

**PETITION OF AMERICAN COATINGS ASSOCIATION, INC. AND PAINTCARE INC.
TO INCLUDE PAINTS IN THE UNIVERSAL WASTE PROGRAM
UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT**

Submitted to:

The Honorable Michael Regan
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and
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**PETITION OF AMERICAN COATINGS ASSOCIATION, INC. AND PAINTCARE INC.
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I. INTRODUCTION AND SUMMARY

The American Coatings Association, Inc. (“ACA”) and PaintCare Inc. (“PaintCare”) (hereinafter referred to jointly as “ACA/PaintCare”) hereby petition the Administrator of the U.S. Environmental Protection Agency (“EPA” or the “Agency”), pursuant to Section 7004(a) of the Resource Conservation and Recovery Act (“RCRA”), 42 U.S.C. § 6974(a), and 40 C.F.R. §§ 260.20, 260.23 and 273.80, to add “paints” (to be defined as discussed further below) to the universal waste management program set forth in 40 C.F.R. Part 273.

As discussed in detail below, EPA acknowledged at the time that the universal waste program was first proposed in 1993 that paint wastes might be prime candidates for inclusion in the program. Shortly after the initial universal waste rule was adopted in 1995, the Agency received a petition to add paint wastes to the rule, but it never processed that petition due to resource constraints. Now, almost 30 years later, the case for classifying and regulating paint wastes as universal wastes is more compelling and important than ever before. Doing so would greatly facilitate the ongoing development of product stewardship programs for paint wastes, such as PaintCare, thereby helping to divert such wastes from the municipal solid waste stream and promoting the environmentally sound management of such wastes, including through beneficial recycling.

Seven states have already acted to add paint wastes to their own universal waste programs, including most recently New York. All eight factors set forth in the regulations as considerations for designating new categories of universal wastes support similar action by EPA (even though the Agency has stated that that is not necessary for a universal waste designation, as long as the *balance* of the factors supports such action). Accordingly, EPA should finally follow through on its own original suggestion long ago that paint wastes should be classified and regulated as universal wastes.

In moving forward with this effort, EPA should pay particular attention to a number of key issues, such as: (i) the definition of the paint wastes to be covered by the universal waste rule; (ii) clarification of the point at which paints become solid wastes; (iii) establishment of appropriate standards for storage or other management of paints (*e.g.*, sorting or consolidation of paints) by universal waste handlers; (iv) the relationship between the universal waste rule for paints and existing universal waste rules for aerosol cans and pesticides (both of which cover some paint wastes); (v) state adoption of the universal waste rule, and (vi) the effects on interstate transport of any failure by states to adopt the universal waste rule for paints. ACA/PaintCare address each of these issues in detail below and offer specific suggestions for resolving the issues, based in large part on the rules in the states that have already acted to classify paints as universal wastes. We also provide proposed regulatory language to effectuate the suggested changes in Attachment A to this petition.

ACA/PaintCare greatly appreciate EPA’s consideration of this petition. We welcome the opportunity to discuss this matter with the Agency, and we stand ready to assist EPA in whatever way might be helpful in advancing the designation of paints as universal wastes and thereby facilitating paint stewardship programs that further the goal of sustainability.

II. PETITIONER NAMES, ADDRESSES, AND STATEMENTS OF INTEREST

The names, addresses, and statements of interest for the two Petitioners submitting and supporting this petition are set forth below, as specified under 40 C.F.R. § 260.20(b)(1)-(2).

(1) American Coatings Association, Inc. (“ACA”)

o *Address:*

901 New York Avenue, N.W.
Suite 300 West
Washington, DC 20001

o *Statement of Interest:*

The American Coatings Association is a voluntary, nonprofit trade association working to advance the needs of the paint and coatings industry and the professionals who work in it, including: manufacturers, raw materials suppliers, distributors, and technical professionals. ACA serves as an advocate and ally for members on legislative, regulatory and judicial issues, and provides forums for the advancement and promotion of the industry through educational and professional development services.

ACA members – particularly paint manufacturers and distributors – are directly affected by the existing rules that apply to hazardous paint wastes, since they may generate such wastes, for example in the form of off-specification paints, expired paints, paints that fail to sell through to customers, spilled paints, etc. Accordingly, classification of paint wastes as universal wastes subject to streamlined regulatory requirements, as sought under this petition, would significantly reduce the regulatory burdens and costs on the relevant ACA members and thereby facilitate responsible stewardship for the paint wastes.

(2) PaintCare Inc. (“PaintCare”)

o *Address:*

901 New York Avenue, N.W.
Suite 300 West
Washington, DC 20001

o ***Statement of Interest:***

PaintCare Inc. is a non-profit 501(c)(3) organization established by ACA to plan and operate post-consumer paint stewardship programs in U.S. states and jurisdictions that enact paint stewardship laws. To date, PaintCare has launched such programs in 11 jurisdictions across the country, including California, Colorado, Connecticut, the District of Columbia, Maine, Minnesota, Oregon, Rhode Island, Vermont, and, most recently, Washington, New York, and Illinois. Through these programs, PaintCare has collected over 64 million gallons of paint, thereby removing them from the municipal waste stream, helping local communities reduce their waste management costs, and ensuring that the paints are managed in an environmentally protective way.

Because the very purpose of PaintCare is to manage unwanted paints, many of which may qualify as hazardous wastes (*e.g.*, certain oil-based paints that are ignitable and may not have viable recycling options other than burning for energy recovery), it is directly affected by the existing rules that apply to hazardous paint wastes. Classification of paint wastes as universal wastes, as sought under this petition, would significantly reduce the regulatory burdens and costs on PaintCare and thereby facilitate responsible stewardship for paint products.

III. SUMMARY OF PROPOSED ACTION

ACA/PaintCare are petitioning the Administrator to amend the RCRA Subtitle C regulations so as to add paints that otherwise qualify as hazardous wastes to the universal waste program. The rationale for classifying and regulating paints as universal wastes is discussed in Section IV below. As part of this petition, we also specifically request that EPA do the following:

- o Define “paint” for these purposes, as discussed in Section V.A below;
- o Specify the range of paints that would be subject to the universal waste rule (including clarifying when paints are solid and hazardous wastes, as discussed in Section V.B below);
- o Establish management standards for the relevant paint wastes, as discussed in Section V.C below);
- o Stipulate how the new universal waste rule for paints will relate to the existing universal waste rules for aerosol cans and pesticides, for paints that may fall within multiple universal waste categories, as discussed in Section V.D below;
- o Clarify the effect of the universal waste rules on transport of universal wastes from, to, and through all states, whether they have adopted the relevant universal waste rule(s) or not, as discussed in Section V.E below; and

- o Make conforming changes in other portions of the RCRA regulations, as discussed in Section V.F below.

Suggested regulatory language to achieve these objectives is provided in Attachment A to this petition.

IV. DEMONSTRATION THAT PAINT WASTES ARE WELL-SUITED FOR INCLUSION IN THE UNIVERSAL WASTE PROGRAM UNDER THE RELEVANT FACTORS SET FORTH IN THE REGULATIONS

The Universal Waste Rule provides that the decision whether to classify additional wastes as universal wastes shall be based on the consideration of eight factors set forth in 40 C.F.R. § 273.81. *See* 40 C.F.R. § 273.80(c). Importantly, EPA has stressed that “it does not believe that each and every factor must be met in order for a waste to be appropriate for the universal waste system, and for regulation of the waste under part 273.” *See* 60 Fed. Reg. 25,492, 25,513 (May 11, 1995). Rather, the decision on whether to designate a new universal waste “will be based on the *weight of the evidence* showing that regulation under 40 CFR part 273 is appropriate for the waste or category of waste, will improve management practices for the waste or category of waste, and will improve implementation of the hazardous waste program.” *See* 40 C.F.R. § 273.80(c) (emphasis added).

ACA/PaintCare address each of the eight factors separately below, which demonstrates that the weight of the evidence supports the classification of paint waste as a universal waste.

- o **CRITERION #1:** *The waste or category of waste, as generated by a wide variety of generators, is listed in subpart D of part 261 of this chapter, or (if not listed) a proportion of the waste stream exhibits one or more characteristics of hazardous waste identified in subpart C of part 261 of this chapter. [40 C.F.R. § 273.81(a)]*

When paints are discarded or intended to be discarded, they clearly qualify as “solid wastes” under RCRA and its implementing regulations. *See, e.g.,* RCRA § 1004(27), 42 U.S.C. § 6903(27) (“The term ‘solid waste’ means any ... discarded material, including solid, liquid, semisolid or contained gaseous material”). In addition, as discussed below, a significant percentage of paint wastes – primarily waste of oil-based paints – are hazardous because they exhibit a hazardous waste characteristic (typically ignitability).

As an initial matter, it is important to note that paint wastes are rarely, if ever, listed hazardous wastes.¹ While some solvents contained in paints (*e.g.,* toluene) may be listed as commercial chemical products (“CCPs”), the CCP listings apply only to pure or technical grades of the specified chemicals and formulations in which a listed chemical is the sole active ingredient. *See* 40 C.F.R. § 261.33(d), Comment. Paints clearly have active ingredients other than solvents (*e.g.,* resins and colorants) and thus are not covered

¹ *See, e.g.,* Letter from Elizabeth Cotsworth, Acting Director, Office of Solid Waste, EPA, to James E. Thomas, Jr., Jetco, Inc. (April 11, 1997) (RCRA Online #14084) (Attachment B) (“Discarded paints generally are not found on EPA’s ‘Lists of Hazardous Wastes’ found at Subpart D of 40 CFR part 261”).

by the CCP listings for the solvents (or any other ingredients). Similarly, while some of the solvents in paints may be listed when used/spent, discarded paints are not used/spent materials, and EPA has consistently maintained that commercial products like paints that contain solvents as ingredients are not covered by the spent solvent listings.² This still holds true even if the paints have been thinned by adding pure solvent.³

Turning to the hazardous waste characteristics, the main characteristic of potential relevance is ignitability. Oil-based paints commonly have a flash point less than 60°C (140°F), and thus may be classified as ignitable hazardous wastes when discarded. *See* 40 C.F.R. § 261.21(a)(1) (ignitability characteristic for liquids); Letter from Elizabeth Cotsworth, Acting Director, Office of Solid Waste, EPA, to James, E. Thomas, Jr., Jetco, Inc. (April 11, 1997) (RCRA Online #14084) (Attachment B) (“Paint wastes may exhibit characteristics such as ignitability”). Such paints represented approximately 16.5% of the market for architectural paints in 2003.⁴ Thus, they can be expected to represent a similar percentage of the paint wastes currently being generated.⁵ Latex paints, in contrast, generally do not exhibit the characteristic of ignitability, either because they have a higher flash point (*i.e.*, typically in excess of 200°F) or because they qualify for the exclusion from the ignitability characteristic for “solution[s] containing less than 24 percent alcohol by volume and at least 50 percent water by weight.”⁶

² *See* 50 Fed. Reg. 53,315, 53,516 (December 31, 1985) (“wastes where solvents were used as ... ingredients in the formulation of commercial chemical products are not covered by the [spent solvent] listing[s]. The products themselves also are not covered”); Letter from Devereaux Barnes, Director, Characterization and Assessment Division, Office of Solid Waste, EPA, to William Lindberg, Regulatory Affairs Coordinator, SWI, Inc. (May 5, 1988) (RCRA Online #11349) (Attachment C) (“Paints, which are included in the classification of such commercial chemical products [that are formulated with solvent ingredients] are ... not F-listed spent solvent hazardous wastes”).

³ *See* Letter from Jacqueline W. Sales, Chief, Regulatory Development Section, Office of Solid Waste, EPA, to Stephen J. Evans, Environmental Engineer, Modine Manufacturing Company (May 20, 1987) (RCRA Online #12925) (Attachment D) (“the addition of petroleum naphtha solvent to a paint product constitutes the formulation of a modified paint product. The Agency does not recognize a distinction between paints that contain solvents and paint where solvents have been added. Therefore, thinned paint ... that is later discarded as a waste or paint sludge resulting from the use of the thinned paint would not be covered under the F001-F005 spent solvent listings”).

⁴ *See* *Washington Post*, “Supply of Oil-Based Paint Thins as New Rule Takes Effect” (May 24, 2005) (referencing U.S. Department of Commerce data for 2003) (Attachment E), *available online at* <https://www.washingtonpost.com/archive/politics/2005/05/24/supply-of-oil-based-paint-thins-as-new-rule-takes-effect/20e0e87c-cf00-450f-b1ac-3c3be0d01fa5/>. The market share for oil-based architectural paints has decreased somewhat over time, for example due to restrictions on volatile organic compounds, but it remains substantial. In addition, oil-based paints represent a significantly higher percentage of certain other paint categories.

⁵ *See, e.g.*, Product Stewardship Institute, “Latex Paint Recovery in Minnesota: Paint Composition Analysis & Market/End-Use Study” (December 19, 2018) at 7 (Attachment F) (estimating that latex paints represented approximately 640,000 gallons of a total 790,000 gallons of all paint collected in each of nine PaintCare states, on average, which corresponds to approximately 19% oil-based paint), *available online at* https://www.paintcare.org/wp-content/uploads/docs/2018-PSI-Minnesota-latex-paint-recovery-report_FNL.pdf.

⁶ *See* 40 C.F.R. § 261.21(a)(1); 45 Fed. Reg. 33,084, 33,108 (May 19, 1980) (“A number of commenters argued that the 140° F flashpoint for liquids improperly included many liquid wastes such as ... some latex paints which exhibit low flashpoints because of their alcohol content but do not sustain combustion because of the high percentage of water present. EPA agrees that such wastes should not be designated as hazardous”); EPA, RCRA Hotline Report

Certain types of paints might exhibit the RCRA characteristic of corrosivity. Indeed, under the U.S. Department of Transportation (“DOT”) Hazardous Materials Regulations (“HMR”), some paints are classified as corrosive (sometimes together with being flammable).⁷ However, it is important to note that the DOT definition of corrosive is significantly different than the corresponding RCRA definition, and therefore paints that are DOT corrosive are not necessarily RCRA corrosive.⁸

With respect to the final hazardous waste characteristic, toxicity, some legacy paints did contain lead or mercury; however, these metals have generally been banned from use in paints for decades, and thus should generally not be found in the paints being discarded today.⁹

- o **CRITERION #2: *The waste or category of waste is not exclusive to a specific industry or group of industries, is commonly generated by a wide variety of types of establishments (including, for example, households, retail and commercial businesses, office complexes, conditionally exempt small quantity generators, small businesses, government organizations, as well as large industrial facilities).* [40 C.F.R. § 273.81(b)]**

Paint wastes are generated by an exceptionally wide range of establishments, including essentially any household, business, government entity, or non-profit that owns a building or part of a building, as well as many that lease a building or part of a building. Examples include, but are certainly not limited to, households, owners/operators of multifamily

(July 1992) (RCRA Online #13548) (Attachment G) (“EPA originally intended for the alcohol exclusion to exempt ... some types of latex paints, which exhibit low flash points due to the alcohol content, but do not sustain combustion because of the high water content”); 85 Fed. Reg. 40,594, 40,600 (July 7, 2020) (“the original intent of the [aqueous alcohol] exclusion ... was [to address] beverage alcohols and latex paints that do not sustain combustion”).

⁷ Under the HMR, paints that qualify as hazardous materials are generally classified with the United Nations (“UN”) code UN1263 (flammable only), UN3469 (flammable with a subsidiary corrosive hazard), UN3470 (corrosive with a subsidiary flammable hazard), or UN3066 (corrosive only). *See* 49 C.F.R. § 172.101 (Hazardous Materials Table).

⁸ The RCRA characteristic of corrosivity covers wastes that have pH lower than 2.0 or greater than 12.5, as well as wastes that corrode steel rapidly. *See* 40 C.F.R. § 261.22. In contrast, the HMR definition of corrosive materials does not include any pH criteria. *See* 49 C.F.R. § 173.136(a). Moreover, while the HMR definition (like the RCRA definition) covers materials that rapidly corrode steel, it also covers materials that rapidly corrode aluminum. *Id.* Finally, the HMR definition encompasses materials that “cause[] irreversible damage to human skin at the site of contact within a specified period of time” *Id.* The RCRA definition does not include a skin corrosion test.

⁹ *See, e.g.*, 58 Fed. Reg. 8102, 8109 n. 8 (February 11, 1993) (“Mercury has not been used in paints since 1991 and thus the mercury contribution from paint residues is projected to decrease rapidly in the future”); 66 Fed. Reg. 10,060, 10,101 n. 23 (February 13, 2001) (“Prior to the 1990s, paint manufacturing used mercury in paints at low levels (*e.g.*, phenylmercuric acetate was used as a biocide to control mildew in latex paints). EPA restricted this use under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), eliminating mercury in interior latex paints (55 FR 26754, June 29, 1990) and in exterior paints (56 FR 105, May 31, 1991”); 16 C.F.R. § 1303.1 (banning paint and similar surface-coating materials for consumer use that contain lead at levels above 0.06% (effective February 27, 1978) or above 0.009% (effective August 14, 2009)).

dwellings (e.g., apartment buildings), government and private-sector office buildings, stores, warehouses, restaurants, schools, hospitals, correctional institutions, sports and entertainment venues, parks with restroom structures or event pavilions, and buildings used for religious worship. Painting contractors and others who provide painting services to the entities above also generate paint wastes, as do wholesale and retail distributors of paint products. While many of these entities are exempt or conditionally exempt from regulation, based on the fact that they are households or Very Small Quantity Generators (“VSQGs”), others are fully regulated generators of hazardous wastes – either based on the amount of hazardous paint wastes alone that they generate, or based on the combined amount of hazardous paint wastes and other hazardous wastes generated onsite.¹⁰

Paints and coatings are also used by original equipment manufacturers (“OEMs”) of a wide range of products, such as furniture, appliances, motor vehicles, aircraft, rail rolling stock, and industrial or farm equipment. Specialty paints are used in applications as diverse as marine vessels, wind turbines, offshore oil rigs, bridges, road markings, parking lots, sporting courts, and food and beverage cans.

Clearly, waste paints are generated ubiquitously in an extremely wide range of settings, including residential, commercial, industrial, and governmental. This fact makes them ideal candidates for the universal waste rule. EPA has long stressed that “[o]ne of the problems the universal waste rule is designed to address is that a relatively large portion of some waste types are exempt from the hazardous waste regulations (*i.e.*, are generated by households and CESQGs) and are indistinguishable from the regulated portion of the waste. This ‘look alike’ problem makes implementation of the [standard RCRA] program for these wastes extremely difficult.” *See* 60 Fed. Reg. at 25,514. Paint wastes appear to be precisely the type of material that EPA had in mind. A large proportion of paint wastes are generated by exempt household and VSQGs, but regulated entities generate a substantial amount of paint wastes, as well, and such wastes are typically indistinguishable from the paint wastes generated by exempt persons.

- o **CRITERION #3: *The waste or category of waste is generated by a large number of generators (e.g., more than 1,000 nationally) and is frequently generated in relatively small quantities by each generator.* [40 C.F.R. § 273.81(c)]**

¹⁰ Household wastes are excluded from RCRA regulation under 40 C.F.R. § 261.4(b)(1). EPA has made clear that paint and related wastes generated during residential maintenance qualify as household wastes, whether generated by the resident or a contractor. *See, e.g.*, Letter from Michael Shapiro, Director, Office of Solid Waste, EPA, to Mark Veckman, Comprehensive Environmental Assessments (May 24, 1994) (RCRA Online #11838) (Attachment H) (discussing lead-based paint removal wastes) (“EPA does not distinguish between waste generated at a household by a homeowner and waste generated at a household by a person other than the homeowner (*e.g.*, contractor) provided that the waste is generated as part of daily living. ... [S]olid waste generated by a homeowner, resident, or a contractor at a home as part of routine residential maintenance ... would be covered under the RCRA household waste exemption”).

Paint wastes generated in non-residential settings would not be excluded household wastes, but may in some cases qualify as exempt VSQG wastes. VSQGs (previously referred to as Conditionally Exempt Small Quantity Generators or “CESQGs”) are defined as generators of 100 kg (220 lbs) or less per month of total hazardous wastes (including, but not limited to, hazardous paint wastes) and one kg or less per month of acutely hazardous waste. *See* 40 C.F.R. § 262.13, Table 1. Their wastes are conditionally exempt from regulation under 40 C.F.R. § 262.14.

There can be no doubt that paint wastes are generated by an exceptionally large number of generators. The most widely recognized use of paint is for painting the interior or exterior of a home or building. Virtually all households that own their residences can be expected to paint the interior and/or exterior of their homes periodically and generate paint wastes in the process. According to U.S. Census data, the number of such households is approximately 85 million.¹¹ While these households generally will not paint every year, even if they do so only once every 10 years (which is almost certainly an underestimate on average), the number of household generators of paint wastes can be expected to be approximately 8.5 million per year.

Although these household generators would be excluded from federal regulation under the household waste exclusion, the numbers of business, government, and other institutional generators that are potentially regulated is similarly very large. For example, the number of rental apartment buildings in the U.S. has been estimated to be between 1.67 million and 2.78 million, and these buildings likely paint at least some units, interior common areas, and/or exterior structures each year.¹² In addition, the U.S. Energy Information Administration (“EIA”) estimates that the number of commercial buildings in the country is approximately 5.9 million, and these buildings also likely undergo some painting frequently.¹³ Adding these figures to the number of individual residences

¹¹ See U.S. Census, Table HH-1 (Households by Type) (Attachment I) (indicating that there were 131 million households in 2022) and Figure HH-5 (Householders Who Own Their Home) (Attachment J) (indicating that approximately 65% of households own their home), available online at <https://www.census.gov/data/tables/time-series/demo/families/households.html>.

¹² See National Multifamily Housing Council (“NMHC”), Characteristics of Apartment Stock, Distribution of Apartments by Size of Property (based on data from the U.S. Department of Housing and Urban Development and the U.S. Census Bureau, updated December 2022) (Attachment K) (indicating that there are 2.78 million properties with 2 or more rental units), available online at <https://www.nmhc.org/research-insight/quick-facts-figures/quick-facts-apartment-stock/characteristics-of-apartment-stock/>; see also <https://www.reonomy.com/properties/apartment-building/us/1#:~:text=Unlock%20property%20data%20on%20any%20of%20the%201%2C673%2C824,business%20in%20any%20market.%20Start%20your%20search%20below> (Attachment L) (estimating the number of apartment buildings at 1.67 million).

¹³ See EIA, 2018 Commercial Buildings Energy Consumption Survey: Building Characteristics Highlights (revised September 2022) (relevant excerpts in Attachment M) at 7 (estimating a total of 5.9 million commercial buildings as of 2018) and 6 (explaining that this figure covers “buildings larger than 1,000 square feet for which more than half the floorspace is used for activities that are neither residential, manufacturing, industrial, nor agricultural”), available online at https://www.eia.gov/consumption/commercial/data/2018/pdf/CBECS_2018_Building_Characteristics_Flipbook.pdf; see also EIA, About the Commercial Buildings Energy Consumption Survey (Attachment N), available online at <https://www.eia.gov/consumption/commercial/about.php> (explaining that commercial buildings, for this purpose, “includes building types that might not traditionally be considered commercial, such as schools, hospitals, correctional institutions, and buildings used for religious worship, in addition to traditional commercial buildings such as stores, restaurants, warehouses, and office buildings”).

According to U.S. Census data, there were approximately 41,000 painting and wall covering contractors in 2007. See U.S. Census, Statistical Abstract of the United States 2011 (relevant excerpts in Attachment O) at 604, available online at <https://www2.census.gov/library/publications/2011/compendia/statab/131ed/tables/construct.pdf>. However, owners and operators of residences and other buildings frequently paint their own buildings. Moreover, under the RCRA regulations, a generator is defined as “any person, *by site*” whose act or process produces hazardous waste or first causes hazardous waste to become subject to regulation. See 40 C.F.R. § 260.10 (emphasis

estimated to generate paint wastes each year, the total number of generators of architectural paint wastes can conservatively be estimated to be in the range of 10-15 million per year. This figure does not include generators of waste OEM paints or specialty paints, as discussed above.

Clearly, paint wastes are among the most ubiquitous of wastes generated in the U.S. Even though different generators are likely to generate very different quantities, there can be little doubt that paint wastes are frequently generated in relatively small quantities. In many cases, people use paints for small projects such as touch-ups, adding color accents, or painting a small piece of furniture. In these instances, the total quantity of paint used is small, and the amount discarded is correspondingly much smaller. Even for larger projects, users have an incentive not to purchase substantially more paint than they expect to use, so the amount of leftover paint is generally kept to a minimum.

