect the full variability in a waste, the average of the test results for the samples in the database (the database average) is not necessarily the true average for the whole waste from which the samples were taken (the whole-waste average), which is what matters under the regulations. However, statistics can be applied to the sample test results to make estimates of where the whole-waste average is likely to be.

Under the EPA's guidance, statistics are used to calculate an approximate "upper limit" for the whole-waste average, such that there will be only a 10% chance that the whole-waste average will be higher than the calculated upper limit. According to the guidance, "[i]f the upper limit is less than the [relevant regulatory] threshold, the chemical contaminant is not considered to be present in the waste at a hazardous level; otherwise, the opposite conclusion is drawn." *Id.* at NINE-6.

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There is one key problem with the EPA's guidance: It appears to be inconsistent with the regulations and an unlawful basis for administrative, civil, or criminal enforcement. For example, in an administrative or civil action, the EPA must prove by a "preponderance of the evidence" that the respondent or defendant violated the hazardous waste regulations—including that the waste at issue was hazardous in the first place. For a toxicity characteristic waste, that means that the government must prove that there is more than a 50% probability that the average TCLP concentration for a hazardous constituent in the waste (i.e., the whole-waste average) exceeds the corresponding regulatory threshold. However, the EPA's guidance purports to establish a less rigorous standard for enforcement. It suggests that a waste may be classified as hazardous if the "upper limit" equals the regulatory threshold, at which point there is only a 10% chance that the whole-waste average is above the

threshold. Clearly, if there is only a 10% chance that the average is above a regulatory threshold, the EPA cannot meet the more-than-50% standard of proof needed to sustain an enforcement action.

In a criminal case, where the government must prove the waste is hazardous "beyond a reasonable doubt," the EPA's statistical test is even more inappropriate. While that standard of proof does not correspond directly to a particular percentage of certainty, it is sometimes equated to a 90% standard (or even greater). *See, e.g.*, *Branion v. Gramly*, 855 F.2d 1256, 1263 n.5 (7th Cir. 1988). Given that EPA's guidance claims that a waste can be classified as hazardous when there is only a 10% chance that the waste exceeds a regulatory threshold, it is manifestly unsuitable for use in the criminal context.

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As if the EPA's current guidance on statistics wasn't bad enough, the agency in 2002 issued draft guidance identifying two even more inappropriate methods for determining whether wastes exhibit the toxicity characteristic. EPA, *RCRA Waste Sampling Draft Technical Guidance*, EPA530-D-02-002, at 26–28 (Aug. 2002). Under the first method, hazardous waste status would not be determined by reference to an estimate of the whole-waste average (e.g., the 50th percentile) as specified in SW-846, but rather by reference to an estimate of an *upper percentile* of the distribution (e.g., the 99th). Under the second method, any exceedance of the regulatory threshold in a single sample would be enough, by itself, to classify a whole waste as hazardous. Of course, neither of these tests has anything to do with the *average* properties of the waste as a whole, which is the standard set forth in the regulations, and they would not be a permissible basis for enforcement.

In response to industry objections to the draft guidance, the EPA in 2004 issued a letter acknowledging the fundamental "scientific and legal concerns" raised and stated that it would revise the guidance "in the near future." Letter from Matt Hale, Dir., Off. of Solid Waste, EPA, to Lakeisha R. Harrison, Am. Petroleum Inst. (Sept. 20, 2004) (RCRA Online #14743). The Agency also stressed that "[u]ntil we make a final decision on the guidance, Chapter Nine [of SW-846] is the applicable guidance." *Id.* Nevertheless, over 20 years later, the draft guidance remains unchanged and is still posted on the EPA website. Early on, the EPA posted the letter to industry together with the draft guidance to provide necessary context. However, the EPA has since removed the reference to that letter and replaced it with a generic statement that the agency received and is considering public comments. In this way, the EPA is practically inviting misuse of the disputed and discredited draft guidance by enforcement personnel and others.

The EPA should align its guidance with the regulations by clarifying that to sustain an enforcement action, the agency must demonstrate that there is at least a 50% chance that the waste involved is hazardous (higher in criminal cases)—not just a 10% chance, as suggested by current guidance. To ensure a safe harbor (e.g., in case future testing causes probabilities to shift), individual generators might base their compliance programs on a more stringent standard, such as the one in existing guidance—but that would be entirely voluntary.