EPA in 2007 estimated that the total quantity of post-consumer architectural paint disposed annually was between 35 and 103 million gallons.¹⁴ Assuming there are between 10 and 15 million generators of architectural paint wastes each year (as discussed above), that would translate to an average generation rate of between 2.3 and 10 gallons per year, or approximately 11.5 to 50 kg per year – far below the VSQG threshold of 100 kg *per month*. While some generators certainly generate much larger quantities, others also generate much smaller quantities. Indeed, EPA has estimated that the average amount of post-consumer architectural paint disposed by households is less than 1 gallon per year.¹⁵ Accordingly, paint wastes unquestionably are frequently – indeed, most commonly – generated in relatively small quantities.

- o **CRITERION #4: *Systems to be used for collecting the waste or category of waste (including packaging, marking, and labeling practices) would ensure close stewardship of the waste.* [40 C.F.R. § 273.81(d)]**

When EPA originally promulgated this factor, it stated that “the goal of this factor is to facilitate addition of wastes to the universal waste system that are most likely to be collected, and to be collected in a manner that ensures good management of the waste.” See 60 Fed. Reg. at 25,514. As discussed below, ACA/PaintCare believe that paint wastes are precisely the type of materials that the Agency had in mind. (Indeed, as discussed below in the context of Criterion #8, EPA at the time identified paint wastes as a prime candidate for potential classification as universal wastes.)

added). Thus, in order to estimate the number of paint waste generators, it is important to focus, as we have done here, on the number of sites where paint wastes may be generated, rather than on the number of persons who may be generating such wastes (recognizing that painting contractors can be expected to generate wastes at multiple building sites).

¹⁴ See EPA, “Quantifying the Disposal of Post-Consumer Architectural Paint” (April 2007) (“EPA Paint Disposal Study”) (relevant excerpts in Attachment P) at 31, *available online at* https://archive.epa.gov/sectors/web/pdf/paint_quantity_report.pdf.

¹⁵ See EPA Paint Disposal Study at 29 (relevant excerpts in Attachment P).

As an initial matter, paint wastes are a type of waste that is clearly amenable to separate collection and management, and that is already being separately collected and managed to a significant extent. Paint wastes are generally readily identifiable (*e.g.*, because of the size and distinctive shape of most paint cans) and therefore relatively easy to segregate for special management. Moreover, the volume of paint wastes generated in the country is large enough to make the wastes a good target for special management. It is in part for these reasons that programs for collection and management of paint wastes already exist, for example through government-operated household hazardous waste facilities and events and through PaintCare (in the 11 states (including the District of Columbia) that currently have PaintCare programs).

These existing systems are designed and operated in a way that ensures the wastes are managed in an environmentally protective manner. The household hazardous waste facilities/events are operated by government entities (*e.g.*, localities) and are generally subject to stringent state regulation and oversight. Similarly, PaintCare is available only in states that have enacted specific authorizing legislation, which requires the programs to be operated pursuant to a plan approved by the state, with periodic reports and review of the program performance. Moreover, as discussed in more detail below in the context of Criterion #5, all of these systems are subject to extensive regulatory controls – even outside the hazardous waste arena – regarding storage, transport, and worker protection (*e.g.*, local fire codes and federal rules for transport of hazardous materials including flammable paints).

Clearly, there are already frameworks in place for collecting paint wastes in an environmentally safe way, which makes paint wastes an ideal candidate for classification as universal wastes under this criterion. The universal waste rule would provide further assurance of safe management, through its requirements for storage, labeling, personnel training, release response, and (for large handlers of the wastes) notification and waste tracking. As discussed below in the context of Criterion #6, it would also significantly facilitate the operation – and expansion – of the current programs for collection and management of paint wastes.

- o ***CRITERION #5: The risk posed by the waste or category of waste during accumulation and transport is relatively low compared to other hazardous wastes, and specific management standards proposed or referenced by the petitioner (e.g., waste management requirements appropriate to be added to 40 CFR 273.13, 273.33, and 273.52; and/or applicable Department of Transportation requirements) would be protective of human health and the environment during accumulation and transport. [40 C.F.R. § 273.81(e)]***

Paint wastes present relatively low risks during accumulation and transport, due to several factors, including (a) their inherent nature and packaging, (b) the familiarity that generators and others have with the limited hazards of the products before they become wastes, and (c) existing regulatory regimes that already address the risks associated with both the products and wastes. In addition, the additional requirements of the universal

waste rule should adequately address any residual risk. Each of these items is discussed in more detail below.

As noted above in the context of Criterion #1, the primary hazard potentially exhibited by paint wastes is ignitability, and that characteristic applies only to a fraction of all paint wastes (*i.e.*, oil-based paints). Toxicity is generally not a concern for paint wastes, as it is for many hazardous wastes, including some current universal wastes (*e.g.*, pesticides and mercury-containing equipment). Moreover, paint wastes are most commonly generated and handled in their original product packaging, which are typically 5 gallons or less and well-sealed (to prevent drying out). During collection, the paint containers are frequently overpacked in boxes, bins, or drums to facilitate handling. This packing and overpacking minimizes the potential for releases, as well as the size of any releases that might occur. In addition, in the event of a release, the viscosity of most paints helps limit the mobility of the waste, and the pigments that are present in most paints help in tracking and remediating the release.

The hazards associated with paint wastes are not materially different from the hazards associated with paint products. Indeed, paint wastes may pose *less* of a risk than paint products, since containers of paint wastes typically contain only a fraction of the original contents of the containers, and containers of paint wastes are generally kept closed while use of the products necessarily entails opening containers and otherwise exposing the paints to the atmosphere (in paint trays and/or on the surfaces being painted). Generators of paint wastes – and the public at large – are accustomed to dealing with the hazards of paint products in a safe way, which underscores that the wastes pose relatively low risks. *Cf.* 84 Fed. Reg. at 67,207 (stating that aerosol cans satisfied this criterion, in part, because “entities that generate waste aerosol cans are accustomed to safely handling aerosol can products”).

The risks associated with accumulation and transport of paint wastes are also controlled through a variety of existing regulatory requirements outside RCRA. For example, flammable paints (including paint wastes) are classified under DOT’s Hazardous Materials Regulations as Class 3 hazardous materials (flammable liquids).¹⁶ As such, these paints (including wastes) are subject to extensive transport requirements with respect to packaging (49 C.F.R. Part 173), labeling/marketing (Part 172, Subparts D and E), shipping papers (Part 172, Subpart C), emergency response information (Part 172, Subpart G), personnel training (Part 172, Subpart H), and incident reporting (§§ 171.15 - 171.16).¹⁷ During accumulation, fire codes impose detailed requirements to minimize and control potential fire hazards (*e.g.*, package markings, storage quantity limits, design of storage areas, fire alarm systems, fire protection systems such as sprinklers, etc.).¹⁸ Certain requirements of the Occupational Safety and Health Administration (“OSHA”)

¹⁶ See 49 C.F.R. § 172.101, Hazardous Materials Table (UN1263).

¹⁷ See also 49 C.F.R. § 173.150 (limited exceptions from certain requirements in particular circumstances) and § 173.173 (specific provisions for certain non-bulk containers of paints).

¹⁸ See generally National Fire Protection Association (“NFPA”) 30, *Flammable and Combustible Liquids Code*.

may also apply.¹⁹ It is also worth noting that the Volatile Organic Compound (“VOC”) content of architectural coatings is limited by federal Clean Air Act regulations and similar state and local rules.²⁰ All of these controls help limit the potential hazards associated with paint wastes. *Cf.* 84 Fed. Reg. at 67,207 (stating that aerosol cans satisfied this criterion, in part, because “the ignitability risk posed during accumulation and transport is addressed by standards set by local fire codes, the Office of [sic] Safety and Health Administration, and the Department of Transportation”).

To the extent that any additional regulation might be warranted, the requirements of the universal waste rules should be effective in mitigating residual risks. They require that the wastes be stored in a protective manner, that containers be labeled and marked to indicate their contents, that employees be trained, that any releases be addressed appropriately, and that the wastes be sent to a properly authorized facility in a timely fashion. In addition, if a facility generates or accumulates large quantities of universal wastes (calculated cumulatively, considering all universal waste types), they must notify EPA and track all shipments of the waste into and out of the facility. These safeguards have proven highly effective for other universal wastes, and ACA/PaintCare believe they would likewise be effective for paint wastes (as demonstrated in the states that already classify paint wastes or their equivalent as universal wastes, as discussed below in the context of Criterion #8).

- o **CRITERION #6: *Regulation of the waste or category of waste under 40 CFR part 273 will increase the likelihood that the waste will be diverted from non-hazardous waste management systems (e.g., the municipal waste stream, non-hazardous industrial or commercial waste stream, municipal sewer or stormwater systems) to recycling, treatment, or disposal in compliance with Subtitle C of RCRA. [40 C.F.R. § 273.81(f)]***

Although there are existing programs for collecting and managing paint wastes (as discussed above in the context of Criterion #4), they have significant limits and, as a result, large volumes of paint wastes continue to end up in the municipal solid waste stream.²¹ Presumably, the vast majority of this volume consists of paint wastes that are

¹⁹ See 29 C.F.R. § 1910.106(d) (requirements for container storage of flammable liquids); *but see also* § 1910.106(d)(1)(ii)(c) (exempting “[f]lammable paints, oils, varnishes, and similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days”).

²⁰ See, e.g., 40 C.F.R. Part 59, Subpart D. Although these rules are designed to limit the smog-forming potential of the architectural coatings, they may have indirect effects on the ignitability and/or toxicity of the coatings.

²¹ Household hazardous waste programs generally are available only on limited days for limited hours, located in remote areas, and frequently do not serve painting contractors or other businesses. As a result, they likely handle only a fraction of all the paint wastes being generated each year. See, e.g., EPA, *Quantifying the Disposal of Post-Consumer Architectural Paint* (April 2007) (relevant excerpts in Attachment P) at 27 (estimating that, in 5 states studied, the amount of paint wastes collected annually through household hazardous waste programs was 3.26 million gallons out of a total quantity of 12.01 million gallons of paint waste, or about 27%). In contrast, PaintCare sites are generally much more convenient, often are open long hours seven days a week, and offer services to a broader range of end-users. However, PaintCare currently operates in only 11 states, and even in such states, participating sites undoubtedly do not handle all of the paint wastes that are being generated and are not being

not subject to hazardous waste regulation, either because they are non-hazardous (*e.g.*, latex paint) or because, even though they are hazardous, they come from an exempt source (*e.g.*, a household or VSQG). However, even these non-regulated paint wastes may pose a significant environmental concern when disposed in a municipal solid waste landfill or incinerator.

The universal waste rule offers great promise as a way to help divert paint wastes from the municipal solid waste stream to Subtitle C recycling, treatment, or disposal facilities. To understand why/how, it is useful to consider different subcategories of these wastes separately:

- Non-hazardous paint wastes: Under the current hazardous waste regulations, there is a strong disincentive for any generators of paint wastes to manage non-hazardous paint wastes – which, as noted above, represent a substantial majority of all paint wastes by volume – in the same way as hazardous wastes. Doing so would dramatically increase costs, create logistical challenges (*e.g.*, because the wastes generally could not be consolidated anywhere other than at a permitted hazardous waste facility), potentially affect the status of the generator (*e.g.*, converting a VSQG into a Large Quantity Generator), and perhaps undercut waste minimization efforts.²² Classifying paint wastes as universal wastes would alleviate all of these issues, making management of non-hazardous paint wastes within the hazardous waste system more viable or even attractive. It would substantially reduce the costs of Subtitle C management, overcome some of the key logistical issues (*e.g.*, by allowing consolidation at handler facilities, rather than permitted hazardous waste facilities), and – for non-household generators – eliminate the need to “count” paint wastes (hazardous or non-hazardous) toward generator status (and perhaps toward waste minimization goals). It would also effectively eliminate the need to determine which paint wastes are hazardous or non-hazardous, and to segregate and separately manage the two categories of paint wastes. As EPA has previously stated, “the streamlined requirements of [the universal waste] rule will encourage all handlers of [the wastes] (whether hazardous or not) to manage them under the requirements of part 273 [rather than handling the non-hazardous portion as municipal solid wastes].” *See* 64 Fed. Reg. at 36,472-73 (making this statement in the context of universal waste lamps).
- Household hazardous paint wastes: Under the federal rules, household wastes are excluded from regulation – not only in the hands of the generator, but also in the hands of everyone else involved in managing the wastes (*e.g.*, transporters,

managed through household hazardous waste programs. As a result, most of the paint wastes being generated nationwide are likely still being disposed as part of the municipal solid waste stream.

²² The waste minimization certification required on manifests for large quantity generators states that the generator has “a program in place to reduce the volume *and toxicity* of waste generated” *See* 40 C.F.R. § 262.27(a) (emphasis added). Handling non-hazardous paints as if they were hazardous could make it appear that the generator is generating a greater volume of hazardous wastes than it actually is, seemingly undercutting waste minimization efforts.

collection facilities, and ultimate recycling or disposal facilities).²³ However, several states “cut off” the household waste exclusion as soon as the wastes are collected, causing the collector and all downstream entities to be subject to full hazardous waste requirements.²⁴ These rules are a significant hurdle to persons seeking to develop paint collection programs in these states. However, as EPA has noted, “[t]he simplified regulations [of the universal waste rule] provide an incentive for individuals and organizations to collect the unregulated portions of the waste stream [*e.g.*, the household wastes] and manage them using the same systems developed for the regulated portion, thereby removing [the wastes] from the municipal waste stream and minimizing the amount of hazardous constituents going to municipal landfills and combustors.” *See* 64 Fed. Reg. at 36,472-73 (making this statement in the context of universal waste lamps).

- VSQG hazardous paint wastes: Under the federal rules, VSQG wastes are generally exempt from regulation as long as they are sent directly to one of the types of facilities specified in the exemption, such as permitted hazardous waste facilities or facilities “[p]ermitted, licensed, or registered by a state” to handle non-hazardous wastes. *See* 40 C.F.R. § 262.14(a)(5). However, a number of states expressly prohibit VSQG wastes from being sent to non-hazardous waste facilities.²⁵ Other states require that VSQG wastes be transported by a hazardous waste transporter and/or with a hazardous waste manifest (sometimes with an exception for self-transport of waste by the generator).²⁶ These requirements

²³ *See* 40 C.F.R. § 261.4(b)(1) (excluding “[h]ousehold waste, including household waste that has been collected, transported, stored, treated, disposed, recovered ... or reused”); 45 Fed. Reg. 33,084, 33,099 (May 19, 1980) (“household waste does not lose the exclusion simply because it has been collected. Since household waste is excluded in all phases of its management, residues remaining after treatment (*e.g.* incineration, thermal treatment) are not subject to regulation as hazardous waste”).

²⁴ *See, e.g.*, Rhode Island Rules and Regulations for Hazardous Waste Management, Rule 5.1(b)(1) (“owners and/or operators of facilities that accept household hazardous waste ... shall comply with the requirements for Large Quantity Generators ... and upon receipt the household hazardous waste shall be subject to full regulation as hazardous waste”); Minnesota Admin. R. 7045.0310(3) (“An operator who establishes or operates all or part of a household hazardous waste management program must comply with the standards applicable to large quantity generators [with limited exceptions]”); New Hampshire Rule Env-Hw 401.03(b)(2) (exempting “[h]ousehold hazardous wastes, until such time as they are collected”).

²⁵ *See, e.g.*, 7 Delaware Administrative Code 1302 § 261.5(g)(3) (listing essentially the same types of facilities that are eligible to receive VSQG wastes *except* non-hazardous waste facilities); West Virginia Code of State Rules § 33-20-5.3 (adopting the federal rule for VSQGs except the provisions allowing VSQG wastes to be sent to non-hazardous waste facilities).

²⁶ *See, e.g.*, 25 Pennsylvania Code § 263a.13(a) (“a person or municipality may not transport hazardous waste within this Commonwealth without first obtaining a license”) and § 262a.14(b) (“[a VSQG] is deemed to have a license for the transportation of those very small quantities of waste generated by the generator’s own operation”); 6 New York Compilation of Codes, Rules and Regulations § 371.1(f)(7)(iv) (“in ensuring delivery of [VSQG] waste to an [authorized] facility, generators must: (a) transport the waste themselves ... or (b) use a transporter [permitted] to transport the particular waste(s) offered for shipment to the designated facility”); New Hampshire Rule Env-Hw 508.02(e) (requiring VSQGs (referred to as Small Quantity Generators in New Hampshire under Env-Hw 503.01) to transport their wastes offsite in accordance with Env-Hw 510 (requiring use of a hazardous waste manifest) and Env-Hw 511 (requiring use of a registered hazardous waste transporter)); 06-096 Code of Maine Rules ch.851, §

create a significant obstacle to persons seeking to develop or use programs for collecting and managing paint wastes. However, as EPA has noted, “[t]he simplified regulations [of the universal waste rule] provide an incentive for individuals and organizations to collect the unregulated portions of the waste stream [e.g., VSQG wastes] and manage them using the same systems developed for the regulated portion.” See 64 Fed. Reg. at 36,472-73 (making this statement in the context of universal waste lamps).

- LQG and SQG hazardous paint wastes: Under the existing federal rules, hazardous paint wastes generated by LQGs and SQGs are fully regulated as hazardous wastes, and thus should not be part of the municipal solid waste stream. In practice, however, some of these wastes likely do end up in municipal landfills or municipal waste incinerators. This may especially be true for paint wastes generated by LQGs and SQGs that are in such generator categories due primarily to wastes from activities unrelated to painting (e.g., from manufacturing other products), and that generate paint wastes only infrequently and in very small quantities as a result of maintenance or remodeling activities that are not at the core of their operations. These generators may not be sensitized to the potential regulation of the paint wastes, particularly given that the paint wastes they generate may be indistinguishable from the paint wastes that employees generate at their households without triggering any hazardous waste regulations. As a result, it is almost inevitable that some hazardous paint wastes from LQGs and SQGs will end up as part of the municipal solid waste stream. However, just as a universal waste rule would facilitate the diversion of household and VSQG paint wastes from the municipal waste stream, it would also facilitate the diversion of the mismanaged LQG and SQG paint wastes from the municipal waste stream.

In sum, classifying paint wastes as universal wastes would go a long way toward diverting a wide range of paint wastes – including non-hazardous paint wastes, hazardous paint wastes from exempt sources, and hazardous paint wastes from regulated sources that have been managing the wastes improperly – from non-hazardous waste management systems to recycling or disposal in compliance with RCRA Subtitle C.

- o ***CRITERION #7: Regulation of the waste or category of waste under 40 CFR part 273 will improve implementation of and compliance with the hazardous waste regulatory program. [40 C.F.R. § 273.81(g)]***

Designating paint wastes as universal wastes would not only encourage environmentally preferred outcomes, as discussed above, but would also improve implementation of and compliance with the hazardous waste regulatory program. As discussed above in the context of Criterion #2, paint wastes are generated ubiquitously by virtually all households, businesses, government entities, and non-profits – including large numbers that normally do not generate or encounter hazardous wastes (except perhaps universal wastes such as lamps, batteries, and aerosol cans). Moreover, many of these generators of

7(A) (“A generator shall not offer hazardous waste in any quantity to a transporter who is not licensed by the State of Maine to transport hazardous waste nor shall he transport the waste himself without a transporter license”).

paint wastes produce these wastes in relatively small quantities and very infrequently (e.g., once every several years). It can reasonably be expected that many/most of these generators are unaware that some of their paint wastes may be classified as hazardous wastes, unfamiliar with the complex regulatory regime that generally applies to hazardous wastes, and lack the resources to determine and fulfill their regulatory obligations under the full hazardous waste regulations.

As EPA stated when it classified other wastes as universal, “the streamlined requirements of the universal waste program will give such ... generators a more accessible starting point for good environmental management. If regulatory requirements are simpler, the compliance rate will improve, more hazardous waste[s] will be handled properly, and more [of the wastes] will be sent for recycling (or to other Subtitle C facilities) instead of going to solid waste landfills or to municipal waste combustors.” *See* 64 Fed. Reg. at 36,473 (discussing hazardous waste lamps); *see also* 84 Fed. Reg. at 67,207-208 (“handlers of hazardous waste aerosol cans who are infrequent generators of hazardous waste and who might otherwise be unfamiliar with the more complex Subtitle C management structure, ... will be able to more easily send this waste for proper management [under a universal waste rule]. Therefore, adding aerosol cans to the list of universal wastes would offer a protective hazardous waste management system that is likely to be more accessible”). Similarly, here, adding paint wastes to the universal waste rule “will improve compliance with the hazardous waste regulations by making it more achievable.” *See* 70 Fed. Reg. 45,508, 45,511 (August 5, 2005).

o **CRITERION #8: *Such other factors as may be appropriate.* [40 C.F.R. § 273.81(h)]**

An additional factor that EPA has previously taken into account in deciding whether to designate specific wastes as universal wastes is the extent to which states have already had success in regulating the same wastes under their own universal waste programs. *See, e.g.,* 84 Fed. Reg. 67,202, 67,208 (December 9, 2019) (“five states have added aerosol cans to their universal waste programs, and those states’ experiences with management of aerosol cans under their respective universal waste programs provides a useful source of information to inform EPA’s judgment on whether to add aerosol cans to the national universal waste program”).

In the present case, seven (7) states have added paint wastes (or their equivalent) to their universal waste programs, as far back as 1999 and as recently as 2023.²⁷ As far as we are aware, all of these state rules have been operating well and achieving their objective of facilitating the safe management of hazardous paint wastes. This information weighs

²⁷ *See* 30 Texas Administrative Code § 335.262 (rule for paint and paint-related waste, first adopted in 1999, as amended); 25 Pennsylvania Code § 266b.4 (rule for oil-based finishes, adopted in 2009); New Jersey Administrative Code 7:26A-7.2(a)(1) (rule for oil-based finishes); 06-096 Code of Maine Rules ch.858, § 4 (rule defining universal wastes to include architectural paint); 10 Vermont Statutes Annotated § 6680 (statutes designating postconsumer paint as universal waste, enacted 2013); Ohio Administrative Code Rule 3745-273-89(C) (rule for paint and paint-related waste, adopted in 2017); New York State Register (May 24, 2023) at 11 (effective July 8, 2023) (rule for paint wastes).

strongly in favor of a conclusion that management of paint wastes under the federal universal waste program would likewise be successful.

It is also worth noting in this regard that aerosol paint wastes have been regulated for many years under state universal waste rules for aerosols. *See, e.g.*, 84 Fed. Reg. at 67,206 (“Five states—California, Colorado, New Mexico, Ohio, and Utah—already have universal waste aerosol can programs in place, and Minnesota plans to propose to add aerosol cans to their universal waste regulations in 2019”); *id.* at 67,204 (“Aerosol cans are widely used for dispensing a broad range of products including paints”). These programs have been so successful that they formed part of the basis for EPA’s decision to add aerosol can wastes to the federal universal waste program. *Id.* at 67,208. The new federal rule, which took effect on February 7, 2020, and has already been adopted by approximately half of the states, clearly covers aerosol paint wastes.²⁸ Given the fact that paints packaged in aerosol cans have been and are being successfully regulated as universal wastes, the same should be true for paints packaged in cans or other containers.

Finally, it is significant that EPA has recognized since the very beginning of the universal waste program that paint wastes may be a prime candidate for classification as universal wastes. *See* 58 Fed. Reg. 8102, 8109 (February 11, 1993) (“Additional wastes for which regulation under part 273 may be appropriate are paint residues”). In 1996, shortly after the initial universal waste rule was finalized, the Utility Solid Waste Activities Group (“USWAG”) submitted a petition to EPA to add paint and paint-related wastes to the universal waste program. In 1997, the Agency stated that it was unable to respond to the petition due to resource constraints.²⁹ Since then, neither EPA nor the regulated community have pursued the classification of paints as universal wastes at the federal level.³⁰ However, the Agency’s original assessment that such classification may be appropriate is as valid today as it was at the inception of the universal waste program – and perhaps even more valid and warranted.

²⁸ *See* EPA, State Authorization Tracking System (“StATS”) Authorization Status by Rule (March 31, 2023) at 342 (Checklist #242) (Attachment Q) (indicating that 25 states have adopted universal waste rules for aerosol cans).

²⁹ *See* Letter from Elizabeth Cotsworth, Acting Director, Office of Solid Waste, EPA, to Paul R. Pike, Chairman, USWAG Low Volume Waste Committee (May 29, 1997) (RCRA Online #14087) (Attachment R) (“resource constraints continue to limit our ability to address your petitions at this time”).

³⁰ The last official record of the USWAG petition on paint wastes that we have been able to find was in a briefing package given to the Director of the EPA’s Office of Resource Conservation and Recovery in 2009, which identified 48 outstanding RCRA rulemaking petitions that had been submitted since the 1980s, including 3 submitted by USWAG in 1996. *See* EPA, Informational Briefing for Office Director: Outstanding Rulemaking Petitions in ORCR (June 29, 2009) (Attachment S). Two of these petitions (for mercury-containing equipment and utility access residuals) were listed as having been addressed or partially addressed. The remaining USWAG petition (clearly a reference to the petition for adding paints and paint-related wastes to the universal waste rule) was described as follows: “Nature of petition unknown. No record of any action taken.”

V. KEY ELEMENTS OF PROPOSED UNIVERSAL WASTE RULE FOR PAINT WASTES

In light of the discussion above, the designation of paint wastes as universal wastes is clearly warranted. In this section, we address key issues associated with this designation, such as the scope of the materials that would be covered and how they would need to be managed under the universal waste rule. In Section V.A, we propose a definition for paint wastes to be covered under the universal waste program, and in Section V.B, we propose provisions to clarify when paints becomes wastes for the purposes of the universal waste program. Section V.C proposes specific standards for management of universal waste paints, including both storage and other activities (*e.g.*, sorting, placing intact containers into larger containers, and consolidating paint wastes). Section V.D addresses the relationship of this proposed universal waste rule for paints to other existing universal waste rules (*i.e.*, for aerosol paints and paints that qualify as pesticides). In Section V.E, we discuss issues related to state adoption of the proposed rule. Finally, Section V.F proposes editorial and conforming changes to ensure consistency.

A. Proposed Definition of Paint Wastes

ACA/PaintCare propose that the term “paint” be defined for purposes of the Universal Waste Rule as follows:

“Paint” means a pigmented or unpigmented powder coating, or a pigmented or unpigmented mixture of binder and suitable liquid, that forms an adherent coating when applied to a surface. Powder coating is a surface coating that is applied as a dry powder and is fused into a continuous coating film through the use of heat.

This proposed definition is based primarily on the definitions adopted by two states that have already acted to classify paints as universal waste (*i.e.*, Ohio and Texas), and is consistent with the definition of paint used by EPA in other contexts, as well as by other federal regulatory agencies, such as the Department of Transportation, the Drug Enforcement Administration, and the Consumer Product Safety Commission. *See* Attachment T.³¹

Although the definitions of paint used by some of the other states (*e.g.*, Maine, New York, and Vermont) that have added such wastes to their universal waste rules are narrower (*e.g.*, limited to architectural paints, post-consumer paints, or paint containers of less than 5 gallons), those definitions were generally based on the fact that the universal waste rules for paints in such states were focused on facilitating specific product stewardship programs that were limited in scope. Because the current petition is intended to facilitate collection and proper recycling/disposal of paint wastes more generally, those narrow state definitions do not provide an appropriate model for a definition under the proposed federal universal waste rule.

³¹ It is also worth noting that when EPA in 2001 proposed to list certain wastes from paint manufacturing facilities as hazardous wastes under RCRA, it proposed to define such a facility as “a facility that produces paints (including undercoats, primers, finishes, sealers, enamels, refinish paints, and tinting bases), stains, varnishes (including lacquers), product finishes for original equipment manufacturing and industrial application, and, coatings (including special purpose coatings and powder coatings).” *See* 66 Fed. Reg. 10,060, 10,133 (February 13, 2001) (proposed § 261.32(b)).

B. Clarification of When Paints Become Wastes

Since the proposed universal waste rule would apply only to paints that are wastes, it is crucial to define when paints become wastes and when they are not wastes. ACA/PaintCare propose that the following paragraphs be included in the universal waste applicability provision in proposed § 273.7 to clarify these issues:³²

- (c) *When a paint becomes a waste.* A paint becomes a waste on the date that any of the following occurs:
- (1) The generator or other handler decides to abandon it (as described in § 261.2(b) of this chapter);
 - (2) The generator or other handler decides to recycle it by using it in a manner constituting disposal or by burning it for energy recovery (as described in §§ 261.2(c)(1)-(2) of this chapter); or
 - (3) In the case of oil-based paint as described in § 273.9, the generator or other handler decides to manage the paint through a paint collection program, unless the operator of the program has documented that there is a reasonable expectation that the paint will be legitimately used/reused (other than through use in a manner constituting disposal or by burning for energy recovery) or reclaimed.
- (d) *Paints that are not wastes.* The following paints are not wastes and thus are not subject to hazardous waste requirements, including this part 273:
- (1) Paints that a generator or other handler has decided to use or reuse (other than by using it in a manner constituting disposal or by burning it for energy recovery);
 - (2) Paints that a generator or other handler has decided to reclaim; and
 - (3) Water-based paints (as described in § 273.9) that a generator or other handler has decided to manage through a paint collection program, unless and until the person operating the program decides to discard the paint (by abandoning it, using it in a manner constituting disposal, or burning it for energy recovery), in which case such person becomes the generator of the paint waste.

In other universal waste rules, EPA has always included a provision explaining when the items covered become wastes. *See* 40 C.F.R. §§ 273.2(c) (batteries), 273.3(c)-(d) (pesticides), 273.4(c) (mercury-containing equipment), 273.5(c) (lamps), and 273.6(c) (aerosol cans). ACA/PaintCare encourage the Agency to do the same here, and the issue warrants special attention for paints.

The status of unused/leftover paints as wastes or non-wastes obviously depends on how the materials will be handled. If the paints are landfilled or incinerated, they will clearly be wastes. *See* 40 C.F.R. § 261.2(b). Similarly, if the paints are burned for energy recovery, as often happens with oil-based paints, they will be classified as solid wastes (and potentially hazardous

³² Other paragraphs of the proposed applicability provision would specify, as in other universal waste rules, that the rules do not apply to non-hazardous materials or residues remaining in empty containers as defined in 40 C.F.R. § 261.7. *Cf.* 40 C.F.R. §§ 273.6(b)(2)-(3) (stating that the universal waste rule for aerosol cans do not apply to non-hazardous aerosol cans or cans that are empty).

wastes). *See* 40 C.F.R. § 261.2(c)(2). In addition, if the paints are incorporated into products that are applied to the land (*e.g.*, landfill daily cover), they would be classified as solid (and potentially hazardous) wastes. *See* 40 C.F.R. § 261.2(c)(2).

On the other hand, if the unused/leftover paints are sold, donated, or otherwise used for their original intended purpose (*e.g.*, through a paint exchange program), they will clearly not be wastes. Likewise, if the paints are used as ingredients to make new paints (commonly referred to as “paint-to-paint recycling”), they are not solid wastes. *See* 40 C.F.R. § 261.2(e)(1). And if the paints are reclaimed to recover a particular component(s), they will also not be wastes. *See* 40 C.F.R. § 261.2(c)(3) (commercial chemical products destined for reclamation are not solid wastes).

Of particular concern to ACA/PaintCare is the status of paints that are managed through a paint collection program. EPA addressed this issue in detail in 2001, as part of its proposal to list certain paint manufacturing wastes as hazardous wastes (which the Agency ultimately decided not to finalize). *See* 66 Fed. Reg. 10,060, 10,067-68 (February 13, 2001). In particular, EPA stated as follows:

EPA wants to clarify the [rules for] “take-back” programs in which retailers or customers return unused paint because it does not meet the customer’s specifications or because it is unusable for some other reason. EPA believes ... that a retailer or customer returning unused paint to a paint manufacturer can presume that the paint will be legitimately used as an ingredient and that, therefore, the paint being returned is not a hazardous waste even if it exhibits a hazardous waste characteristic. EPA understands that paint manufacturers will typically take such returned paint and use it as a legitimate ingredient in the manufacture of another paint product. The retailer or user will be entitled to rely on this interpretation exempting returned paint even if the manufacturer ultimately decides to discard the unused paint rather than reuse it. ... However, should the paint production facility determine it cannot or will not use the returned paint as an ingredient, ... the paint would then become an off-specification paint product waste that would need to be evaluated against the ... hazardous waste characteristics.

This language suggests that paints handled through a collection program are not wastes, unless and until a decision is made to discard the materials (*e.g.*, through landfilling, incineration, or burning for energy recovery).

Although EPA’s views on this type of issue have shifted some over time, the Agency’s current policies clearly indicate that the key factor in determining whether unused products being handled through a collection program are wastes or non-wastes is whether there is a “reasonable expectation [that they will be] legitimately be used/reused ... or reclaimed.”³³ Applying that

³³ EPA’s 2001 statement regarding paints drew an analogy to the Agency’s guidance on unused pharmaceuticals returned to manufacturers, but that guidance has recently changed. *See* 66 Fed. Reg. at 10,068 (explaining the reason for the Agency’s statement about paints being handled through a collection program by stating, in part, that “EPA has previously taken the position that retailers or users of pharmaceutical products returning unused products to manufacturers are not managing wastes”); 84 Fed. Reg. 5816, 5827-5835 (February 22, 2019) (discussing the shift in EPA’s views with respect to pharmaceuticals).

principle in the case of paints, it appears that different analyses – and conclusions – may apply to water-based paints (e.g., latex) versus oil-based paints, as discussed below:³⁴

- o For water-based paints, there is clearly a reasonable expectation that the paints will be used/reused or reclaimed. Indeed, state PaintCare programs report that approximately 75-85% of latex paints collected are either used as an ingredient to make new paints or reused directly “as is.”³⁵ Accordingly, latex paints handled through collection programs should presumptively be classified as non-wastes (although if/when a particular collection program decides to discard some or all such paints through landfilling, incineration, or burning for energy recovery, the paints would obviously become wastes at that point).
- o For oil-based paints, the vast majority of collected paints are currently being incinerated or burned for energy recovery. While some use/reuse or reclamation options do exist, they are very limited at the present time.³⁶ For this reason, ACA/PaintCare believes it

Under EPA’s new rules and policies for pharmaceuticals, *prescription* pharmaceuticals handled through a reverse distribution system are classified as wastes because “these pharmaceuticals will seldom, if ever, be legitimately used/reused (e.g., lawfully redistributed for their intended purpose) or reclaimed after they are sent to a reverse distributor.” See 84 Fed. Reg. at 5831. However, *non-prescription* pharmaceuticals (e.g., over-the-counter drugs, dietary supplements, and homeopathic drugs) handled through reverse logistics are *not* solid wastes “if they have a *reasonable expectation* of being legitimately used/reused (e.g., lawfully redistributed for its intended purpose) or reclaimed.” *Id.* at 5832 (emphasis added); see also 40 C.F.R. § 266.501(g)(2) (exempting “[o]ver-the-counter pharmaceuticals, dietary supplements, or homeopathic drugs that are not solid wastes . . . because they have a *reasonable expectation* of being legitimately used/reused (e.g., lawfully redistributed for their intended purpose) or reclaimed” (emphasis added)). Indeed, EPA has extended the approach for non-prescription pharmaceuticals to “unsold retail items” more generally, a term that is intended to include “returned items [from customers] that cannot be returned to stock/inventory.” See 84 Fed. Reg. at 5833 (explaining the extension to unsold retail items) and 5830 n. 65 (defining “unsold retail items” for this purpose).

³⁴ For these purposes, we are proposing that water-based paints be defined in § 273.9 as a “paint in which water is the primary solvent,” while oil-based paint be defined as “paint in which an organic solvent such as linseed oil, turpentine, or a synthetic alkyd resin is the primary solvent.” See, e.g., Federation of Societies for Coatings Technology, “Coatings Encyclopedic Dictionary” (1995) at 299 (Attachment U) (defining waste-based coatings as “[c]oatings in which the volatile content is predominantly water”); ASTM International Standard D16-19 (Standard Terminology for Paint, Related Coatings, Materials, and Applications) (Attachment V) (defining waterborne coating as “a coating in which the principal volatile constituent is water,” and defining oil paint as “a paint that contains drying oil or oil varnish as the basic vehicle [liquid] ingredient”).

³⁵ See, e.g., PaintCare, Vermont Paint Stewardship Program 2022 Annual Report at 16 (Attachment W) (indicating that approximately 80% of water-based paint collected in the state was managed through paint-to-paint recycling or direct reuse); PaintCare, Washington Paint Stewardship Program 2022 Annual Report at 17 (Attachment X) (indicating that 86% of water-based paint collected in the state was managed in such ways); PaintCare, California Paint Stewardship Program FY2022 Annual Report at 26 (Attachment Y) (indicating that 76% of water-based paint collected in the state was managed in such ways).

³⁶ See, e.g., PaintCare, Vermont Paint Stewardship Program 2022 Annual Report at 16 (Attachment W) (indicating that approximately 11% of oil-based paint collected in the state was managed through paint-to-paint recycling or direct reuse); PaintCare, Washington Paint Stewardship Program 2022 Annual Report at 17 (Attachment X) (indicating that only 2% of oil-based paint collected in the state was managed in such ways); PaintCare, California Paint Stewardship Program FY2022 Annual Report at 26 (Attachment Y) (indicating that only 5% of oil-based paint collected in the state was managed in such ways).

may be appropriate to presume – for now – that oil-based paints handled through a collection program are solid wastes. However, in order to encourage the development and use of use/reuse or reclamation options, we believe it is important to make clear that if a particular collection program decides to use a legitimate use/reuse or reclamation technology and/or if such a technology is used for a substantial percentage of the oil-based paint being handled in the program, the paints in that program will no longer be classified as wastes.

This type of approach has some precedent not only in the context of pharmaceuticals (*see* footnote 33 above), but also in the context of the universal waste rule for recalled pesticides. That rule also explains when recalled pesticides are or are not wastes, as follows:

- (c) *When a pesticide becomes a waste.* (1) A recalled pesticide ... becomes a waste on the first date on which both of the following conditions apply:
 - (i) The generator of the recalled pesticide agrees to participate in the recall; and
 - (ii) The person conducting the recall decides to discard (*e.g.*, burn the pesticide for energy recovery)....
- (d) *Pesticides that are not wastes.* The following pesticides are not wastes: (1) Recalled pesticides ..., provided that the person conducting the recall:
 - (i) Has not made a decision to discard (*e.g.*, burn for energy recovery) the pesticide. Until such a decision is made, the pesticide does not meet the definition of “solid waste” under 40 CFR 261.2; thus, the pesticide is not a hazardous waste and is not subject to hazardous waste requirements, including this part 273. ...; or
 - (ii) Has made a decision to use a management option that, under 40 CFR 261.2, does not cause the pesticide to be a solid waste (*i.e.*, the selected option is use (other than use constituting disposal) or reuse (other than burning for energy recovery), or reclamation). Such a pesticide is not a solid waste and therefore is not a hazardous waste and is not subject to the hazardous waste requirements including this part 273.

See 40 C.F.R. § 273.3(c)-(d). ACA/PaintCare believe that similar language, tailored to the specific situation of paint collection programs as discussed above, should be included in the universal waste rule for paints.

C. Proposed Standards for Paint Waste Management under the Universal Waste Rule

When EPA previously added categories of wastes to the universal waste rule, it has generally applied the same standards to the newly designated universal wastes as for the

previously designated universal wastes. The main exception has been some modifications in the “waste management” standards for small and large handlers in 40 C.F.R. §§ 273.13 and 273.33, which were needed to tailor such standards to the specific wastes at issue. *See* 64 Fed. Reg. 36,466 (July 6, 1999) (addition of lamps to the universal waste rule); 70 Fed. Reg. 45,508 (August 5, 2005) (addition of mercury-containing equipment); 84 Fed. Reg. 67,202 (December 9, 2019) (addition of aerosol cans). ACA/PaintCare encourage the same approach for paint wastes added to the universal waste rule. We therefore focus here on the waste management standards for handlers, starting with the requirements for storage and then turning to the requirements for other activities.³⁷

1. Standards for Storage

The standards for storage of universal wastes by handlers are fairly uniform, but minor variations do exist. For universal waste paints, ACA/PaintCare believe the best model may be the storage requirements for universal waste pesticides, because both products commonly exist in bulk liquid form (unlike other universal wastes that are in the form of manufactured articles, such as batteries, mercury-containing equipment, lamps, and aerosol cans). We propose the following corresponding language for paint wastes, which is also presented in Attachment A (proposed § 273.13(f) for small quantity handlers and § 273.33(f) for large quantity handlers).

§ 273.13(f) *Paints*. A small quantity handler of universal waste must manage universal waste paints in a way designed to prevent releases of any universal waste or component of a universal waste to the environment, as follows:

- (1) The universal waste paints must be contained in one or more of the following:
 - (i) A container that remains closed (except when wastes are being added to or removed from the container), structurally sound, compatible with the paint, lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and is protected from sources of heat; or
 - (ii) A container that does not meet the requirements of paragraph (f)(1)(i) of this section, provided that the unacceptable container is overpacked (with or without absorbents) in a container that does meet the requirements of paragraph (f)(1)(i) of this section; or
 - (iii) A tank that meets the requirements of 40 CFR part 265 subpart J, except for 40 CFR 265.197(c), 265.200, and 265.201; or
 - (iv) A transport vehicle or vessel that is closed, structurally sound, compatible with the paint, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- (2) A small quantity handler of universal waste must manage universal waste paints that are ignitable in accordance with 40 CFR 262.17(a)(1)(vi)(B).

³⁷ One other issue worth brief mention is the labeling requirement for paint wastes. Consistent with the approach for other universal wastes, we propose that each container (or overpack of one or more containers), tank, transport vehicle, or vessel containing universal waste paint be labeled or marked with the words “Universal Waste – Paint” or “Waste Paint.” *Cf.* 40 C.F.R. §§ 273.14 and 273.34.

§ 273.33(f) *Paints*. A large quantity handler of universal waste must manage universal waste paints in a way designed to prevent releases of any universal waste or component of a universal waste to the environment, as follows:

- (1) The universal waste paints must be contained in one or more of the following:
 - (i) A container that remains closed (except when wastes are being added to or removed from the container), structurally sound, compatible with the paint, lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and is protected from sources of heat; or
 - (ii) A container that does not meet the requirements of paragraph (f)(1)(i) of this section, provided that the unacceptable container is overpacked (with or without absorbents) in a container that does meet the requirements of paragraph (f)(1)(i) of this section; or
 - (iii) A tank that meets the requirements of 40 CFR part 265 subpart J, except for 40 CFR 265.197(c), 265.200, and 265.201; or
 - (iv) A transport vehicle or vessel that is closed, structurally sound, compatible with the paint, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- (2) A large quantity handler of universal waste must manage universal waste paints that are ignitable in accordance with 40 CFR 262.17(a)(1)(vi).

Subsection (1) of proposed sections 273.13(f) and 273.33(f) track closely the existing storage requirements for handlers of universal waste pesticides, which are reproduced below for convenience (*see* 40 C.F.R. § 273.13(b) (for small handlers) and § 273.33(b) (for large handlers)):

Universal waste pesticides. A ... handler of universal waste must manage universal waste pesticides in a way that prevents releases of any universal waste or component of a universal waste to the environment. The universal waste pesticides must be contained in one or more of the following:

- (1) A container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions; or
- (2) A container that does not meet the requirements of paragraph ... (1) of this Section, provided that the unacceptable container is overpacked in a container that does meet the requirements of paragraph ... (1) of this Section; or
- (3) A tank that meets the requirements of 40 CFR part 265 subpart J, except for 40 CFR 265.197(c), 265.200, and 265.201; or
- (4) A transport vehicle or vessel that is closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

This approach is also consistent with the one adopted by some of the states that already classify paints as universal wastes. *See, e.g.*, 30 Texas Administrative Code (“TAC”) § 335.262(c)(2); Ohio Administrative Code (“OAC”) §§ 3745-273-13(G)(1)-(4) and 3745-273-33(G)(1)-(4).

Subsection (2) of proposed sections 273.13(f) and 273.33(f) is based on additional requirements imposed by some of the states that currently classify hazardous paint wastes as universal wastes to reflect the fact that oil-based paints commonly exhibit the characteristic of ignitability. One such requirement is that the handlers comply with 40 C.F.R. § 265.17 (or its state equivalent), which mandates general precautions to prevent fires, such as segregation from potential sources of ignition and “No Smoking” signs. *See, e.g.*, 30 TAC 335.262(c)(3) (Texas); OAC 3745-273-13(G)(10)(b) and 3745-273-33(G)(10)(b) (Ohio). Another such requirement is that large quantity handlers of universal wastes must keep containers of ignitable paint wastes at least 50 feet from the facility’s property boundary unless written approval is obtained from the authority having jurisdiction over the local fire code to allow such containers to be stored closer to the property boundary. *See, e.g.*, 30 TAC § 335.262(c)(3) (Texas); OAC §§ 3745-273-13(G)(10)(a) and 3745-273-33(G)(10)(a) (Ohio); 6 New York Code, Rules and Regulations (“NYCRR”) § 374-3.3(d)(6)(v) (for large quantity handlers only).³⁸

ACA/PaintCare consider these ignitability-related requirements as reasonable and therefore have incorporated them into the current proposal. Because these requirements are consolidated in one paragraph of the existing rules for large quantity generators of hazardous wastes (*see* 40 C.F.R. § 262.17(a)(1)(vi)), for simplicity our proposed language references that paragraph (although small and large handlers may not qualify as LQGs). For small handlers, only the general precautions in § 262.17(a)(1)(vi)(B) are incorporated. For large handlers, all of the requirements in § 262.17(a)(1)(vi) are incorporated, including the general precautions of subparagraph (B) and the 50-foot “buffer zone” requirement of subparagraph (A).

2. Activities Other Than Storage

Under the universal waste rule, treatment of universal wastes by handlers is generally prohibited unless specifically authorized under the rule (or unless done in response to a release). *See* 40 C.F.R. §§ 273.11(b) and 273.31(b). EPA has authorized specific activities for most categories of universal wastes, and should do the same here for universal paint wastes. We discuss below a number of activities that should be allowed for handlers of such wastes.

o *Sorting*

ACA/PaintCare propose that both small quantity handlers and large quantity handlers be authorized to conduct sorting of paints by type. This proposal is reflected in the proposed rule text in Attachment A (proposed § 273.13(f)(3)(i) for small quantity handlers and § 273.33(f)(3)(i) for large quantity handlers).

§ 273.13(f)(3)

A small quantity handler of universal waste may conduct the following activities:

- (i) Sorting paints by type;

³⁸ While some state rules do not limit this requirement to large quantity handlers, the most recently issued state rule (New York) does limit the requirement in this way. This approach recognizes the lower risks and greater burdens imposed by the requirement at smaller facilities. It also mirrors the approach in the federal rules, which require the 50-foot buffer zone for ignitable wastes at Large Quantity Generator facilities, but not at Small Quantity Generator facilities. *Compare* 40 C.F.R. § 262.17(a)(1)(vi)(A) (for LQGs) *with* § 262.16 (for SQGs).

...

§ 273.33(f)(3)

A large quantity handler of universal waste may conduct the following activities:

- (i) Sorting paints by type;

...

The existing universal waste rule specifically authorizes handlers of universal waste batteries and aerosol cans to sort such wastes by type. *See* 40 C.F.R. §§ 273.13(a)(2)(i) and (e)(3)(i); §§ 273.33(a)(2)(i) and (e)(3)(i). The same should be true for handlers of universal waste paints. Such sorting poses no special risks beyond whatever risks may be associated with storage or other handling. Moreover, sorting can significantly facilitate beneficial reuse or recycling of paint wastes by segregating and aggregating subcategories of paints so that they can efficiently and effectively be routed to the optimal method for managing each subcategory (*e.g.*, suitable water-based paints can be directed to paint-to-paint recycling programs, while oil-based paints can be directed to waste-to-energy programs). Sorting appears to be implicitly allowed under all the current state universal waste rules for paint wastes, and New York has included an explicit authorization in its recent universal waste rule for paints. *See* 6 NYCRR §§ 374-3.2(d)(6)(iv)(‘a’) and 374-3.3(d)(6)(iv)(‘a’). Of course, consistent with the discussion above regarding storage, the sorted paints would have to be in containers or other units meeting the storage requirements for universal waste paints.