"Don't Ask, Don't Tell" Treatment Requirements

The RCRA Land Disposal Restrictions (LDR) program establishes treatment standards for each type of hazardous waste that must be met before the waste or residues thereof can be disposed of or otherwise placed on land. 40 C.F.R. pt. 268. For wastes that are hazardous solely because they exhibit a characteristic of hazardous waste (i.e., ignitability, corrosivity, reactivity, or toxicity under the TCLP), the treatment standards generally require treatment beyond simple removal of the characteristics, such as treatment of hazardous constituents to levels far lower than the characteristic TCLP levels discussed above. Thus, the standards continue to apply even if the wastes have been treated so that they no longer exhibit any hazardous characteristics. *Id.* § 261.3(d)(1). At that point, the "de-characterized" wastes may be sent to a facility authorized to manage only nonhazardous wastes, but if the wastes do not yet meet the applicable treatment standards, they must be treated further to meet such standards before they may be land disposed.

When *hazardous* wastes are sent to an offsite facility, the generator generally must notify the receiving facility that the wastes are subject to treatment standards and whether or not they meet the applicable standards. *Id.* § 268.7. However, "[when a] generator sends [a] *decharacterized* waste off site to a Subtitle D (nonhazardous) waste facility . . . the generator is *not* required to notify the Subtitle D facility." EPA, *LDR Paperwork Requirements for Subtitle D Facilities*, RCRA, Superfund & EPCRA Hotline Monthly Rep., Nov. 2001 (RCRA Online #14585) (*LDR Paperwork Guidance*) (emphasis added). Instead, the generator is merely required to place a notification in its *own* files. 40 C.F.R. § 268.9.

There is no requirement to inform the facility receiving the wastes (which could be a landfill, treatment, or recycling facility) that such wastes were formerly hazardous wastes or that they are prohibited from land disposal if they fail to meet specific treatment standards. Which raises the question: If a receiving facility isn't informed that a waste is prohibited from land disposal—and there is no way for the facility to find out for itself because the waste does not exhibit hazardous characteristics—is there really a prohibition at all?

The EPA also has made clear that "Subtitle D treaters (i.e., treaters of wastes which are no longer hazardous but which

require treatment to satisfy LDR treatment standards) are not . . . required to verify compliance with treatment standards." *LDR Paperwork Guidance*, *supra*. The absence of such a verification requirement further calls into question the vitality of the LDR requirements for de-characterized wastes.

To ensure that the treatment standards for de-characterized wastes are meaningful and followed, the EPA should reconsider its past decisions not to require facilities receiving de-characterized wastes to be notified and to verify compliance. Alternatively, it could reconsider the underlying treatment standards that impose requirements on de-characterized wastes.

Divided We Stand, United We Fall

The RCRA Universal Waste Rule establishes streamlined requirements for persons that generate, transport, or collect certain ubiquitous hazardous wastes (e.g., batteries, light bulbs, and aerosol cans) to encourage and facilitate proper management of such wastes. 40 C.F.R. pt. 273. For example, universal wastes can be transported by a common carrier, rather than a hazardous waste transporter, and can be collected at a location without a hazardous waste storage facility permit. However, the ultimate destination facility where the universal wastes are recycled or disposed of remains subject to full hazardous waste regulation. *Id*. § 273.60. In the case of a recycling facility, the recycling process itself is generally exempt from regulation (with limited exceptions). *Id*. § 261.6(c). However, any storage of the waste at the recycling facility prior to recycling requires a permit.

Requiring recycling facilities to have a storage permit makes sense for nonuniversal hazardous wastes because a stand-alone collection facility also would require a permit. However, that's not the case for universal wastes. As noted above, facilities that merely collect, but do not recycle, universal wastes are not required to obtain a storage permit.

To avoid the need to obtain a storage permit, which generally takes years and is extremely costly, recyclers of universal wastes almost invariably split their facilities into two parts: a collection-only facility and a nearby (but nonadjacent) recycling-only facility. The collection-only facility doesn't require a permit because of the Universal Waste Rule, and if it can deliver the wastes to the recycling-only facility on a "just-in-time" basis for processing, the recycling facility won't be storing the wastes and thus won't require a storage (or recycling) permit. *Id*. §§ 273.60(b), 261.6(c)(2).

Effectively requiring universal waste recycling facilities to be split in this way serves no environmental purpose. On the contrary, doing so imposes unnecessary costs, complicates logistics for the recycler, and increases transport and handling risks.

The EPA could mitigate these problems, while protecting human health and the environment, by allowing universal waste recyclers to store the wastes (prior to recycling) without a permit, provided they comply with the same standards that apply to universal waste collection facilities.

More Strangeness

The issues discussed above represent only a small sample of the problems that the RCRA hazardous waste regulatory program creates. However, many of these problems have relatively easy fixes. Rationalizing the RCRA regulations should be an EPA priority.

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