- o ***Placing Intact Containers Into Larger Containers***

ACA/PaintCare propose that both small quantity handlers and large quantity handlers be authorized to place one or more containers of paint into a larger container. This proposal is reflected in the proposed rule text in Attachment A (proposed § 273.13(f)(3)(ii) for small quantity handlers and § 273.33(f)(3)(ii) for large quantity handlers).

§ 273.13(f)(3)

A small quantity handler of universal waste may conduct the following activities:

...

- (ii) Placing one or more containers of paint into a larger container, which must meet the requirements of paragraph (f)(1)(i) of this section unless all of the smaller containers inside meet such requirements;

...

§ 273.33 (f)(3)

A large quantity handler of universal waste may conduct the following activities:

...

- (ii) Placing one or more containers of paint into a larger container, which must meet the requirements of paragraph (f)(1)(i) of this section unless all of the smaller containers inside meet such requirements;

...

The existing universal waste rule specifically authorizes handlers of universal waste aerosol cans to “mix[] intact cans in one container.” See 40 C.F.R. §§ 273.13(e)(3)(ii) and 273.33(e)(3)(ii). Similarly, handlers of universal paint wastes should be allowed to place multiple intact paint containers into larger containers. Such overpacking should not pose any significant risks, since the containers being combined in the overpack would be intact and meet the containment requirements discussed above, thereby providing the necessary protection against releases. Indeed, this type of overpacking appears to be implicitly allowed under all universal waste rules (e.g., the federal rule for universal pesticide wastes). New York has also included an explicit authorization for this activity in its recent universal waste rule for paints. See 6 NYCRR §§ 374-3.2(d)(6)(iv)(‘b’) and 374-3.3(d)(6)(iv)(‘b’). This type of overpacking, just like sorting (discussed above) can significantly facilitate beneficial reuse or recycling of paint wastes.

As discussed above, in the context of the proposed rules for storage of universal waste paints, overpacking of containers that do not meet applicable requirements would also be authorized, as long as the overpack meets the container requirements. In order to cover both situations (i.e., where the containers being overpacked do or do not meet the applicable requirements), we are proposing that handlers would be authorized to place one or more containers of paint into a larger container, which must meet the relevant container requirements unless all of the smaller containers inside meet such requirements.³⁹ Importantly, this proposed provision would be consistent with long-standing DOT rules and related special permits issued by DOT, which authorize similar overpacking of containers of paint wastes for purposes of transportation. See 49 C.F.R. § 172.102(c)(3), Special Provision B131 (rule for flammable paint wastes); DOT-SP 11624 (special permit for corrosive paint wastes) (Attachment Z).

o ***Consolidating Paint Wastes***

ACA/PaintCare propose that both small quantity handlers and large quantity handlers be authorized to consolidate paint wastes. This proposal is reflected in the proposed rule text in Attachment A (proposed § 273.13(f)(3)(iii) for small quantity handlers and § 273.33(f)(3)(iii) for large quantity handlers).

§ 273.13(f)(3)

A small quantity handler of universal waste may conduct the following activities:

- ...
- (iii) Consolidating paints by scraping, pouring, pumping, draining, or otherwise removing (including rinsing with a suitable solvent) the universal waste paint from a container, tank, transport vehicle, or vessel and transferring the material to another container, tank, transport vehicle, or vessel, which must meet the requirements of paragraph (f)(1) of this section, provided that the transfer occurs in an area that is well ventilated and equipped with secondary containment;
- ...

³⁹ We are not aware of any instances in which paints would be incompatible each other, and thus are not proposing any language to specifically ensure compatibility.

§ 273.33(f)(3)

A large quantity handler of universal waste may conduct the following activities:

...

- (iii) Consolidating paints by scraping, pouring, pumping, draining, or otherwise removing (including rinsing with a suitable solvent) the universal waste paint from a container, tank, transport vehicle, or vessel and transferring the material to another container, tank, transport vehicle, or vessel, which must meet the requirements of paragraph (f)(1) of this section, provided that the transfer occurs in an area that is well ventilated and equipped with secondary containment;

...

Some of the state universal waste rules for paint wastes (*e.g.*, in New York, New Jersey, and Ohio) explicitly allow handlers to consolidate paint wastes from multiple containers or other units into the same container/unit. Other state rules may implicitly allow such consolidation, especially given that the emptying of containers and consolidation of container contents is generally not considered a form of treatment. *See, e.g.*, 45 Fed. Reg. 78,524, 78,528 (November 25, 1980) (emptying a container is not treatment if “[t]he ... intent is simply to remove the waste,” rather than to “destroy or detoxify” the waste); Letter from Sylvia K. Lowrance, Director, Office of Solid Waste, EPA, to Christopher J. Jaekels, GSX Government Services, Inc. (March 1, 1990) (RCRA Online #11497) (Attachment AA) (“bulking of characteristic hazardous waste shipments to achieve efficient transportation may result in incidental reduction of the hazards associated with that waste mixture. However, this incidental reduction may not meet the definition of treatment ... because it is not designed to render the waste nonhazardous or less hazardous”).

In order to eliminate any ambiguity, ACA/PaintCare propose that consolidation be explicitly authorized for handlers of universal waste paints. Our proposed provision is based on the language in the recently issued New York universal waste rule for paints, and the similar provisions in other states. *See, e.g.*, 6 NYCRR §§ 374-3.2(d)(6)(iv)(‘c’) and 374-3.3(d)(6)(iv)(‘c’) (New York) (allowing handlers to “consolidate[e] the same types of paints by opening containers and scraping, pouring, pumping, or draining the universal waste paint into another container to collect the paint provided consolidation occurs in an area that meets the secondary containment requirements ... and the paint is transferred into a container meeting [applicable] requirements”); OAC §§ 3745-273-13(G)(13) and 3745-273-33(G)(13) (Ohio) (allowing handlers to “open containers of universal waste paint and scrape, pour, pump, or drain the universal waste paint from the container to collect the paint and render the container empty”).

In short, the proposed text allows transfer of paints between containers, tanks, transport vehicles, or vessels, as long as the receiving unit meets applicable requirements for storage (as discussed above), and as long as the transfer occurs in an area that is well ventilated and equipped with secondary containment.

D. Clarification of the Relationship Between the Proposed Universal Waste Rule for Paints and Existing Universal Waste Rules for Pesticides and Aerosol Cans

Certain paints wastes may already be subject to the universal waste program on the grounds that they contain or function as pesticides (*e.g.*, mold-resistant paints) and/or are packaged in aerosol cans. *See* 40 C.F.R. §§ 273.3 and 273.6 (applying the universal waste rule to certain pesticides and aerosol cans). Accordingly, it is important to consider the relationship between the proposed universal waste rule for paints and the existing universal waste rules for pesticides and aerosol cans.

The universal waste rule for pesticides applies only to pesticides recalled pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (“FIFRA”) and “[s]tocks of other unused pesticide products that are collected and managed as part of a waste pesticide collection program.” *See* 40 C.F.R. § 273.3(a). Other pesticides must be managed in accordance with the full hazardous waste regulations (assuming they are hazardous wastes in the first instance), except that aerosol pesticides may be managed pursuant to the universal waste rules for aerosol cans. *See* 40 C.F.R. § 273.3(b)(2). Consistent with this approach, ACA/PaintCare believe that any paints qualifying as pesticides that are subject to a specific FIFRA recall or are being managed through a collection program focused on pesticides should be managed under the universal waste pesticide rules that are tailored for those situations. However, any paints qualifying as pesticides that are managed in other situations should be eligible for management as universal waste paints (or aerosols, as discussed below). *See* Attachment A (proposed §§ 273.3(b)(2)(ii) and 273.7(e)(1)).

For paints that are packaged in aerosol cans, ACA/PaintCare believe they should generally be managed as universal waste aerosol cans, rather than universal waste paints. The reason is that aerosol paints do not pose any risks that are materially different from those of other aerosol products (*e.g.*, aerosol cans containing other ignitable contents). In contrast, aerosol paints may pose hazards that are materially different from those of other paint products (*e.g.*, paints in cans), such as hazards associated with the propellants and/or the pressurized nature of the aerosol cans. Accordingly, handling (and labeling) aerosol paints as universal waste aerosols will in most cases better reflect the potential hazards of the wastes and result in application of rules that are better tailored to aerosol cans (*e.g.*, the special rules on puncturing and draining of aerosol cans).

Notwithstanding the above, ACA/PaintCare believe EPA should leave the option open to handle aerosol paints as universal waste paints, since in certain cases that may facilitate proper management of the wastes. Users of aerosol paints (especially smaller or less sophisticated users) may store such products together with paints in cans and may decide to relinquish/discard both types of paint products together. For them, it may be difficult and confusing to have to comply with separate universal waste rules for aerosol paints and paints in cans. The same may also be true for other handlers of the wastes (*e.g.*, collectors), although in our experience many collectors – including most PaintCare sites – do not accept aerosol paints.

For these reasons, ACA/PaintCare propose that all paints – other than pesticide-containing paints being managed pursuant to a FIFRA recall or a waste pesticide collection program – be eligible for management as universal waste paints. We also propose that aerosol paints may alternatively be managed as universal waste aerosol cans. Attachment A contains proposed language that reflects this approach. *See* Proposed §§ 273.6(d) and 273.7(e).

E. Discussion of State Adoption and Related Issues

ACA/PaintCare recognize that a federal universal waste rule for paint wastes, like past federal universal waste rules for other wastes, would not take effect in authorized states unless and until such states adopt the rule under their own hazardous waste programs. *See, e.g.*, 60 Fed. Reg. 25,492, 25,536 (May 11, 1995) (“the universal waste standards are applicable as part of the RCRA program upon the effective date only in those States that do not have final RCRA authorization. In authorized States, the amendments will not be applicable until the State revises its program to adopt equivalent requirements under State law”).⁴⁰

Moreover, we understand that because a universal waste rule for paint wastes would generally reduce the existing requirements for paint wastes (except, perhaps, in the few states that already designate paint wastes or their equivalent as universal wastes), the states would not be required to adopt the federal universal waste rule for these wastes. *See, e.g., id.* (“The amendments in today’s [universal waste] rule are not considered to be more stringent than the existing Federal requirements. Therefore, authorized States are not required to modify their programs to adopt requirements equivalent to the provisions contained in today’s rule”).

However, we are concerned that the resulting patchwork of state regulation will seriously undermine the goals of the federal universal waste rule, by making it more difficult to transport paint wastes across state lines to appropriate recycling or disposal facilities, and by complicating efforts of PaintCare (and others) to develop and operate national or regional programs for collecting and properly managing paint wastes.

As discussed below, ACA/PaintCare believe that there are two steps EPA can and should take to minimize these adverse effects. We ask, as part of the current petition, that the Agency undertake these efforts as an integral part of the universal waste rulemaking process.

1. EPA Should Encourage and Assist States in Expediently Adopting the Universal Waste Rule for Paint Wastes

In order to minimize the patchwork of state regulation and fully realize the benefits of a universal waste rule for paint wastes, we ask EPA to encourage states to quickly adopt the new rule. The Agency has done this in previous universal waste rules and should do so here. *See, e.g.*, 60 Fed. Reg. 25,492, 25,536 (May 11, 1995) (final original universal waste rule) (“Even though States are not required to adopt today’s rule, EPA strongly encourages them to do so”); 64 Fed.

⁴⁰ The Mercury-Containing and Rechargeable Battery Management Act of 1996 established an exception to this general rule for rechargeable batteries and consumer products containing rechargeable batteries that are not easily removable. *See* 42 U.S.C. § 14323. However, the preemption provision of that Act would not extend to paint wastes.

Reg. 36,466, 36,472 (July 6, 1999) (final universal waste rule for lamps) (“EPA hopes to encourage ... states to regulate spent lamps as universal waste and therefore promote greater consistency in regulatory approaches across state borders”); 70 Fed. Reg. 45,508, 45,516 (August 5, 2005) (final universal waste rule for mercury-containing equipment) (“[states] do not have to adopt the universal waste regulations ... although EPA encourages them to do so”).

Moreover, we ask EPA to do more than provide verbal encouragement to the states. The Agency can and should provide resources and assistance to the states to facilitate and expedite the process of adopting the rule (*e.g.*, model regulatory language, supporting information, and possibly even financial help). EPA could also coordinate with the states (even in advance of the final rule) regarding schedules and deadlines. The Agency could maintain a database tracking the state adoption process, as it is currently doing for the recent universal waste rule for aerosol cans. This would assist the regulated community and provide a subtle nudge to the states to move forward with all due speed.

2. EPA Should Clarify That Paint Wastes May Be Transported Nationwide Without Hazardous Waste Manifests or Transporters as Soon as the Wastes Are Designated as Federal Universal Wastes

Recognizing that, despite the efforts suggested above, some states may take considerable time to adopt the universal waste rule for paint wastes (or may even elect not to adopt the rule at all), ACA/PaintCare urge EPA to clarify that once paint wastes are designated as universal wastes under federal law, the wastes may be transported *nationwide* (*i.e.*, in all states, whether they have adopted the rule or not) without a hazardous waste manifest and without a hazardous waste transporter.

This result is dictated by the preemption provisions of the Hazardous Materials Transportation Act (“HMTA”), which is the statute that authorizes the hazardous materials transport program of the U.S. Department of Transportation (“DOT”). As EPA itself has stated, “[even though] preemption authorities are quite foreign to RCRA [they] are introduced into the transporter arena by the statutory directive in RCRA to maintain consistency with the DOT framework [for transportation of hazardous materials under the HMTA].”⁴¹ Indeed, EPA has explicitly acknowledged that even state hazardous waste transport requirements that have been *authorized* by the Agency pursuant to RCRA are not immune to preemption under the HMTA.⁴²

⁴¹ See Letter from Michael Shapiro, Director, Office of Solid Waste, EPA, to Richard J. Barlow, Northeast Waste Management Officials Association (“NEWMOA”) (June 11, 1996) (RCRA Online #14135) (Attachment BB); see also *N.Y. Dep’t of Env’tl. Conservation v. DOT*, 37 F.Supp.2d (N.D.N.Y. 1999) (“despite the RCRA’s recognition that states are permitted to establish requirements which are ‘more stringent’ than EPA regulations, ... when dealing with transporters of hazardous waste, this general state empowerment must be read in conjunction with the statutory mandate that EPA regulations be consistent with the HMTA”).

⁴² See, *e.g.*, 60 Fed. Reg. 62,527, 62,534 (December 6, 1995) (“EPA-authorized State requirements governing hazardous waste transporters that are more stringent than EPA’s own regulations are preempted when those requirements fail to meet [HMTA preemption] standards.... There is no basis for the position ... that any State can avoid preemption of its hazardous waste transporter requirements simply by obtaining authorization under RCRA”); Letter from Michael Shapiro, Director, Office of Solid Waste, EPA, to Charles Dickhut, Chemical Waste Transportation Institute (August 17, 1994) (RCRA Online #13692) (Attachment CC) (“RCRA authorization

In the present case, if hazardous paint wastes are classified as universal wastes, any state rules requiring such items to be shipped as ordinary hazardous wastes would be preempted. Consider, for example, the requirement that hazardous wastes be transported with a manifest. Under the universal waste rule, hazardous paint wastes would not have to be shipped with a manifest for purposes of federal law.⁴³ The HMTA explicitly provides that state shipping paper requirements (including manifest requirements) are preempted if they are not “substantively the same” as the corresponding federal requirements. *See* 49 U.S.C. § 5125(b)(1)(C). DOT has clarified that, under this standard, state requirements must “conform[] *in every significant respect* to the Federal requirement.” *See* 49 C.F.R. § 107.202(d) (emphasis added). Thus, any state manifest requirements for universal waste paints would clearly be preempted.

As EPA itself stated in 1984, federal law “prohibit[s] States from requiring separate State manifests or other information to accompany waste shipments [if such documents or information are not required by federal law].”⁴⁴ DOT echoed these statements in its own 1984 notice, saying that “no carrier could be required to carry any State manifest form that differs from the EPA form.”⁴⁵ Over the years, DOT has frequently reiterated this limitation on state information requirements for shipping materials in commerce.⁴⁶ Significantly, preemption applies not only to interstate shipments, but to intrastate shipments as well.⁴⁷

decisions provide no basis for shielding state regulations touching upon hazardous materials transport from possible preemption challenges raised under the HMTA”).

⁴³ *See* 40 C.F.R. § 273.19 (“A small quantity handler of universal waste is not required to keep records of shipments of universal wastes”); § 273.39 (requiring large quantity handlers of universal wastes to keep records of shipments, but stating that “[t]he record may take the form of a log, invoice, manifest, bill of lading, movement document or other shipping document”).

⁴⁴ *See* 49 Fed. Reg. 10,490, 10,492 (March 20, 1984); *see also id.* (“States ... may not require any additional information to accompany the waste shipment”; “no other form may be required by a State to accompany a waste shipment”); *id.* at 10,494 (“States are not precluded from setting up another system of forms ... as long as the system does not interfere with the actual shipment of waste [and] transporters [are] not ... required to carry these forms”; *id.* at 10,495 (“States may not require that any information other than the federally-required items accompany shipments of hazardous waste”). EPA has been especially clear that transit states through which wastes merely pass through on their way from generators to recycling or disposal facilities cannot impose manifest requirements if manifests are not mandated by federal law. *See, e.g.,* 49 Fed. Reg. at 10,495 (“States through which hazardous waste shipments pass are not allowed to place additional information requirements on the transporter as a condition of transportation.”); RCRA/CERCLA Hotline Report (May 1985) (RCRA Online #12399) (Attachment DD) (“States through which [a] waste shipment travels may not dictate manifest requirements.”).

⁴⁵ *See* 49 Fed. Reg. 10,507, 10,508 (March 20, 1984); *see also id.* (“while [the uniform manifest rules] do not prohibit the transporter from voluntarily carrying [additional] information, they do preclude States from requiring the transporter to do so”).

⁴⁶ *See, e.g.,* 60 Fed. Reg. 62,527, 62,537-38 (December 6, 1995) (New York regulations requiring additional manifest information are preempted, because there are no corresponding federal requirements); 58 Fed. Reg. 11,176 (February 23, 1993) (Illinois regulations requiring a different format for providing information on the manifest are preempted).

⁴⁷ *See* 62 Fed. Reg. 1208 (January 8, 1997) (expanding the scope of the hazardous materials regulations to cover intrastate shipments, consistent with a 1990 amendment to the federal hazardous materials transportation law codified at 49 U.S.C. § 5103(b)(1)).

Other state requirements for transport of hazardous paint wastes would likewise be preempted. As in the case of state manifest requirements, state rules governing packaging, labeling, or release reporting during transportation are explicitly preempted if they differ in any respect from the federal rules. *See* 49 U.S.C. §§ 5125(b)(1)(B), (D). State rules for licensing or registration of transporters are also preempted if they operate as an “obstacle” to the goals of the federal hazardous materials law.⁴⁸ Of course, state rules related to handling of paint wastes at stationary facilities would generally *not* be preempted, because they do not involve transportation.⁴⁹

ACA/PaintCare recognize that EPA may be hesitant to weigh in on these preemption issues, given that DOT is the department responsible for implementing the statute with the preemption provisions (*i.e.*, the HMTA). However, it is essential for EPA to address the transportation issues (in consultation with DOT, if necessary) in order for the benefits of the universal waste rule to be fully realized. Similarly, ACA/PaintCare recognize that EPA may be reluctant to address the preemption issue due to concerns about the potential reactions of state regulatory agencies, which may be protective of their sovereign authority. However, states generally understand the benefits of streamlining the requirements for universal wastes and may welcome preemption of patchwork transport rules as an important step toward furthering the goals of the universal waste rule. In any event, EPA would not be establishing new law by addressing the preemption issue; rather, it would simply be confirming that, under *existing* law, the effect of a new federal universal waste rule for hazardous paint wastes would be to preempt more stringent state rules with respect to transportation (and only transportation) of such wastes.

If, despite the points above, EPA declines to address the preemption issue, we ask the Agency to at least acknowledge that a preemption issue *might* exist and explicitly defer to DOT for resolution. While we believe EPA should do more here (again, in concert with DOT, if necessary), this small step would at least have the benefit of eliminating the confusion caused by EPA statements in some of the past universal waste rules – made without any reference to or consideration of the HMTA preemption provisions – that federally designated universal wastes remain subject to hazardous waste manifest and transporter requirements when traveling from, to, or through states that have not adopted the universal waste rule.⁵⁰ These statements were clearly not, and were clearly not intended to be, determinations regarding potential HMTA preemption. Acknowledging this fact would provide a clear path forward for evaluation of the

⁴⁸ *See* 49 U.S.C. § 5125(a)(2); *Colorado Public Utilities Commission v. Harmon*, 951 F.2d 1571 (10th Cir. 1991) (Colorado permit requirements for hazardous material transporters are preempted because they are an obstacle to the congressional goal of promoting safety through uniform standards).

⁴⁹ One possible exception relates to loading, unloading, and storage activities that are incidental to transportation. *See* 68 Fed. Reg. 61,906, 61,938 (October 30, 2003) (revising 49 C.F.R. § 171.1(c) to clarify that transportation includes loading, unloading, and storage incidental to transportation) and 61,923-24 (explaining that state and local requirements related to these activities may be preempted).

⁵⁰ *See, e.g.*, 60 Fed. Reg. 25,492, 25,537-38 (May 11, 1995) (final original universal waste rule); 64 Fed. Reg. 36,466, 36,482-83 (July 6, 1999) (final universal waste rule for lamps); 70 Fed. Reg. 45,508, 45,516-17 (August 5, 2005) (final universal waste rule for mercury-containing equipment).

issue, as well as the possibility of an outcome that could significantly advance the goals of the universal waste rule.

F. Conforming or Editorial Changes to the Regulations

In order to properly designate paint wastes as universal wastes and address the issues discussed above, it would be necessary to make some conforming changes to the universal waste rules in 40 C.F.R. Part 273, as well as in related provisions of other RCRA rules. Most of these changes would be straightforward and would simply track the changes that EPA has made in the past when adding other new categories of universal wastes (*e.g.*, lamps and aerosol cans). For example, in each place where the rules list all the categories of universal wastes, paints would need to be added to the list. *See* Attachment A, Proposed §§ 260.10 (definition of universal waste), 261.9, 264.1(g)(11), 265.1(c)(14), 268.1(f), 270.1(c)(2)(viii), 273.1(a), 273.9 (definitions of universal waste, large quantity handler or universal waste, and small quantity handler of universal waste), and 273.32(b)(4). However, a few proposed changes warrant additional discussion:

- o The current definition of universal waste handler in 40 C.F.R. §§ 260.10 and 273.9 states that the term does not cover “[a] person who treats (except under the provisions of § 273.13(a) or (c), or § 273.33(a) or (c)), disposes of, or recycles (except under the provisions of § 273.13(e) or § 273.33(e)) universal waste.” This language would clearly need to be amended to cover the new exceptions for paint handler activities such as sorting and consolidation in proposed §§ 273.13(f) and 273.33(f) (as discussed above). However, it is not immediately obvious whether these new exceptions should be included in the first parenthetical of the definition (covering treatment activities), the second parenthetical (covering recycling activities), or perhaps both. Indeed, the same issue may already exist with respect to the other exceptions mentioned in the current definition text (*i.e.*, subsections (a), (c), and (e) of §§ 273.13 and 273.33, covering various activities for batteries, mercury-containing equipment, and aerosol cans, respectively), since the activities covered by those other exceptions likewise could potentially be characterized as treatment and/or recycling (especially given that recycling is a type of treatment).⁵¹

The inclusion of an activity in one parenthetical and not the other may unintentionally suggest that the activity is or is not recycling or part of a recycling process.⁵² In order to avoid any confusion and to simplify the regulatory text, we propose that the language be modified so that there is just one parenthetical for both treatment and recycling, which

⁵¹ *See* 40 C.F.R. § 260.10 (defining treatment to include processes that “recover ... material resources from [a] waste, or ... render such waste ... amenable for recovery”); Letter from Sylvia K. Lowrance, Director, Office of Solid Waste, EPA, to Lew H. Dodgion, P.E., Administrator, Nevada Division of Environmental Protection (April 30, 1993) (RCRA Online #11745) (Attachment EE) (“under the RCRA regulations, recycling is normally a type of treatment”).

⁵² EPA guidance makes clear that activities that do not themselves recover materials from a waste may still be part of an overall recycling process and thus exempt from RCRA regulation. *See, e.g.*, Letter from Jeffrey D. Denit, Acting Director, Office of Solid Waste, EPA, to D.B. Reddington, Monsanto Company (July 28, 1993) (RCRA Online #11759) (Attachment FF) (crushing of lamps prior to recovery of mercury may be exempt as “a necessary part of a legitimate recycling process”).

would cover the exceptions for all of the activities specified in subsections (a), (c), (e), and proposed new (f) of §§ 273.13 and 273.33. *See* Attachment A, Proposed 40 C.F.R. §§ 260.10 and 273.9.

- o In order to implement the proposed resolution of the issues associated with the interplay between the proposed new universal waste rule for paint and the existing universal waste rules (for pesticides and aerosol cans), as discussed above, it would obviously be necessary to include relevant language in the new text for universal waste paints. *See* Attachment A, Proposed §§ 273.7(e) (proposed text in the rule for universal waste paints, specifying when paints may be managed as universal waste pesticides or aerosol cans, rather than as universal waste paints). However, it would also be necessary to modify the corresponding text in the prior universal waste provisions.

The applicability section for universal waste pesticides already makes clear that aerosol cans containing pesticides that are not eligible to be managed as universal waste pesticides (*e.g.*, because they have not been suspended or cancelled, are not subject to a recall, and/or are not being managed under a waste pesticide collection program) may be managed as universal waste aerosol cans. *See* 40 C.F.R. § 273.3(b). We propose that this text be modified to also similarly state that paints containing pesticides that are not eligible to be managed as universal waste pesticides may be managed as universal waste paints. *See* Attachment A, Proposed § 273.3(b)(2).

We further propose that the existing applicability section for universal waste aerosol cans be amended by adding a new subsection specifying that aerosol cans containing paints may be managed as universal waste paints, rather than as universal waste aerosol cans. *See* Attachment A, Proposed § 273.6(d).

VI. CONCLUSION

As discussed in detail above, EPA has recognized since the very beginning of the universal waste program that paint wastes would be prime candidates for inclusion in that program. The case for taking this step now is more compelling than ever, since it would greatly facilitate the ongoing development of product stewardship programs for paint wastes, such as PaintCare, thereby helping to divert such wastes from the municipal solid waste stream and promoting the environmentally sound management of such wastes, including through beneficial recycling.

All eight factors set forth in the regulations as considerations for designating new categories of universal wastes support classification and regulation of paint wastes as universal wastes. That is more than required under the rules, which merely require that the *balance* of factors favors a universal waste designation. Indeed, seven states have already classified paints as universal wastes. EPA should take the same step now at the federal level.

To assist the Agency in this process, ACA/PaintCare have drafted proposed regulatory language, provided detailed technical support, and elaborated on key issues. We urge EPA to move forward as expeditiously as possible.

We would welcome the opportunity to discuss this matter with the Agency, and we stand ready to assist EPA in whatever way might be helpful. If you have questions or would like to arrange a meeting, please do not hesitate to contact Heidi McAuliffe at hmcauliffe@paint.org and Suzanne Chang at schang@paint.org. We greatly appreciate EPA's efforts in considering our petition.

PROPOSED REGULATORY AMENDMENTS

PART 260—HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

■ 1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921– 6927, 6930, 6934, 6935, 6937, 6938, 6939, 6939g, and 6974.

Subpart B—Definitions

■ 2. Section 260.10 is amended by:

■ a. Adding definitions of “Paint”, “Oil-based paint”, and “Water-based paint” in alphabetical order;

■ b. Republishing the introductory text for the definition “Universal waste” and revising paragraphs (4) and (5) and adding paragraph (6); and

■ c. In the definition of “Universal waste handler,” revising paragraph (2)(i).

The additions and revisions read as follows:

§260.10 Definitions.

* * * * *

Oil-based paint means paint in which an organic solvent such as linseed oil, turpentine, or a synthetic alkyd resin is the primary solvent.

* * * * *

Paint means a pigmented or unpigmented powder coating, or a pigmented or unpigmented mixture of binder and suitable liquid, that forms an adherent coating when applied to a surface. Powder coating is a surface coating that is applied as a dry powder and is fused into a continuous coating film through the use of heat.

* * * * *

Universal waste means any of the following hazardous wastes that are managed under the universal waste requirements of part 273 of this chapter:

* * * * *

(4) Lamps as described in §273.5 of this chapter;

(5) Aerosol cans as described in §273.6 of this chapter; and

(6) Paints as described in § 273.7 of this chapter.

* * * * *

Universal waste handler:

* * * * *

(2) * * *

(i) A person who treats or recycles (except under the provisions of 40 CFR 273.13(a), (c), (e) or (f), or 40 CFR 273.33(a), (c), (e), or (f)), or disposes of, universal waste; or

* * * * *

Water-based paint means paint in which water is the primary solvent.

* * * * *

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

- 3. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y) and 6938.

Subpart A—General

- 4. Section 261.9 is amended by revising paragraphs (d) and (e) and adding paragraph (f) to read as follows:

§261.9 Requirements for Universal Waste.

* * * * *

- (d) Lamps as described in §273.5 of this chapter;
- (e) Aerosol cans as described in §273.6 of this chapter; and
- (f) Paints as described in §273.7 of this chapter.

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

- 5. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6939g.

Subpart A—General

- 6. Section 264.1 is amended by revising paragraphs (g)(11)(iv) and (v) and adding paragraph (g)(11)(vi) to read as follows:

§264.1 Purpose, scope and applicability.

* * * * *

- (g) * * *
- (11) * * *
- (iv) Lamps as described in §273.5 of this chapter;
- (v) Aerosol cans as described in §273.6 of this chapter; and
- (vi) Paints as described in § 273.7 of this chapter.

* * * * *

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

- 7. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6906, 6912, 6922, 6923, 6924, 6925, 6935, 6936, 6937, and 6939g.

Subpart A—General

■ 8. Section 265.1 is amended by revising paragraphs (c)(14)(iv) and (v) and adding paragraph (c)(14)(vi) to read as follows:

§265.1 Purpose, scope, and applicability.

* * * * *

(c) * * *

(14) * * *

(iv) Lamps as described in §273.5 of this chapter;

(v) Aerosol cans as described in §273.6 of this chapter; and

(vi) Paints as described in § 273.7 of this chapter.

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

■ 9. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

■ 10. Section 268.1 is amended by revising paragraphs (f)(4) and (5) and adding paragraph (f)(6) to read as follows:

§268.1 Purpose, scope, and applicability.

* * * * *

(f) * * *

(4) Lamps as described in §273.5 of this chapter;

(5) Aerosol cans as described in §273.6 of this chapter; and

(6) Paints as described in § 273.7 of this chapter.

PART 270—EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

■ 11. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

Subpart A—General Information

■ 12. Section 270.1 is amended by revising paragraphs (c)(2)(viii)(D) and (E) and adding paragraph (c)(2)(viii)(F) to read as follows:

§270.1 Purpose and scope of the regulations in this part.

* * * * *

(c) * * *

(2) * * *

(viii) * * *

(D) Lamps as described in §273.5 of this chapter;

(E) Aerosol cans as described in §273.6 of this chapter; and

(F) Paints as described in § 273.7 of this chapter. .

* * * * *

PART 273—STANDARDS FOR UNIVERSAL WASTE MANAGEMENT

■ 13. The authority for part 273 continues to read as follows:

Authority: 42 U.S.C. 6922, 6923, 6924, 6925, 6930, and 6937.

Subpart A—General

■ 14. Section 273.1 is amended by revising paragraphs (a)(4) and (5) and adding paragraph (a)(6) to read as follows:

§273.1 Scope.

(a) * * *

(4) Lamps as described in §273.5 of this chapter;

(5) Aerosol cans as described in §273.6 of this chapter; and

(6) Paints as described in § 273.7 of this chapter.

* * * * *

■ 15. Section 273.3 is amended by revising paragraph (b)(2) to read as follows:

§ 273.3 Applicability—pesticides.

* * * * *

(b) * * *

(2) Pesticides not meeting the conditions set forth in paragraph (a) of this section. These pesticides must be managed in compliance with the hazardous waste regulations in 40 CFR parts 260 through 272, except as follows:

(i) Aerosol cans as defined in § 273.9 that contain pesticides may be managed as aerosol can universal waste under § 273.6; and

(ii) Paints as defined in § 273.9 that contain pesticides may be managed as universal waste paints under § 273.7;

* * * * *

- 16. Section 273.6 is amended by adding subsection (d) to read as follows:

§ 273.6 Applicability—Aerosol cans.

* * * * *

(d) *Alternative universal waste management.* Aerosol cans containing paints as defined in § 273.9 may be managed as universal waste paints under § 273.7, rather than as universal waste aerosol cans under this section.

- 17. Section 273.7 is added to read as follows:

§ 273.7 Applicability—Paints.

(a) *Paints covered under this part.* The requirements of this part apply to persons managing paints, as described in § 273.9, except those listed in paragraph (b) of this section.

(b) *Paints not covered under this part.* The requirements of this part do not apply to persons managing the following types of paints:

- (1) Paints that are not yet waste under part 261 of this chapter, including those that do not meet the criteria for waste generation in paragraph (c) of this section or those that are not wastes as described in paragraph (d) of this section;
- (2) Paints that are not hazardous waste. A paint is a hazardous waste if the paint exhibits one or more of the characteristics identified in part 261, subpart C, of this chapter; and
- (3) Paint residues remaining in empty containers as defined in § 261.7 of this chapter.

(c) *When a paint becomes a waste.* A paint becomes a waste on the date that any of the following occurs:

- (1) The generator or other handler decides to abandon it (as described in § 261.2(b) of this chapter);
- (2) The generator or other handler decides to recycle it by using it in a manner constituting disposal or by burning it for energy recovery (as described in §§ 261.2(c)(1)-(2) of this chapter);
or
- (3) In the case of oil-based paint as described in § 273.9, the generator or other handler decides to manage the paint through a paint collection program, unless the operator of the program has documented that there is a reasonable expectation that the paint will be legitimately used/reused (other than through use in a manner constituting disposal or by burning for energy recovery) or reclaimed.

(d) *Paints that are not wastes.* The following paints are not wastes and thus are not subject to hazardous waste requirements, including this part 273:

- (1) Paints that a generator or other handler has decided to use or reuse (other than by using it in a manner constituting disposal or by burning it for energy recovery);
- (2) Paints that a generator or other handler has decided to reclaim; and

(3) Water-based paints (as described in § 273.9) that a generator or other handler has decided to manage through a paint collection program, unless and until the person operating the program decides to discard the paint (by abandoning it, using it in a manner constituting disposal, or burning it for energy recovery), in which case such person becomes the generator of the paint waste.

(e) *Alternative universal waste management.* (1) Paints that contain pesticides as defined in § 273.9 may be managed as universal waste pesticides under § 273.3, rather than as universal waste paints under this section.

(2) Aerosol cans as defined in § 273.9 that contain paints may be managed as universal waste aerosol cans under § 273.6, rather than as universal waste paints under this section.

■ 18. Section 273.9 is amended by:

■ a. Adding definitions of “Paint”, “Oil-based paint”, and “Water-based paint” in alphabetical order;

■ b. Revising the definitions of “Large Quantity Handler of Universal Waste” and “Small Quantity Handler of Universal Waste”;

■ c. Republishing the introductory text for the definition “Universal waste” and revising paragraphs (4) and (5) and adding paragraph (6); and

■ d. In the definition of “Universal Waste Handler”, revising paragraph (2)(i).

The revisions and additions read as follows:

§ 273.9 Definitions.

Large quantity handler of universal waste means a universal waste handler (as defined in this section) who accumulates 5,000 kilograms or more total of universal waste (batteries, pesticides, mercury-containing equipment, lamps, aerosol cans, or paints, calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which the 5,000-kilogram limit is met or exceeded.

* * * * *

Oil-based paint means paint in which an organic solvent such as linseed oil, turpentine, or a synthetic alkyd resin is the primary solvent.

* * * * *

Paint means a pigmented or unpigmented powder coating, or a pigmented or unpigmented mixture of binder and suitable liquid, that forms an adherent coating when applied to a surface. Powder coating is a surface coating that is applied as a dry powder and is fused into a continuous coating film through the use of heat.

* * * * *

Small quantity handler of universal waste means a universal waste handler (as defined in this section) who does not accumulate 5,000 kilograms or more of universal waste (batteries, pesticides, mercury-containing equipment, lamps, aerosol cans, or paints, calculated collectively) at any time.

* * * * *

Universal waste means any of the following hazardous wastes that are subject to the universal waste requirements of this part:

* * * * *

- (4) Lamps as described in §273.5 of this chapter;
- (5) Aerosol cans as described in §273.6 of this chapter; and
- (6) Paints as described in § 273.7 of this chapter.

* * * * *

Universal waste handler:

* * * * *

(2) * * *

- (i) A person who treats or recycles (except under the provisions of 40 CFR 273.13(a), (c), (e) or (f), or 40 CFR 273.33(a), (c), (e), or (f)), or disposes of, universal waste; or

* * * * *

Water-based paint means paint in which water is the primary solvent.

* * * * *

Subpart B—Standards for Small Quantity Handlers of Universal Waste

- 19. Section 273.13 is amended by adding paragraph (f) to read as follows:

§ 273.13 Waste management.

* * * * *

(f) *Paints.* A small quantity handler of universal waste must manage universal waste paints in a way designed to prevent releases of any universal waste or component of a universal waste to the environment, as follows:

(1) The universal waste paints must be contained in one or more of the following:

(i) A container that remains closed (except when wastes are being added to or removed from the container), structurally sound, compatible with the paint, lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and is protected from sources of heat; or

(ii) A container that does not meet the requirements of paragraph (f)(1)(i) of this section, provided that the unacceptable container is overpacked (with or without absorbents) in a container that does meet the requirements of paragraph (f)(1)(i) of this section; or

(iii) A tank that meets the requirements of 40 CFR part 265 subpart J, except for 40 CFR 265.197(c), 265.200, and 265.201; or

(iv) A transport vehicle or vessel that is closed, structurally sound, compatible with the paint, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

(2) A small quantity handler of universal waste must manage universal waste paints that are ignitable in accordance with 40 CFR 262.17(a)(1)(vi)(B).

(3) A small quantity handler of universal waste may conduct the following activities:

(i) Sorting paints by type;

- (ii) Placing one or more containers of paint into a larger container, which must meet the requirements of paragraph (f)(1)(i) of this section unless all of the smaller containers inside meet such requirements; and
- (iii) Consolidating paints by scraping, pouring, pumping, draining, or otherwise removing (including rinsing with a suitable solvent) the universal waste paint from a container, tank, transport vehicle, or vessel and transferring the material to another container, tank, transport vehicle, or vessel, which must meet the requirements of paragraph (f)(1) of this section, provided that the transfer occurs in an area that is well ventilated and equipped with secondary containment.

■ 20. Section 273.14 is amended by adding paragraph (g) to read as follows:

§ 273.14 Labeling/marking.

* * * * *

(g) A container (or overpack of one or more containers), tank, transport vehicle or vessel in which recalled universal waste paints are contained must be labeled or marked clearly with either of the following phrases: : “Universal Waste – Paint(s)” or “Waste Paint(s)”.

Subpart C—Standards for Large Quantity Handlers of Universal Waste

■ 21. Section 273.32 is amended by revising paragraph (b)(4) to read as follows:

§ 273.32 Notification.

* * * * *

(b) * * *

(4) A list of all the types of universal waste managed by the handler (*e.g.*, batteries, pesticides, mercury-containing equipment, lamps, aerosol cans, and paints); and

* * * * *

■ 22. Section 273.33 is amended by adding paragraph (f) to read as follows:

§ 273.33 Waste management.

* * * * *

(f) *Paints.* A large quantity handler of universal waste must manage universal waste paints in a way designed to prevent releases of any universal waste or component of a universal waste to the environment, as follows:

(1) The universal waste paints must be contained in one or more of the following:

(i) A container that remains closed (except when wastes are being added to or removed from the container), structurally sound, compatible with the paint, lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and is protected from sources of heat; or

- (ii) A container that does not meet the requirements of paragraph (f)(1)(i) of this section, provided that the unacceptable container is overpacked (with or without absorbents) in a container that does meet the requirements of paragraph (f)(1)(i) of this section; or
 - (iii) A tank that meets the requirements of 40 CFR part 265 subpart J, except for 40 CFR 265.197(c), 265.200, and 265.201; or
 - (iv) A transport vehicle or vessel that is closed, structurally sound, compatible with the paint, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- (2) A large quantity handler of universal waste must manage universal waste paints that are ignitable in accordance with 40 CFR 262.17(a)(1)(vi).
- (3) A large quantity handler of universal waste may conduct the following activities:
- (i) Sorting paints by type;
 - (ii) Placing one or more containers of paint into a larger container, which must meet the requirements of paragraph (f)(1)(i) of this section unless all of the smaller containers inside meet such requirements; and
 - (iii) Consolidating paints by scraping, pouring, pumping, draining, or otherwise removing (including rinsing with a suitable solvent) the universal waste paint from a container, tank, transport vehicle, or vessel and transferring the material to another container, tank, transport vehicle, or vessel, which must meet the requirements of paragraph (f)(1) of this section, provided that the transfer occurs in an area that is well ventilated and equipped with secondary containment.

■ 23. Section 273.34 is amended by adding paragraph (g) to read as follows:

§ 273.34 Labeling/marking.

* * * * *

(g) A container (or overpack of one or more containers), tank, transport vehicle or vessel in which recalled universal waste paints are contained must be labeled or marked clearly with either of the following phrases: : “Universal Waste – Paint(s)” or “Waste Paint(s)”.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

Date: 11.19.2021

COVERSHEET: EXPLANATION OF CITATION AND/OR TERMINOLOGY CHANGES IN THIS POLICY DOCUMENT

This policy document remains wholly in effect, but some or all of the regulatory citations within it have changed. These changes do not alter the existing regulatory interpretations.

As part of the [2016 Hazardous Waste Generator Improvements Rule](#), many of the regulations that apply to hazardous waste generators were moved to, or reorganized within, title 40 of the Code of Federal Regulations (CFR) part 262. To view a crosswalk between the old and new citations, please visit the [Hazardous Waste Generator Regulations Crosswalk webpage](#).

The Hazardous Waste Generator Improvements Rule also made changes to terms that may be included in this document. The most common term change was replacing “conditionally exempt small quantity generators” (CESQGs) with “very small quantity generators” (VSQGs). In addition, EPA defined the term “central accumulation area” (CAA) to mean a generator’s 90- or 180-day accumulation area for hazardous waste.

Jessica Young

Jessica Young
Chief of the Recycling and Generator Branch
Office of Resource Conservation and Recovery

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

APRIL 11 1997

Mr. James E. Thomas Jr.
Jetco, Inc.
P.O. Box 11494
Memphis, TN 38111

Dear Mr. Thomas:

This is in response to your letters of October 14, 1996 and Dec 3, 1996 to Michael Shapiro. I apologize for the delay in our reply. Your questions concern the regulatory provisions under the federal hazardous waste regulations that apply to the remixing of paint and coatings that have separated in the container, and to the establishment of collection sites for empty paint cans.

First, I would like to commend you for your efforts to develop a technology that allows materials that might otherwise become wastes to be used as effective products as well as your efforts to minimize the failure of coatings which can result in unnecessary generation of waste and the need to use new replacement materials. The Environmental Protection Agency (EPA) encourages pollution prevention and the use of technologies that minimize waste generation.

Based on clarification provided to Kristina Meson and Ann Codrington of my staff and your letters, we understand that Jetco proposes to market a unit that remixes paint and coatings that have separated in the container due to age. The unit potentially may be purchased by hardware stores and other retailers who will encourage the public to bring in paint for remixing. You also propose to establish a system to collect paint cans that have been emptied according to the provisions at 40 Code of Federal Regulations 261.7 for future recycling as scrap metal. You ask that we clarify whether hazardous waste regulations apply to the owner or operator of a location that collects empty paint cans destined for recycling and whether regulations apply to the storage and transportation of the cans.

Hazardous Waste Determination

Paint that is to be remixed using the Jetco unit and is to be used for its intended purpose (e.g., as a paint or coating) regardless of its age or condition before re-mixing is not considered a solid waste and therefore cannot be a hazardous waste, and the hazardous waste regulations do not apply. However if the paint must be discarded, it would be considered a waste and the generator must make a hazardous waste determination and comply with any applicable requirements.

Faxback 14084

In general hazardous waste regulations apply to materials which are first determined to be solid wastes. A solid waste is a hazardous waste if it is listed as a hazardous waste in Subpart D of 40 CFR Part 261, or if it exhibits a characteristic of hazardous waste as identified in Subpart C of 40 CFR, Part 261. A generator may test the waste or use knowledge of the process (or the material) to determine whether the waste generated is hazardous. It is the responsibility of the generator of the paint waste to determine whether the waste is hazardous.

Discarded paints generally are not found on EPA's "Lists of Hazardous Wastes" found at Subpart D of 40 CFR part 261. However, discarded paints are considered hazardous waste if they exhibit a characteristic described at 40 CFR 262 Subpart C. Paint wastes may exhibit characteristics such as Ignitability or Toxicity described at 40 CFR §§262.21 and 261.24. Paint that is considered hazardous waste and that is generated by a conditionally exempt small quantity generator (see definition below) is not subject to federal regulation under Parts 262 through 266, 268, 270 and other applicable provisions, if the waste is discarded in a facility which meets the criteria of 40 CFR §§261.5(f) and/or (g). States however, may impose more stringent requirements than the federal regulations and therefore must be contacted to determine what requirements might apply where paint remixing operations are to occur.

Generator Status of Household Waste

Generally, wastes from households are not subject to hazardous waste regulation. If the remixing process is not successful, homeowners may discard the paint themselves, or the paint may be discarded at the business since household wastes are excluded from the definition of solid waste at 40 CFR 261.4(b). Therefore, the hazardous waste regulations do not apply to household waste, including household waste that has been collected, transported, stored, treated, disposed, recovered (e.g., refuse derived fuel) or reused. "Household waste" means any material including garbage, trash and sanitary residues in septic tanks) derived from households (including single and multiple residences, hotels, and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas). Therefore, if the waste comes from a household, it would not be subject to the hazardous waste regulations even if it were later discarded on the premises of a business.

Regulated Generators

If however, the paint is brought in by generators other than household generators (i.e., a conditionally exempt small quantity generator /1, a small quantity generator /2, or a large quantity generator /3), and the waste must be discarded (e.g., because the remixing process was not successful), paint that is hazardous waste would be subject to regulations and could not be

discarded at the premises of the business unless the business is a permitted treatment, storage, or disposal facility licensed to accept such wastes. Household waste which is mixed with hazardous waste from regulated generators would also be regulated.

Collection Program

With respect to establishing a collection facility for empty paint cans, the Agency clarified its regulations pertaining to hazardous waste remaining in "empty" containers in a *Federal Register* notice published on November 25, 1980 (see 45 *FR* 78524). We have enclosed a copy of this *Federal Register* notice for your convenience. In this *Federal Register Notice*, EPA explained that "except where the hazardous waste is an acutely hazardous material listed in §261.33(e), the small amount of hazardous waste residue that remains in individual empty, [as described in 40 CFR 261.7] un-rinsed containers does not pose a substantial hazard to human health and the environment." The Agency also states in the November 25, 1980 *Federal Register* notice that "What should be clear from §261.7, however is that no "empty" containers are subject to regulatory control because no "empty" containers hold residues that are considered hazardous wastes for regulatory purposes."(45 *FR* 78525, November 25, 1980)

The definition of an "empty" container is found at 40 CFR 261.7(b)(1)(i), which describes a container as empty if:

- (i) all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, *e.g.*, pouring, pumping, and aspirating, *and*
- (ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, *or*
- (iii) (A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size, or (B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

For the purpose of this interpretation, we will rely on the discussion found at 40 CFR 261.7(b) which focuses on containers that have held hazardous waste other than gases and acutely hazardous materials, because paint wastes most often fall into this category.

The Agency goes on to say in the November 25, 1980 *Federal Register* notice that "What should be clear from §261.7, however, is that no "empty" containers are subject to regulatory control because no "empty" containers hold residues that are considered hazardous wastes for regulatory purposes." (45 *FR* 78525, November 25, 1980)

Therefore, if the paint cans you propose to collect have been emptied in accordance with 40 CFR 261.7, the Agency would not consider them subject to regulatory control at the federal level. Please note that there are additional descriptions of "empty" that apply to containers

holding acute hazardous waste or compressed gas (see 40 CFR 261.7(b)(2) and (3)). Also note that there may be state or local regulations which govern the collection of containers that have held paints or other coatings. Please be sure to check with the appropriate state or local agency for regulations and guidelines applicable to paint cans.

However, if the cans are not emptied according to the provisions at 40 CFR 261.7, they may be subject to regulatory control if they were received from generators of hazardous waste other than household generators. Residues remaining in paint cans in quantities above the levels defined at 40 CFR 261.7, would be regulated as hazardous waste if they meet the defining criteria of hazardous wastes found at 40 CFR 261 Subparts C and D. In order for a business to collect such hazardous wastes, it must be a permitted treatment storage or disposal facility licensed to accept such waste.

I hope this information is useful. As you are aware, we have not included information about air or water regulations that may apply to the activities you propose, and we recommend that you contact the appropriate offices for that appropriate information. Please direct inquiries to the Director of the Office of Air Quality Planning and Standards, Mr. John S. Seitz, U.S. EPA-MD-10, Research Triangle Park, NC 27711, and to the Director of the Office of Water and Drinking Water, Ms. Cynthia C. Dougherty, U.S. EPA - E1209, 401 M Street S.W., Washington D.C. 20460.

Should you have questions or clarifications about this interpretation, please contact Ann Codrington of my staff at 703-308-8825.

Sincerely,

Elizabeth Cotsworth, Acting Director
Office of Solid Waste

Attachments

1 A generator is a conditionally exempt small quantity generator in a calendar month if he generates no more than 100 kilograms of hazardous waste and no more than 1 kilogram per month if the waste is an acute hazardous waste listed in 40 CFR parts 261.31, 261.31, or 261.33(e). A conditionally exempt small quantity generator may not accumulate more than 1000 kilograms at any one time (see 40 CFR 261.5).

2 A small quantity generator is a generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and the quantity of waste accumulated on site never exceeds 6000 kilograms (see 40 CFR 262.34(d)).

3 A large quantity generator is a generator of quantities over 1000 kilograms of hazardous waste per calendar month.

9444.1988(11)

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

MAY -5 1988

Mr. William Lindberg
Regulatory Affairs Coordinator
SWI, Inc.
P.O. Box B
Saukville, WI 53080

Dear Mr. Lindberg:

This is in response to your letter of April 19, 1988 to Mr. Steven Weil, in which you ask if paints containing solvent constituents are subject to F listings (40 CFR 261.31).

You are correct in stating that "solvents that are used for their 'solvent' properties--that is, to solubilize (dissolve) or mobilize other constituents" (50 FR 53316, December 31, 1985) are covered by the spent solvent listings. However, the Federal Register notice goes on to state that "process wastes where solvents were used as reactants or ingredients in the formulation of commercial chemical products are not covered by the listing. The products themselves are also not covered." (Id.) Paints, which are included in the classification of such commercial chemical products are, therefore, not F-listed spent solvent hazardous wastes.

Thank you for your letter. If you have any further questions, please call the RCRA/Superfund Hotline at (800)424-9346.

Sincerely,

Original Document signed

Devereaux Barnes, Director
Characterization and
Assessment Division

9444.1987(17)

PAINT WASTES AND THE SPENT SOLVENT LISTINGS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

MAY 20 1987

Mr. Stephen J. Evans
Environmental Engineer
Modine Manufacturing Company
1500 De Koven Ave
Racine, Wisconsin 53401

Dear Mr. Evans:

This is in response to your letter of March 30, 1987, in which you request guidance as to the proper classification of waste paint sludge and whether these wastes are subject to the November 7, 1986, land disposal restrictions rule. Specifically, you referred to paint sludge waste resulting from paint operations where the paint has been thinned with petroleum naphtha solvent. Furthermore, you indicated that the virgin petroleum naphtha solvent contains certain solvent constituents that are also included under the F001-F005 spent solvent listings (e.g., xylene and toluene).

Each of the questions raised in your letter is restated below and followed by the appropriate response

1. Can we continue to classify the paint sludge as a D007 waste or must we classify it as an F003 waste?

In order for a waste to meet the criteria of the spent solvent listing (i.e., EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005), the waste must be generated as the result of a solvent being used for its "solvent" properties, that is, its ability to solubilize (dissolve) or mobilize other constituents (e.g., solvents used in degreasing, cleaning, fabric scouring; as diluents, extractants, reaction and synthesis media). Process wastes containing solvents where the solvent is an ingredient in the formulation of a product are not covered by the spent solvent listings. Thus, paints containing solvents as an ingredient are not covered under the solvent listings. In the painting process scenario you described, the addition of petroleum naphtha solvent to a paint product constitutes the formulation of a modified paint product.

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The Agency does not recognize a distinction between paints that contain solvents and paint where solvents have been added.

Therefore, thinned paint (as described in your letter) that is later discarded as a waste or paint sludge resulting from the use of the thinned paint would not be covered under the F001-F005 spent solvent listings. If the extractant from a representative sample of the paint sludge exceeds the maximum concentration of chromium for the characteristic of EP Toxicity (40 CFR 261.24), the waste would be appropriately classified under EPA Hazardous Waste Number D007.

2. If virgin xylene were used in lieu of petroleum naphtha to thin the paint, is the paint sludge that results an F003 waste (>1% xylene by weight in paint sludge)?

Regardless of whether the solvent is virgin xylene or petroleum naphtha, the solvents are used as ingredients in the formulation of the paint. As such, the resultant paint sludge would not meet the criteria for an F003 spent solvent waste (refer to the response to question No. 1).

3. If waste or reclaimed xylene were used in lieu of petroleum naphtha to thin the paint, is the paint sludge that results an F003 waste (>1% xylene in paint sludge)?

No. The paint sludge that results would not be properly classified as an F003 spent solvent waste (refer to the response to question No. 1).

4. If xylene were used to clean the spray guns (the solvent/paint sprayed onto the water wall), would the paint sludge then become an F003 waste (>1% xylene in paint sludge)?

Using xylene to clean the spray guns constitutes use for its solvent properties because the xylene solubilizes (dissolves) other constituents (i.e., paint). As such, spent xylene that is generated from this cleaning practice would be covered by the spent solvent listings, specifically Hazardous Waste No. F003. Furthermore, in cases where the spent xylene that results from cleaning spray guns (an F003 waste) is mixed with paint sludge produced from the painting scenarios described under questions 1, 2, and 3, the resultant waste stream would be considered an F003 waste (in accordance with the "mixture rule", 40 CFR 261.3

-3-

(a)(2)(iv)).

5. If petroleum naphtha and xylene were used to thin the paint (and the resulting mixture contained >10% xylene by volume), is the paint sludge that results an F003 waste?

As mentioned above, paint sludge resulting from the overspray of thinned paint does not meet the criteria for an F003 waste, since the solvents (in this case, petroleum naphtha and xylene) are ingredients in the formulation of the paint. Thus, the solvent mixture rule does not apply (see 50 FR 53315, December 31, 1985).

6. If the paint sludge that results is properly classified as an F003 waste (because it contains >1% xylene), and it is processed using a distilling device that removes all of the solvent and water from the paint sludge, is the resulting 'cooked' sludge an F003 waste even though it no longer contains solvents? If so, can it be delisted? If the 'cooked' sludge meets the solvent treatment standard of 0.15 mg/1 for xylene, can it be landfilled?

In accordance with the "derived from rule" (40 CFR 261.3(c)(2)), the residue from treatment of a hazardous waste remains a hazardous waste. Thus, assuming the waste stream is properly identified as an F003 spent solvent waste, the "cooked" sludge resulting from distillation of this material remains an F003 hazardous waste and is subject to the applicable land disposal prohibition requirements unless delisted according to the provisions, or rendered non-hazardous (see 40 CFR 261.3(a)(2)(iii)). It should be noted that the delisting procedures require that the petitions address all factors that may cause the waste to be hazardous, not only those for which the waste was originally listed.

Where restricted wastes and the concentrations of their associated hazardous constituents meet the applicable treatment standards, the wastes may be disposed of in a Subtitle C facility. Therefore, if the "cooked" sludge meets the treatment standard established for xylene and does not exceed the treatment standards for any other restricted waste constituents, it may be placed in a hazardous waste land disposal facility.

7. If the water wall and associated tank were removed and replaced with dry filters, and paint containing >10% by volume of xylene was applied to the product, would the waste paint filters be classified as an F003 waste? If the waste paint filters

-4-

contained 0.15 mg/l xylene, would they be classified as an F003 waste?

The waste paint filters described in this scenario would not be properly classified as an F003 waste since the paint residuals would not constitute a spent solvent (refer to the response to question No. 1).

I hope this information adequately addresses your concerns. Please feel free to contact William Fortune, of my staff at (202) 475-6715, if you have any further questions.

Sincerely,

Jacqueline W. Sales, Chief



Supply of Oil-Based Paint Thins as New Rule Takes Effect

A May 24 article on oil-based paints incorrectly described the mission of the Ozone Transport Commission. The OTC was created by the Clean Air Act to help eastern states develop regulations that would reduce ground-level ozone pollution.

(Published 5/25/2005)

By Margaret Webb Pressler May 24, 2005

Carlos Diez felt a little extreme when he stockpiled 1,000 gallons of oil-based house paint last November. But with his stash of the precious glossy dwindling, he's going a bit crazy again, stopping at any store he thinks might have some cans squirreled away.

"I feel like an addict. I went to Strosnidors last week in Bethesda. They had about 40 gallons. I bought all 40 gallons," he said. "I've been talking to everyone. I say, 'You have paint? What color?' If it's a color I think I can use, I buy it."

When his stockpile is gone, he said, "I don't know what I'm gonna do."

What he'll probably do is switch to latex paint, as so many other painters in the area have done because of a new, but largely unpublicized, regulation restricting the sale of oil-based, or alkyd, paint in the mid-Atlantic region. It's a measure aimed at reducing ground-level ozone pollution, but it's one that many consumers and painters were unaware of until oil paint just started vanishing.

"I will have to say that 75 percent of them don't have a clue," about the new rule, said Edgardo Lopez, assistant manager of the Northern Virginia paint store Alexandria Paint Co. "Twenty-five percent have heard a little bit but thought it was a myth."

Similar rules have been in effect for a while in California, and restrictive oil-paint laws are being crafted in many northern states. But the mid- Atlantic region has not made as much progress reducing overall pollution as New England has, so the paint restrictions

kicked in first in this area. Since Jan. 1, stores in the District, Northern Virginia, Maryland, Pennsylvania, Delaware and New York have not been able to order most of the oil-based paints commonly used in household and commercial applications.

Paint stores are allowed to sell the alkyds they had on the shelves when the rule took effect, and some stores piled up their stockrooms in anticipation of the change. But those reserves are slowly depleting, just as painting season arrives.

That has created a burgeoning market for imports -- from southern Virginia, where the restrictions are not in place because the pollution there is not as bad. At the Virginia Paint Co. Benjamin Moore store in Fredericksburg, there has been a spike in oil paint sales.

"It's been growing as they sell out of inventory in Northern Virginia," said Ted Arthur, outside sales representative for the store. "We're starting to see that influx of customers here to get that oil-based product, definitely."

Not all painters are wedded to oil-based paint, as it smells, it's harder to clean up and it dries so hard that it can crack rather than breathe with the typical expansion and contraction that weather can cause. There have also been great strides in the quality of water-soluble latex paint in recent years, in part because manufacturers have known for at least a decade that this regulation was coming. Oil paint accounted for 16.5 percent of the market in 2003, according to the Commerce Department, down from 18 percent in 1997.

Because many painters now use latex, especially for exterior jobs, little information about this change was passed on to painters and consumers.

"This was supposed to be relatively seamless for them," said Christopher Recchia, executive director of the Ozone Transport Commission, an organization created under the Clean Air Act and charged with helping Eastern states develop regulations to prevent further diminishing of the ozone. "For the most part, you can go and buy these products that not only work as well as the other products, but they are environmentally safer."

The problem with oil paints is that as they dry or sit out in the open, they give off volatile organic compounds, or VOCs, that not only make the paint smell but interact with sun and heat to create ozone pollution. Recchia said alkyds create 170,000 tons of emissions a day in the so-called Ozone Transport Region. "It's one of the largest causes of VOC emissions, and it's comparable to some of the industrial plant sources," he said.

The rules do not eliminate VOCs but set such low limits that most products had to be reformulated into latex versions. And a few industrial-use paints, such as those for metal or

roofs, were allowed to stay on the market. But the interior versions most popular with painters are going away. For high-end painters, oil has long been the covering of choice for wood trim and certain other applications.

"We're just not going to be able to do as nice a looking job as previously," said painter Mitchell Fagan, whose jobs include faux painting styles that rely on some of the oils taken off the market. "Once I've used what I've stockpiled, we won't be able to achieve certain looks."

Diez almost waxes poetic about the benefits of oil paint.

"With oil, you walk into the house, it's such a beautiful thing, it's hard to describe," he said.

"Manufacturers claim what they have on the market is just as good as oil. It's not. It's nowhere near."

Other painters say the new products are just as good once you get to know them. But everyone agrees there's simply less to choose from now.

"Probably of the 15 to 20 [products] that were available before, maybe five or six came out to replace them," said Bryan Holland, manager of the Monarch Paint and Wallcovering Co. store on Connecticut Avenue in the District.

Some manufacturers have not done this reengineering willingly. Sherwin-Williams Co., the nation's largest paint maker, filed a lawsuit in Pennsylvania fighting the new laws, which it later dropped, but it still has a suit pending in New York. The company wants an exemption or extension for products it hasn't been able to reformulate, such as the oil-based wood stains sold under the Minwax brand.

"Oil-based stains are in effect being eliminated. Technology is not available to replace those," said Bill Rafie, director of marketing for Sherwin-Williams's commercial segment.

For a while, at least, some painters are looking for ways to beat the system. Quart-size containers have not been eliminated because they are such a small market that they don't pose much of an environmental threat. Some stores report that customers are buying -- at great cost -- four quarts to get a gallon. Others are stockpiling. And still others are getting behind the wheel.

Technically, road-tripping outside the Ozone Transport Region to get your paint fix is illegal, but there's not much enforcement, Recchia said.

Still, some painters don't want to take the risk, so they're just throwing in the towel and using whatever they can buy in the Washington area.

Attachment E

"I've been told the first person who gets caught doing this will wish they were never born," said Terry McEnaney, owner of Just Right Painting Co. in Alexandria. "So I figured I don't want to go through that."

Carlos Quintanilla uses oil-based paint, the sale of which has been restricted in the region since Jan. 1. Few people know about the rule intended to reduce ground-level ozone pollution.

Carlos Quintanilla, left, and Carlos Diez use oil-based paint for a contracting job in the District. Diez bought 1,000 gallons of it before the rule kicked in Jan. 1.

Manager Bryan Holland prepares oil-based paint for a customer at the Monarch Paint and Wallcovering Co. on Connecticut Avenue. The store can sell the oil-based paint it had on hand as of Jan. 1 but cannot order any more.



Latex Paint Recovery in Minnesota: **Paint Composition Analysis & Market/End-Use Study**

December 19, 2018



The Product Stewardship Institute

The Product Stewardship Institute (PSI) is a national, membership-based nonprofit committed to reducing the health, safety, and environmental impacts of consumer products with a strong focus on sustainable end-of-life management. We believe that manufacturers have a responsibility to internalize the costs of safely managing, reusing, and recycling the products they create. When manufacturers assume this responsibility, the result is reduced waste, lower environmental impacts, reduced costs for governments and taxpayers, and job creation. Headquartered in Boston, Mass., PSI takes a unique approach to achieving this vision by facilitating dialogues among diverse stakeholders to jointly develop effective product stewardship policies and programs for a wide array of consumer products. With members from 47 state environmental agencies and hundreds of local governments, and 120 corporate, academic, non-U.S. government, and organizational partners, we work to design, implement, evaluate, strengthen, and promote both voluntary and legislative product stewardship initiatives across North America.

Acknowledgements

PSI prepared this report for the former Solid Waste Management Coordinating Board (SWMCB) and its member counties (Anoka, Carver, Dakota, Hennepin, Ramsey and Washington), and for PaintCare Minnesota, a non-profit 501(c)(3) paint stewardship organization. PSI would like to thank project managers Laura Villa, Household Hazardous Waste Manager for Dakota County Environmental Resources, and Steve Pincuspy, PaintCare Minnesota Program Manager, who oversaw the project. We would also like to thank Stacey Demers and Joshua DeGayner of SCS Engineers, who carried out the recovered paint composition analysis, and David Nightingale of Special Waste Associates, who provided technical expertise. In addition, we would like to thank members of the Advisory Committee who furnished input and guidance: Marty Bergstedt (Amazon Paint), Mannie Cheung (Product Care), Mario Clermont (Laurentide), David Darling (American Coatings Association), Stephanie Edwards (CalRecycle), Fred Gabriel (PaintCare), Jerry Noel (Visions Paint), Joe Rotella (Rhode Island Resource Recovery Corporation), Santosh Sarawgi (GDB International), Jennifer Volkman (Minnesota Pollution Control Agency), and Leslie Wilson (Carver County Department of Environmental Services). Finally, we would like to thank the many inventors, researchers, waste managers, and regulators who agreed to be interviewed or provided data for this project.

Project Contact

For more information, please contact Kristin Aldred Cheek, Senior Associate for Policy and Programs, at kristin@productstewardship.us or (617) 236-8293.

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1. Introduction

Study Aims

The focus of this report is the portion of leftover latex paint collected in Minnesota that *cannot* be reused or processed into recycled-content paint (referred to hereafter as “non-recyclable paint”).

Members of the former six-county Solid Waste Management Coordinating Board of Minnesota (SWMCB; comprised of Anoka, Carver, Dakota, Hennepin, Ramsey, and Washington counties) and PaintCare Minnesota commissioned PSI to study potential markets for the disposition of non-recyclable latex paint. To investigate markets, PSI, along with SCS Engineers and Special Waste Associates (the project team), conducted a two-part study.

The first part, an analysis of recovered paint, investigated the composition of the paint collected at household hazardous waste (HHW) facilities in SWMCB counties. The second part, a market end-use analysis, examined existing and emerging alternatives for recycling leftover paint into other products. Specifically, the aims of the study were to:

- (1) Evaluate the quantity and quality of paint collected at HHW facilities in SWMCB counties;
- (2) Research emerging technologies, end-uses, and markets for non-recyclable latex paint;
- (3) Identify existing and emerging options for recycling paint containers in Minnesota and the Midwest region; and
- (4) Recommend market development options for non-recyclable latex paint and paint containers.

To complete the study, the project team spoke with paint recyclers, innovators using leftover paint for the development of non-paint products, haulers, plastics recyclers, solid waste managers, and others. We used several methods, including interviews and other primary data collection methods, and drew from multiple sources, including online literature and reports.

Report organization

This first section of the report provides background on paint stewardship in Minnesota, data on paint collection and disposition in Minnesota and other PaintCare states, information on paint can disposition in Minnesota, and a description of fees and reimbursements associated with the paint stewardship program.

Section 2 addresses the first aim of the study – to evaluate leftover paint collected in SWMCB counties – and describes a paint characterization study that the project team conducted in four locations. Section 2 also includes latex paint collection data for the SWMCB counties.

Section 3 describes the research PSI conducted to identify emerging technologies and describes potential alternatives for non-recyclable paint that fall into three categories: products currently on the market, development and testing being done with a goal to market a specific product, and products or processes in an early testing stage. Section 3 also includes discussions of local waste-to-energy facilities and state regulations applicable to leftover paint processing and disposition.

Section 3 compares existing alternative technologies based on factors that include their place on the waste management hierarchy, the stage of development, and distance from Minnesota. Given the limited availability of alternatives, Section 4 presents recommendations for improving the paint stewardship program under existing circumstances, as well as recommendations for cultivating future opportunities, including issuing a request for proposals to provide incentive for the development and application of new technologies to turn non-recyclable paint into other recycled products.

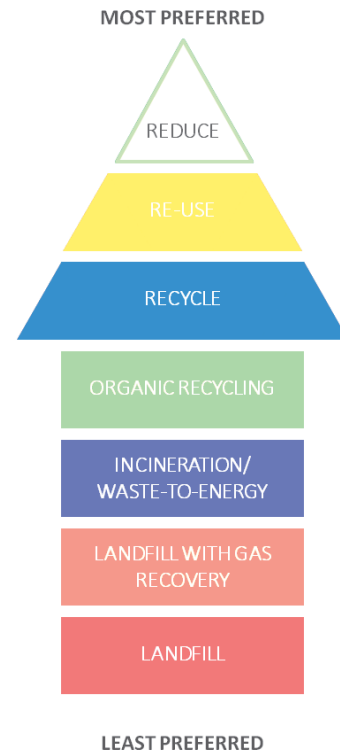
Background: Paint Stewardship in Minnesota

In 1997, SWMCB and the Minnesota Office of Environmental Assistance (now part of the Minnesota Pollution Control Agency, or MPCA) formed a Latex Paint Solutions Task Force with the goals of reducing the amount of waste latex paint generated by residents and ensuring that those who design, produce, sell, and use latex paint assume responsibility for costs associated with managing leftover latex paint. In 2002, the Product Stewardship Institute (PSI) commenced a national Paint Product Stewardship Initiative, which engaged the paint industry in working collaboratively to develop a product stewardship model program for managing all leftover architectural coatings, both latex and oil-based. The model set up a consumer-funded and industry-managed system that stressed paint source reduction, reuse, and recycling. This work led to a model state extended producer responsibility (EPR) bill that has now passed in eight states and the District of Columbia.

With help from Minnesota state and local government representatives, recyclers, and others, the Minnesota Paint Stewardship Law passed in 2013. The paint stewardship program in Minnesota, as in other states, is managed by PaintCare, a 501 (c)(3) organization created by the paint industry to contract with service providers to manage leftover paint generated in Minnesota on behalf of paint manufacturers.

According to the Minnesota Paint Stewardship Law, as part of the Program Plan that PaintCare submits to MPCA for approval, the organization must describe methods to “reuse, deconstruct, or recycle the

FIGURE 1: MINNESOTA WASTE HIERARCHY



discarded paint to ensure that the paint's components, to the extent feasible, are transformed or remanufactured into finished products for use.”¹

A primary intent of the paint stewardship program is to divert leftover paint to uses on the higher end of the waste management hierarchy scale (see Figure 1).² Source reduction – or avoiding leftover paint in the first place – is the most preferred method for waste management, though it can be difficult to achieve. Measuring source reduction can also be difficult due to changes in the economy (e.g., lower sales does not mean source reduction efforts have necessarily been successful). Direct reuse is the next best alternative, followed by converting leftover paint into recycled-content paint, or a bit further down in the hierarchy, another recycled product. The least preferable option is landfill disposal with no energy recovery.

Paint Collection and Disposition in Minnesota

Overall Recovery and Disposition Data

Table 1 shows paint sales, paint collected (total, latex, and oil), and the recovery rate for each of the Minnesota paint stewardship program years.³ In fiscal year 2018 (July 12, 2017 to June 30, 2018), Minnesota paint sales totaled 8,611,435 gallons. PaintCare collected 993,564 gallons of paint, which was equal to 11.5 percent of 2018 sales. Of the approximately one million gallons of paint collected, 807,695 (81%) was latex paint and 185,869 (19%) was oil-based paint. Since the program’s inception, the financial benefit to the state from the management of leftover paint totals an estimated \$20 million.⁴

TABLE 1: GALLONS OF PAINT SOLD AND COLLECTED IN MINNESOTA (FY 2015-18)

	Year 1 FY 2015 (8 months)	Year 2 FY2016 (12 months)	Year 3 FY2017 (12 months)	Year 4 FY 2018 (12 months)
Gallons sold	5,249,053	9,235,688	9,203,140	8,611,435
Gallons collected	501,400	1,022,346	1,010,140	993,564
<i>Latex</i>	395,801	788,051	817,696	807,695
<i>Oil-based</i>	105,599	234,295	192,444	185,869
Percent of sales	9.6%	11.1%	11.0%	11.5%

¹ PaintCare, “Minnesota Architectural Paint Stewardship Program Plan,” 2014, <https://www.pca.state.mn.us/quick-links/paintcare-minnesota-program>

² Minnesota Pollution Control Agency, “Managing waste: Planning and research,” undated, <https://www.pca.state.mn.us/waste/managing-waste-planning-and-research>

³ All paint collection and disposition figures in this section from: PaintCare, “Minnesota Paint Stewardship Program Annual Report, July 1, 2017 - June 30, 2018,” 2018, <https://www.paintcare.org/wp-content/uploads/docs/mn-annual-report-2018.pdf> Note that PaintCare reports figures on a *fiscal year* basis. All reported figures are fiscal year unless otherwise noted.

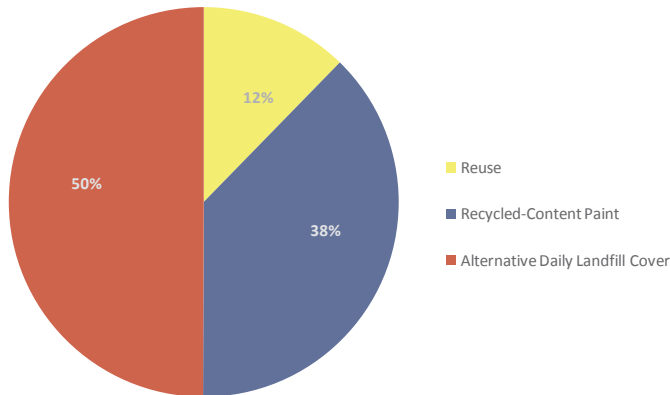
⁴ The financial benefit of the PaintCare program to Minnesota governments is equal to the actual cost of the PaintCare program for Minnesota, or the PaintCare program costs that governments would have incurred to manage the paint.

Table 2 shows statewide latex and oil-based paint disposition for fiscal year 2018. Of the more than 800,000 gallons of *latex* paint collected, 99,316 (12%) was reused in local government-sponsored programs, 304,973 (38%) was manufactured into commercially marketable recycled-content paint, and 403,406 (50%) was applied as alternative daily landfill cover (ADC) (also see Figure 2). For *oil-based* paint, 20,710 (11%) was reused and the remaining 165,159 (89%) was sent to fuel blending facilities (e.g., for use in kilns used in manufacturing cement) or other combustion facilities.

TABLE 2: MINNESOTA STATEWIDE PAINT DISPOSITION (FY 2018)

Disposition	Latex	Oil-Based	Total by Disposition
Reuse	99,316 (12%)	20,710 (11%)	12,026 (12%)
Recycled-content paint	304,973 (38%)	0 (0%)	304,973 (31%)
Fuel blending or combustion	0 (0%)	165,159 (89%)	165,159 (17%)
Alternative daily landfill cover	403,406 (50%)	0 (0%)	403,406 (40%)
Total	807,695	185,869	993,564

FIGURE 2: LATEX PAINT DISPOSITION IN MINNESOTA (FY 2018)



Flow of Recovered Paint

Figure 3 illustrates the flow of recovered paint in Minnesota. Paint collection takes place through HHW facilities and events, at retail locations, through large volume pick-ups, and through Amazon Paint (a latex paint recycler). In fiscal year 2018, HHW programs collected the vast majority of paint, 725,302 gallons (73%). Retail outlets collected another 228,520 gallons (23%) of paint. Large volume pickups (LVPs) (a free pickup service for households or organizations with at least 200 gallons of paint) and direct drop offs to

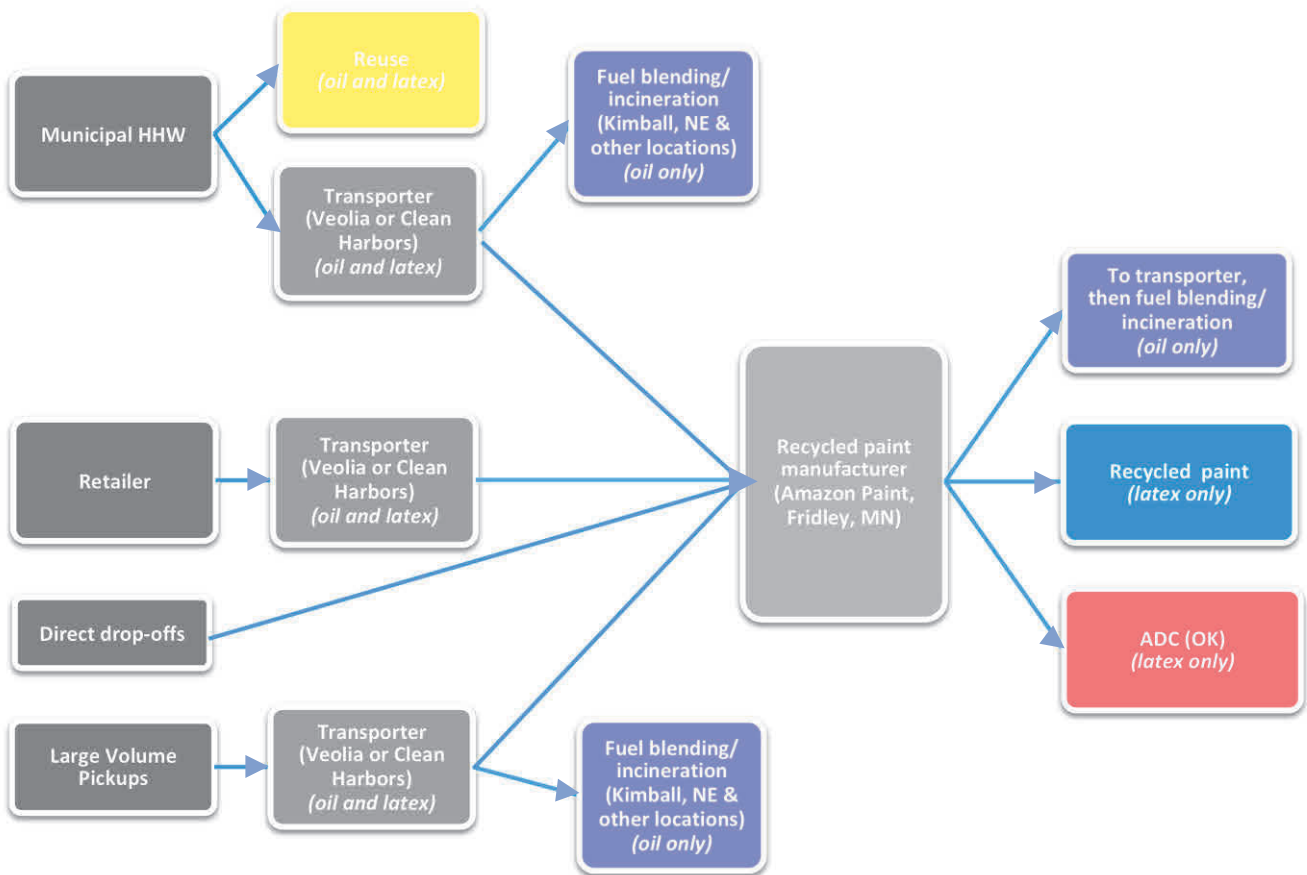
Amazon (at its Fridley, Minnesota facility) by households or organizations each accounted for approximately two percent of the volume of paint collected.

Reuse occurs only at HHW sites, where HHW staff set aside reusable paints for residents to pick up free of charge. The State of Minnesota contracts with a transportation service provider (either Veolia ES Technical Solutions or Clean Harbors Environmental Services) to pick up the remaining paint and deliver the latex paint to Amazon and the oil-based paint to several fuel blending and incineration facilities in the region.

The flow of recovered paint for retail sites and LVPs is similar to that for paint collected at HHW facilities, although there is no reuse of oil or latex paint collected. PaintCare contracts with Veolia and Clean Harbors to transport both commingled paints (retail sites) and separated paints (LVPs). Commingled paints are sent to Amazon, where they are separated. Latex remains at the recycler and oil-based paint is repackaged and shipped to fuel blending and combustion facilities.

The primary subject of this study is the more than 400,000 gallons of latex paint currently being used as ADC, represented in red in Figures 2 and 3.

FIGURE 3: FLOW OF RECOVERED PAINT IN MINNESOTA



Management of Latex Paint Received by Amazon

Amazon Paint received 708,379 gallons of leftover latex paint from the Minnesota PaintCare program in fiscal year 2018. The company was able to process approximately 43 percent of the latex paint they received, or 304,973 gallons, into recycled-content paint. Since 2013, the portion of latex paint Amazon received that it was able to recycle has ranged from 40.5 to 43 percent.

The remaining 57 percent, or 403,406 gallons of latex paint that Amazon received, was shipped to Oklahoma, where the company mixed the paint with lime dust, then delivered it to a nearby landfill for use as ADC. Generally, non-recyclable paint includes dry, semi-dry, and spoiled paint, as well as paint that is difficult to market due to its undesirable color.

Approximately three years ago, Amazon had a contract with a cement plant in Oklahoma to take the non-recycled portion of paint. The cement plant used the paint as a grinding aid (lubricant) on the front end of its process and as an ingredient in cement. However, the cement plant made a business decision to stop accepting paint in 2015, leading Amazon to seek a cost-effective alternative.

Disposition of Latex Paint in all PaintCare States

Table 3 shows latex paint disposition for all PaintCare states in 2017 (the most recent fiscal year for which data is available for all states). Minnesota had the highest reuse rate (approximately 12%), but lagged behind in terms of the percentage of paint that was processed into recycled-content paint. Recycled products other than paint (e.g., decorative ground cover, concrete products) played a very small role in the overall latex paint disposition picture. Minnesota had the lowest overall cost per gallon among the PaintCare states, at \$5.34. Other states ranged from \$6.43 to \$10.68 per gallon.

A variety of latex paint processors receive PaintCare program paint to produce recycled-content paint. Table 4 provides a summary of processors by state.

Note: Data in Table 3 is from PaintCare annual reports (the latest available, either FY 2018 and CY 2017). Percentages for latex disposition (e.g., reuse, recycling, disposal) are based on the amount processed via each method divided by the total amount of latex paint processed within a state's PaintCare program. There are large variations in each state in terms of population, total amount of paint collected, amount collected per capita, amount of paint sold in each state and management methods/end uses available to each state. In addition, factors such as weather and screening of paint for reuse may impact the quantity and quality of leftover paint available for recycling. This report did not conduct a comprehensive comparative analysis of paint condition, quantity and management methods among PaintCare states. Data is presented here solely for illustrative purposes.

TABLE 3: LATEX PAINT DISPOSITION FOR PAINTCARE STATES

	CA	CO	CT	DC	ME	MN	OR	RI	VT	Average ⁵
Paint Processed										
Gallons, latex	3,230,925	552,822	275,089	27,752	98,799	807,695	624,543	64,559	83,517	640,633
Gallons, all paint	3,881,913	724,047	342,350	35,415	129,907	993,564	810,745	84,210	110,567	790,302
Percent recovered (paint managed in program as a % of sales)	5.5%	5.2%	5.9%	3.5%	5.9%	11.5%	8.8%	5.6%	11.1%	6.2%
Reuse, Recycled Products										
Reuse	4%	5%	<1%	<1%	-	12%	7%	-	1%	5%
Recycled paint ⁶	70%	76%	81%	97%	83%	38%	53%	82%	80%	66%
Decorative ground cover (soft rocks)	<1%	<1%	-	-	-	-	-	-	-	0%
Concrete products	6%	-	-	-	-	-	-	-	-	3%
<i>Subtotal</i>	80%	81%	81%	97%	83%	50%	60%	82%	81%	74%
Biodegradation, Energy Recovery, ADC, Disposal										
Biodegradation ⁷	-	-	-	-	-	-	40%	-	-	4%
Energy recovery ⁸	13%	-	4%	-	1%	-	-	-	-	8%
ADC	<1%	2%	-	-	-	50%	-	-	-	7%
Disposal	7%	17%	15%	3%	16%	-	-	18%	19%	7%
<i>Subtotal</i>	20%	19%	19%	3%	17%	50%	40%	18%	19%	26%
Cost										
Per gallon (\$) ⁹	\$8.93	\$7.48	\$9.56	\$9.85	\$9.28	\$5.35	\$6.43	\$9.21	\$7.13	\$8.01

⁵ The calculations for the average percent of paint recovered and the average percent for each disposition account for the size of the programs (i.e., they are weighted averages).
⁶ Recycled paint refers to paint-to-paint recycling (i.e., recycled-content paint).
⁷ In Oregon, leftover latex paint that is not recycled back into paint due to its quality or color is used for biodegradation, a process for extracting gas from landfills.
⁸ A portion of latex paint processed by Amazon in California was combined with sawdust for use as fuel in a cement kiln.
⁹ Cost is inclusive of all costs to operate the program.

9443.1992(03)

RCRA/Superfund/OUST Hotline Monthly Report Question

July 1992

3. Alcohol-Content Exclusion for the Ignitability
Characteristic

A generator produces a wastestream with a flash point of 54 degrees Celsius that contains the following three components: water (77 percent), alcohol (13 percent), and a non-alcoholic liquid component (10 percent). According to the "alcohol exclusion" in 40 CFR §261.21(a)(1), the characteristic of ignitability will not apply to an aqueous solution that contains less than 24 percent alcohol and which has a flash point less than 60 degrees Celsius. Does the presence of a non-alcoholic component cause the aqueous solution to be regulated as an ignitable waste (D001)?

No, the additional non-alcoholic liquid component will not cause the wastestream to be regulated as a D001 waste. Despite the presence of the non-alcoholic liquid component, the wastestream continues to qualify for the alcohol exclusion in 40 CFR §261.21(a)(1). According to the May 19, 1980, Federal Register (45 FR 33108), EPA originally intended for the alcohol exclusion to exempt alcoholic beverages and some types of latex paints, which exhibit low flash points due to the alcohol content, but do not sustain combustion because of the high water content. The alcohol exclusion in 40 CFR §261.21(a)(1), however, is not limited to those wastes mentioned in the May 19, 1980, Federal Register. It applies to all aqueous solutions containing less than 24 percent alcohol, even if additional non-alcoholic components are present. EPA clarified in the June 1, 1990, Federal Register (55 FR 22543) that the term "alcohol" in §261.21(a)(1) refers to any alcohol or combination of alcohols. The Agency notes, however, that if the alcohol is one of those alcohols specified in EPA hazardous waste codes F001-F005 and has been used for its solvent properties, the waste must be evaluated to determine if it should be classified as an F listed spent solvent waste.

The alcohol exclusion for the ignitability characteristic was adopted from the Department of Transportation's (DOT) definition of "combustible liquids" in 49 CFR §173.115(b). The alcohol exclusion

Attachment G

in 49 CFR §173.115(b)(2)(ii) applies to aqueous solutions containing 24 percent or less alcohol by volume which contain no less than 50 percent water. Since EPA originally intended to be consistent with DOT regulations when promulgating the alcohol exclusion in §261.21(a)(1), the 50 percent water stipulation may be applied to the ignitability characteristic. Therefore, as clarified in an internal EPA memorandum, for the purpose of the ignitability characteristic in §261.21(a)(1), "aqueous" means a solution containing at least 50 percent water by weight.

9443.1994(03)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

May 24, 1994

Mr. Mark Veckman
Comprehensive Environmental Assessments
8662H Lee Highway
Fairfax, Virginia 22031

Dear Mr. Veckman:

This letter addresses the questions raised in your Freedom of Information request of March 11, 1994. You requested information on the applicability of information provided in 1990 by EPA Region V to the State of Ohio. The issue centered on the status of wastes generated from abatement of lead-based paint (LBP).

Since the enactment of the Residential Lead Paint Hazard Reduction Act of 1992 requiring the elimination of lead paint hazards to children, there has been a significant increase in the generation of LBP waste. Several federal agencies, States, and advocacy groups have raised concerns about the effect the RCRA hazardous waste management regulations may have on residential LBP abatements. The Agency is currently evaluating various disposal alternatives for LBP waste resulting from abatement, rehabilitation, and demolition. EPA may amend the existing RCRA regulations or may propose different rules governing LBP waste disposal.

In response to your specific request on the applicability of household waste exemption under RCRA to the disposal of LBP waste, we have reviewed the information contained in the September 12, 1990 letter from EPA Region V. Disposal of LBP waste has been subject to RCRA Subtitle C since 1980 and some LBP wastes may be hazardous due to Toxicity Characteristic for lead (see 40 CFR 261.24). In the preamble to a Federal Register notice addressing this issue (49 FR 44998, November 13, 1984, copy enclosed), EPA discusses the limited scope of the RCRA exemption for household wastes. This notice indicates that the EPA Region V letter should be clarified on the following key points.

Household waste, to be excluded pursuant to 40 CFR Section 261.4(b)(1) must fulfill two criteria: first, household waste has to be generated by individuals on the premises of a household and, second, "the waste stream must be composed primarily of materials found in the waste generated by consumers in their homes." LBP waste from construction, demolition, or renovation does not meet these two criteria. Therefore, these wastes are not excluded from RCRA Subtitle C as household waste.

EPA does not distinguish between waste generated at a household by a homeowner and waste generated at a household by a person other than the homeowner (e.g., contractor) provided that the waste is generated as part of daily living (e.g., routine residential maintenance). Under EPA's current reading of the household waste exemption, LBP waste is not similar to the waste typically generated by household (e.g., household trash comprising of discarded consumer goods), and should, therefore, be evaluated for its potential to be RCRA hazardous waste. However, solid waste generated by a homeowner, resident, or a contractor at a home as part of routine residential maintenance (as opposed to building construction, renovation, and demolition) would be part of the household waste stream, and thus would be covered under the RCRA household waste exemption.

LBP waste that is hazardous (i.e., exceeds the toxicity characteristic limit of 5 ppm for lead in waste leachate), is generated in small quantities (i.e., less than 100 kg per month of hazardous waste), may be exempted from RCRA Subtitle C as the conditionally exempted small quantity generator waste, if State programs provide the Federal exemption. Nearly all States are authorized to implement the RCRA program. Therefore, you should contact the State waste management agency where the LBP waste would be generated and disposed, for further assistance in determining the appropriate waste management and disposal requirements.

If you have any other questions on this issue, feel free to call Ms. Rajni Joglekar of my staff at 202-260-3516.

Sincerely,

Michael Shapiro, Director
Office of Solid Waste

Enclosure

cc: Directors, Hazardous Waste Division, EPA Regions I - X
Chief, Ohio Permitting Section, EPA Region V
Mr. E.A. Kitchen, RCRA Technical Assistance Section, OSHWM, Ohio
EPA

HH-1. Households by Type: 1940 to Present
(Numbers in thousands)

For more information about ASEC, including the source and accuracy statement, see the technical documentation accessible at: <https://www.census.gov/programs-surveys/cps/technical-documentation/complete.html>

Year	Family households						Nonfamily households			
	Total households	Total	Married couples	Other family		Total	Male householder	Female householder	Male householder	Female householder
				Male householder	Female householder					
2022	131,202	84,265	61,435	7,212	15,618	46,937	22,716	24,221	23,859	24,244
2021 ^f	129,224	83,711	61,288	6,963	15,461	45,533	21,674	23,859	23,859	24,244
2021	129,931	83,907	61,454	6,963	15,490	46,024	21,781	24,244	23,859	24,244
2020	128,451	83,677	62,342	6,503	14,832	44,774	21,304	23,470	23,470	23,470
2019	128,579	83,482	61,959	6,480	15,043	45,096	21,582	23,515	23,515	23,515
2018	127,586	83,088	61,241	6,424	15,423	44,498	21,017	23,481	23,481	23,481
2017	126,224	82,827	60,804	6,452	15,572	43,396	20,539	22,858	22,858	22,858
2016	125,819	82,184	60,251	6,310	15,622	43,635	20,542	23,093	23,093	23,093
2015	124,587	81,716	60,010	6,162	15,544	42,871	20,143	22,728	22,728	22,728
2014 ^s	123,229	81,353	59,629	6,304	15,420	41,877	19,658	22,219	22,219	22,219
2013	122,459	80,902	59,204	6,229	15,469	41,558	19,747	21,810	21,810	21,810
2012	121,084	80,506	58,949	5,888	15,669	40,578	19,195	21,383	21,383	21,383
2011 ^f	119,927	79,539	58,656	5,648	15,235	40,388	18,968	21,420	21,420	21,420
2011	118,682	78,613	58,036	5,559	15,019	40,069	18,835	21,234	21,234	21,234
2010	117,538	78,833	58,410	5,580	14,843	38,705	18,263	20,442	20,442	20,442
2009	117,181	78,850	59,118	5,252	14,480	38,331	17,694	20,637	20,637	20,637
2008	116,783	77,873	58,370	5,100	14,404	38,910	17,872	21,038	21,038	21,038
2007	116,011	78,425	58,945	5,063	14,416	37,587	17,338	20,249	20,249	20,249
2006	114,384	77,402	58,179	5,130	14,093	36,982	16,753	20,230	20,230	20,230
2005	113,343	76,858	57,975	4,901	13,981	36,485	16,543	19,942	19,942	19,942
2004	112,000	76,217	57,719	4,716	13,781	35,783	16,136	19,647	19,647	19,647
2003	111,278	75,596	57,320	4,656	13,620	35,682	16,020	19,662	19,662	19,662
2002	109,297	74,329	56,747	4,438	13,143	34,969	15,579	19,390	19,390	19,390
2001 ^e	108,209	73,767	56,592	4,275	12,900	34,442	15,345	19,097	19,097	19,097
2000	104,705	72,025	55,311	4,028	12,687	32,680	14,641	18,039	18,039	18,039
1999	103,874	71,535	54,770	3,976	12,789	32,339	14,368	17,971	17,971	17,971
1998	102,528	70,880	54,317	3,911	12,652	31,648	14,133	17,516	17,516	17,516
1997	101,018	70,241	53,604	3,847	12,790	30,777	13,707	17,070	17,070	17,070

1996	99,627	69,594	53,567	3,513	12,514	30,033	13,348	16,685
1995	98,990	69,305	53,858	3,226	12,220	29,686	13,190	16,496
1994	97,107	68,490	53,171	2,913	12,406	28,617	12,462	16,155
1993 ^f	96,426	68,216	53,090	3,065	12,061	28,210	12,297	15,914
1993	96,391	68,144	53,171	3,026	11,947	28,247	12,254	15,993
1992	95,669	67,173	52,457	3,025	11,692	28,496	12,428	16,068
1991	94,312	66,322	52,147	2,907	11,268	27,990	12,150	15,840
1990	93,347	66,090	52,317	2,884	10,890	27,257	11,606	15,651
1989	92,830	65,837	52,100	2,847	10,890	26,994	11,874	15,120
1988 ^a	91,124	65,204	51,675	2,834	10,696	25,919	11,282	14,637
1988	91,066	65,133	51,809	2,715	10,608	25,933	11,310	14,624
1987	89,479	64,491	51,537	2,510	10,445	24,988	10,652	14,336
1986	88,458	63,558	50,933	2,414	10,211	24,900	10,648	14,252
1985	86,789	62,706	50,350	2,228	10,129	24,082	10,114	13,968
1984 ^b	85,290	62,015	50,081	2,038	9,896	23,276	9,689	13,587
1984	85,407	61,997	50,090	2,030	9,878	23,410	9,752	13,658
1983	83,918	61,393	49,908	2,016	9,469	22,525	9,514	13,011
1982	83,527	61,019	49,630	1,986	9,403	22,508	9,457	13,051
1981	82,368	60,309	49,294	1,933	9,082	22,059	9,279	12,780
1980 ^c	80,776	59,550	49,112	1,733	8,705	21,226	8,807	12,419
1980	79,108	58,426	48,180	1,706	8,540	20,682	8,594	12,088
1979	77,330	57,498	47,662	1,616	8,220	19,831	8,064	11,767
1978	76,030	56,958	47,357	1,564	8,037	19,071	7,811	11,261
1977	74,142	56,472	47,471	1,461	7,540	17,669	6,971	10,698
1976	72,867	56,056	47,297	1,424	7,335	16,811	6,548	10,263
1975	71,120	55,563	46,951	1,485	7,127	15,557	5,912	9,645
1974	69,859	54,917	46,787	1,421	6,709	14,942	5,654	9,288
1973	68,251	54,264	46,297	1,432	6,535	13,986	5,129	8,858
1972	66,676	53,163	45,724	1,331	6,108	13,513	4,839	8,674
1971	64,778	52,102	44,928	1,254	5,920	12,676	4,403	8,273
1970	63,401	51,456	44,728	1,228	5,500	11,945	4,063	7,882
1969	62,214	50,729	44,086	1,221	5,422	11,485	3,890	7,595
1968	60,813	50,012	43,507	1,195	5,310	10,801	3,658	7,143
1967	59,236	49,086	42,743	1,190	5,153	10,150	3,419	6,731
1966	58,406	48,399	42,263	1,163	4,973	10,007	3,299	6,708
1965	57,436	47,838	41,689	1,167	4,982	9,598	3,277	6,321
1964	56,149	47,381	41,341	1,204	4,836	8,768	2,965	5,803
1963	55,270	46,872	40,888	1,295	4,689	8,398	2,838	5,560

1962	54,764	46,262	40,404	1,268	4,590	8,502	2,932	5,570
1961	53,557	45,383	39,620	1,199	4,564	8,174	2,779	5,395
1960	52,799	44,905	39,254	1,228	4,422	7,895	2,716	5,179
1959	51,435	43,971	38,410	1,285	4,276	7,464	2,449	5,015
1958	50,474	43,426	37,911	1,278	4,237	7,047	2,329	4,718
1957	49,673	43,262	37,718	1,241	4,304	6,411	2,038	4,374
1956	48,902	42,593	37,047	1,408	4,138	6,309	2,058	4,250
1955	47,874	41,732	36,251	1,328	4,153	6,142	2,059	4,083
1954	46,962	40,998	35,926	1,315	3,757	5,964	1,925	4,039
1953	46,385	40,540	35,577	1,206	3,757	5,845	1,902	3,943
1952	45,538	40,235	35,164	1,119	3,952	5,303	1,757	3,546
1951	44,673	39,502	34,391	1,154	3,957	5,171	1,732	3,439
1950	43,554	38,838	34,075	1,169	3,594	4,716	1,668	3,048
1949	42,182	38,080	33,257	1,197	3,626	4,102	1,308	2,794
1948	40,532	36,629	31,900	1,020	3,709	3,903	1,198	2,705
1947	39,107	34,964	30,612	1,129	3,223	4,143	1,388	2,755
1940 ^d	34,949	31,491	26,571	1,510	3,410	3,458	1,599	1,859

Source: U.S. Census Bureau, Decennial Census, 1940, and Current Population Survey, March and Annual Social and Economic Supplements, 1947 to 2022.

- a Data based on 1988 revised processing.
- b Incorporates Hispanic-origin population controls.
- c Revised using population controls based on the 1980 census.
- d Based on 1940 census.
- e This data is from the expanded CPS sample and uses population controls based on Census 2000.
- r Revised based on population from the most recent decennial census.
- s The 2014 CPS ASEC included redesigned questions for income and health insurance coverage. All of the approximately 98,000 addresses were selected to receive the improved set of health insurance coverage items. The improved income questions were implemented using a split panel design. Approximately 68,000 addresses were selected to receive a set of income questions similar to those used in the 2013 CPS ASEC. The remaining 30,000 addresses were selected to receive the redesigned income questions. The source of data for this table is the CPS ASEC sample of 98,000 addresses.

Note: This table uses the household's person weight to describe characteristics of people living in households. As a result, estimates of the number of households do not match estimates of housing units from the Housing Vacancy Survey (HVS). The HVS is weighted to housing units, rather than the population, in order to more accurately estimate the number of occupied and vacant housing units. If you are primarily interested in housing inventory estimates, then see the published tables and reports here:

<http://www.census.gov/housing/hvs/>. If you are primarily interested in characteristics about the population and people who live in households, then see the H table series and reports here: <https://www.census.gov/topics/families/families-and-households.html>

Note: Details may not sum to total due to rounding.

FOR FURTHER INFORMATION contact:
Fertility and Family Statistics Branch
301-763-2416

Internet Release Date: November 2022

HH-5. Households by Tenure, Race, and Hispanic Origin of the Householder: 1970 to 2014
 (Numbers in thousands)

 For more information about ASEC, including the source and accuracy statement, see the technical documentation accessible at:
<https://www.census.gov/programs-surveys/cps/technical-documentation/complete.html>

Year	All households						White households ^a						Black households ^a						Hispanic households ^a *					
	Tenure			Tenure			Tenure			Tenure			Tenure			Tenure			Tenure			Tenure		
	Total	Owner	Renter ¹	Total	Owner	Renter ¹	Total	Owner	Renter ¹	Total	Owner	Renter ¹	Total	Owner	Renter ¹	Total	Owner	Renter ¹	Total	Owner	Renter ¹			
2014 ^s	123,229	79,603	43,626	98,052	67,732	30,320	16,064	6,868	9,197	15,874	7,238	8,636	117,538	78,779	38,759	27,678	14,730	6,775	7,955	13,298	6,325	6,973		
2013	122,459	79,474	42,986	97,705	67,848	29,857	15,872	6,795	9,077	15,589	7,071	8,517	117,181	78,825	38,356	27,439	14,595	6,774	7,820	13,425	6,418	7,007		
2012	121,084	79,175	41,909	96,964	67,750	29,214	15,583	6,745	8,838	14,939	6,865	8,073	116,783	79,330	37,453	26,768	14,551	6,860	7,691	13,339	6,552	6,786		
2011 ¹	119,927	79,341	40,586	96,306	67,993	28,312	15,265	6,767	8,499	14,435	6,657	7,778	116,011	79,266	36,746	26,450	14,354	6,914	7,440	12,973	6,396	6,577		
2011	118,682	78,573	40,109	96,144	67,736	28,408	15,065	6,659	8,407	13,665	6,359	7,305	114,384	78,330	36,055	25,844	14,002	6,620	7,381	12,519	6,103	6,416		
2010	117,538	78,779	38,759	95,489	67,811	27,678	14,730	6,775	7,955	13,298	6,325	6,973	113,343	78,539	34,804	25,041	13,809	6,784	7,025	12,178	6,003	6,175		
2009	117,181	78,825	38,356	95,297	67,858	27,439	14,595	6,774	7,820	13,425	6,418	7,007	112,000	77,092	34,908	25,280	13,629	6,687	6,942	11,692	5,539	6,153		
2008	116,783	79,330	37,453	95,112	68,344	26,768	14,551	6,860	7,691	13,339	6,552	6,786	111,278	75,909	35,369	25,575	13,465	6,422	7,043	11,339	5,385	5,955		
2007	116,011	79,266	36,746	94,705	68,255	26,450	14,354	6,914	7,440	12,973	6,396	6,577	109,297	74,399	34,897	25,533	13,315	6,414	6,901	10,499	4,984	5,514		
2006	114,384	78,330	36,055	93,588	67,744	25,844	14,002	6,620	7,381	12,519	6,103	6,416	108,209	73,319	34,890	25,677	13,174	6,282	6,893	10,034	4,574	5,460		
2005	113,343	78,539	34,804	92,880	67,838	25,041	13,809	6,784	7,025	12,178	6,003	6,175	104,705	70,370	34,335	25,593	12,849	6,055	6,794	9,319	4,243	5,075		
2004	112,000	77,092	34,908	91,962	66,681	25,280	13,629	6,687	6,942	11,692	5,539	6,153	103,874	69,241	34,633	25,863	12,579	5,723	6,856	9,060	4,096	4,965		
2003	111,278	75,909	35,369	91,645	66,070	25,575	13,465	6,422	7,043	11,339	5,385	5,955	102,528	67,873	34,655	26,056	12,474	5,735	6,739	8,590	3,857	4,733		
2002	109,297	74,399	34,897	90,682	65,149	25,533	13,315	6,414	6,901	10,499	4,984	5,514	101,018	66,356	34,661	26,234	12,109	5,510	6,599	8,225	3,543	4,681		
2001	108,209	73,319	34,890	90,030	64,353	25,677	13,174	6,282	6,893	10,034	4,574	5,460	99,627	65,143	34,484	26,229	11,577	5,085	6,491	7,939	3,274	4,665		
2000	104,705	70,370	34,335	87,671	62,077	25,593	12,849	6,055	6,794	9,319	4,243	5,075	98,990	64,045	34,946	26,287	11,655	4,888	6,767	7,735	3,278	4,457		
1999	103,874	69,241	34,633	87,212	61,350	25,863	12,579	5,723	6,856	9,060	4,096	4,965	97,107	62,374	34,732	26,509	11,281	4,791	6,490	7,362	3,060	4,303		
1998	102,528	67,873	34,655	86,106	60,050	26,056	12,474	5,735	6,739	8,590	3,857	4,733	96,391	62,220	34,171	26,168	11,190	4,726	6,464	6,626	2,654	3,973		
1997	101,018	66,356	34,661	85,059	58,826	26,234	12,109	5,510	6,599	8,225	3,543	4,681	95,669	61,310	34,359	26,558	11,083	4,683	6,400	6,379	2,547	3,832		
1996	99,627	65,143	34,484	84,511	58,282	26,229	11,577	5,085	6,491	7,939	3,274	4,665	94,312	60,395	33,917	26,442	10,671	4,526	6,145	6,220	2,423	3,797		
1995	98,990	64,045	34,946	83,737	57,449	26,287	11,655	4,888	6,767	7,735	3,278	4,457	93,347	59,846	33,501	26,069	10,486	4,445	6,040	5,933	2,443	3,490		
1994	97,107	62,374	34,732	82,387	55,879	26,509	11,281	4,791	6,490	7,362	3,060	4,303	96,391	62,220	34,171	26,168	11,190	4,726	6,464	6,626	2,654	3,973		
1993	96,391	62,220	34,171	82,083	55,915	26,168	11,190	4,726	6,464	6,626	2,654	3,973	95,669	61,310	34,359	26,558	11,083	4,683	6,400	6,379	2,547	3,832		
1992	95,669	61,310	34,359	81,675	55,117	26,558	11,083	4,683	6,400	6,379	2,547	3,832	94,312	60,395	33,917	26,442	10,671	4,526	6,145	6,220	2,423	3,797		
1991	94,312	60,395	33,917	80,968	54,527	26,442	10,671	4,526	6,145	6,220	2,423	3,797	93,347	59,846	33,501	26,069	10,486	4,445	6,040	5,933	2,443	3,490		
1990	93,347	59,846	33,501	80,163	54,094	26,069	10,486	4,445	6,040	5,933	2,443	3,490	92,830	59,419	33,411	25,998	10,561	4,417	6,145	5,910	2,457	3,453		
1989	92,830	59,419	33,411	79,734	53,737	25,998	10,561	4,417	6,145	5,910	2,457	3,453	91,066	58,214	32,852	25,772	10,186	4,323	5,863	5,698	2,292	3,406		
1988	91,066	58,214	32,852	78,469	52,697	25,772	10,186	4,323	5,863	5,698	2,292	3,406												

1987	89,479	57,258	32,221	77,284	51,657	25,627	9,922	4,505	5,417	5,418	2,198	3,220
1986	88,458	56,408	32,050	76,576	51,017	25,559	9,797	4,361	5,436	5,213	2,115	3,098
1985	86,789	55,845	30,943	75,328	50,661	24,667	9,480	4,185	5,295	4,883	2,007	2,876
1984	85,407	55,157	30,250	74,376	50,055	24,321	9,236	4,204	5,032	4,326	1,749	2,576
1983	83,918	54,494	29,423	73,182	49,484	23,698	8,916	4,043	4,873	4,085	1,684	2,402
1982	83,527	56,317	27,210	72,845	51,110	21,735	8,961	4,230	4,731	3,980	1,852	2,128
1981	82,368	55,881	26,487	71,872	50,737	21,135	8,847	4,230	4,618	3,906	1,822	2,085
1980 ^f	80,776	54,891	25,885	70,766	49,913	20,853	8,586	4,173	4,413	3,684	1,753	1,931
1979	77,330	52,283	25,046	68,028	47,751	20,276	8,066	3,887	4,179	3,291	1,514	1,777
1978	76,030	49,398	26,632	66,934	45,291	21,643	7,977	3,553	4,425	3,304	1,408	1,896
1977	74,142	48,083	26,058	65,353	44,148	21,205	7,776	3,431	4,345	3,081	1,302	1,779
1976	72,867	47,408	25,459	64,392	43,628	20,765	7,489	3,313	4,175	2,948	1,259	1,689
1975	71,120	NA	NA	62,945	NA	NA	7,262	NA	NA	NA	NA	NA
1974	69,859	NA	NA	61,965	NA	NA	7,040	NA	NA	NA	NA	NA
1973	68,251	NA	NA	60,618	NA	NA	6,809	NA	NA	NA	NA	NA
1972	66,676	NA	NA	59,463	NA	NA	6,578	NA	NA	NA	NA	NA
1971	64,374	NA	NA	57,575	NA	NA	6,180	NA	NA	NA	NA	NA
1970 ^f	63,401	NA	NA	56,602	NA	NA	6,223	NA	NA	NA	NA	NA

	White Households ^b			Black Households ^b		
	Total	Tenure		Total	Tenure	
		Owner	Renter ^r		Owner	Renter ^r
2014 ^{b, s}	99,734	68,556	31,178	16,821	7,158	9,663
2013 ^b	99,273	68,653	30,620	16,559	7,089	9,471
2012 ^b	98,551	68,579	29,972	16,165	6,998	9,167
2011 ^{b, r}	97,936	68,825	29,110	15,909	7,039	8,871
2011 ^b	97,574	68,491	29,083	15,613	6,897	8,715
2010 ^b	96,823	68,548	28,275	15,212	6,970	8,243
2009 ^b	96,601	68,608	27,993	15,056	6,974	8,082
2008 ^b	96,403	69,069	27,333	14,976	7,026	7,950
2007 ^b	95,946	69,000	26,947	14,709	7,065	7,644
2006 ^b	94,910	68,505	26,406	14,399	6,778	7,622
2005 ^b	94,228	68,620	25,607	14,151	6,932	7,219
2004 ^b	93,196	67,363	25,833	13,969	6,825	7,145
2003 ^b	92,740	66,658	26,082	13,778	6,549	7,229

Source: U.S. Census Bureau, Current Population Survey, March and Annual Social and Economic Supplements, 2014 and earlier.
NA Not available.

- a From 2003 onward, a householder whose race was reported as only one race.
- b From 2003 onward, a householder whose race was reported as only a single race or in combination with one or more other races.
- r Revised based on population from the most recent decennial census.
- s The 2014 CPS ASEC included redesigned questions for income and health insurance coverage. All of the approximately 98,000 addresses were selected to receive the improved set of health insurance coverage items. The improved income questions were implemented using a split panel design. Approximately 68,000 addresses were selected to receive a set of income questions similar to those used in the 2013 CPS ASEC. The remaining 30,000 addresses were selected to receive the redesigned income questions. The source of data for this table is the CPS ASEC sample of 98,000 addresses.

1 The category "Renter" includes those who occupy without cash rent.

* People of Hispanic origin may be of any race.

Note: This table uses a person weight to describe characteristics of people living in households. As a result, estimates of the number of households do not match estimates of housing units from the Housing Vacancy Survey (HVS). The HVS is weighted to housing units, rather than the population, in order to more accurately estimate the number of occupied and vacant housing units. If you are primarily interested in housing inventory estimates, then see the published tables and reports here: <http://www.census.gov/housing/hvs/>. If you are primarily interested in characteristics about the population and people who live in households, then see the H table series and reports here: <https://www.census.gov/topics/families/families-and-households.html>

Note: Details may not sum to total due to rounding.

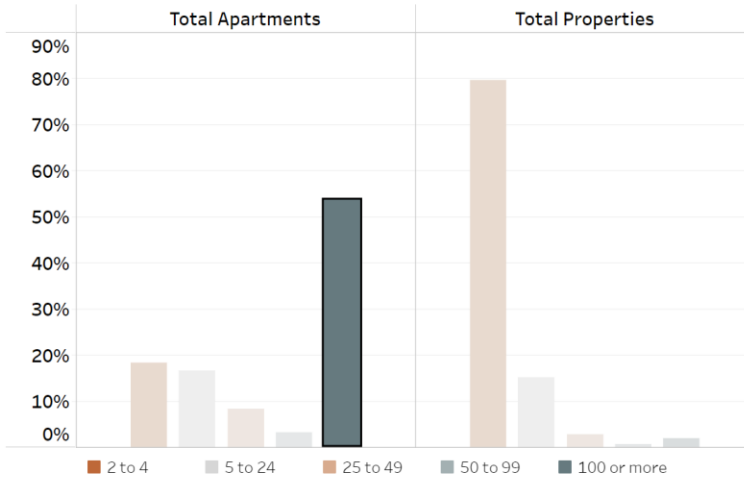
FOR FURTHER INFORMATION contact:
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Internet Release Date: November 2015

Characteristics of Apartment Stock

Characteristics of Apartment Stock includes the occupied apartment stock over time, as well as the distribution of apartments by their size, age, bedrooms and number of units in structure.

Distribution of Apartments by Size of Property



Source: 2021 Rental Housing Finance Survey, U.S. Department of Housing and Urban Development and U.S. Census Bureau. Updated 12/2022.

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Staff Resource →



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More Apartment Stock Data

[Geography of Apartment Stock](#)

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Distribution of Apartments by Size of Property				
Number of Rental Units on Property	Number of Properties (thousands)	% of Total Properties	Number of Apartments (thousands)	% of Total Apartments
2 to 4	2,215	80%	6,065	18%
5 to 24	419	15%	5,470	17%
25 to 49	75	3%	2,725	8%
50 to 99	15	1%	1,055	3%
100 or more	56	2%	17,683	54%
2 or more	2,780	100%	32,998	100%
5 or more	565	20%	26,933	82%

Source: Rental Housing Finance Survey, U.S. Department of Housing and Urban Development and US Census Bureau. Updated 12/2022.



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2018 Commercial Buildings Energy Consumption Survey Building Characteristics Highlights

2018 Commercial Buildings Energy Consumption Survey

Building Characteristics Highlights

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This publication is available at:
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This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data and analyses are independent of approval by any other officer or employee of the United States Government. The views in this report therefore should not be construed as representing those of the U.S. Department of Energy or other federal agencies.

What is the *Commercial Building Energy Consumption Survey (CBECS)*?

CBECS is:

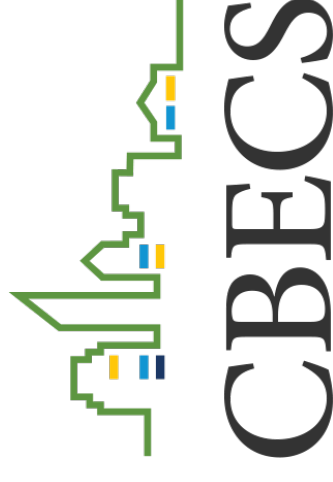
- The only independent, statistically representative source of national-level data on the characteristics and energy use of commercial buildings
- A snapshot of the commercial buildings stock and energy use for the reference year—in this case, 2018
- A sample survey where every commercial building has a known chance of being selected

The U.S. Energy Information Administration (EIA) collects data for commercial buildings in two parts:

- ☒ We collect building characteristics through an in-person or web survey. Respondents, such as building owners and managers, completed the survey at 6,436 buildings for the 2018 CBECS, representing 5.9 million buildings in the United States.
- ☒ We collect energy usage data from suppliers of electricity, natural gas, fuel oil, and district heat.

We have conducted the CBECS periodically since 1979, as required by Congress.

- The 2018 CBECS is the 11th iteration.





Key takeaways from EIA's 2018 CBECS building characteristics results

- Growth in building size continued to outpace increases in building stock; from 2003 to 2018, the number of buildings increased by 22% and total floorspace by 35%.
- Newer buildings were larger, on average, than older commercial buildings.
- Warehouse and storage, office, and service buildings were the most common building types.
- Building types with the largest percentage increase in the number of buildings since 2012 were service, public assembly, lodging, and warehouse and storage.
- Shares of commercial buildings, commercial floorspace, and the U.S. population were highest in the South Census Region.
- Natural gas was the most common space heating energy source, and electricity was the most commonly used energy source overall.
- Out of all types of lighting equipment, only LED lighting use increased since 2012.
- An estimated 2% of commercial buildings had electric vehicle charging stations.

Note: These data are for reference year 2018 and do not reflect the impact of the COVID-19 pandemic. All data referenced in this document is available in the [CBECS building characteristics tables](#). These data supersede the 2018 preliminary data previously published. Unless otherwise noted, all differences are statistically significant at the 10% significance level or lower. A lower significance level indicates a lower likelihood of incorrectly concluding a difference exists between two values when no difference actually exists.

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Attachment M

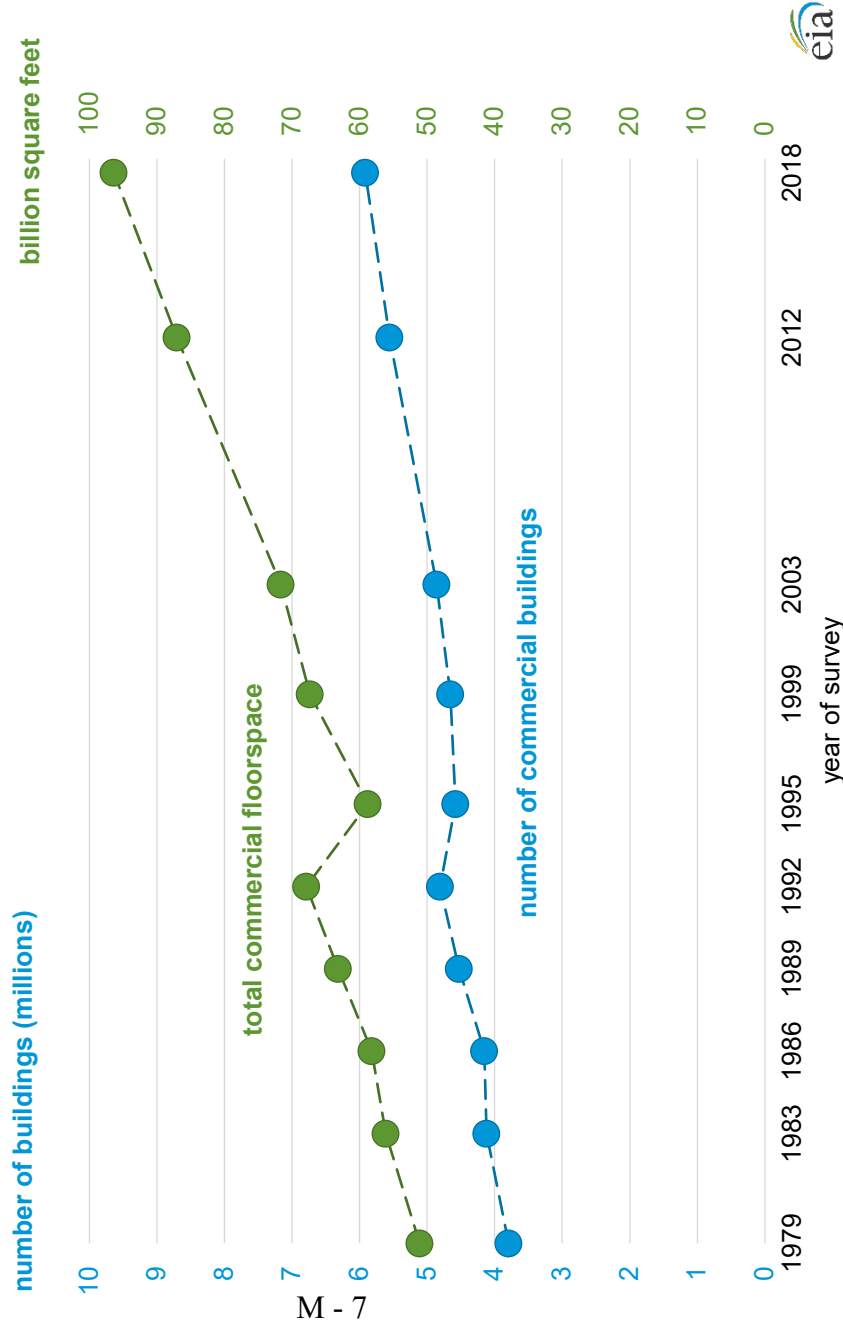
Buildings and Floorspace

The CBECS includes buildings larger than 1,000 square feet for which more than half the floorspace is used for activities that are neither residential, manufacturing, industrial, nor agricultural.

Growth in building size outpaced increases in building stock

Number of commercial buildings and floorspace, 1979–2018

number of buildings (millions) and billion square feet



Source: U.S. Energy Information Administration, Commercial Buildings Energy Consumption Survey



- CBCECS estimates that there were 5.9 million buildings and 96 billion square feet of total commercial floorspace in 2018.
- The CBCECS estimates that over 15 years (from 2003 to 2018), the total number of buildings increased by 22% and total floorspace increased by 35%.
- Total square footage increased by 11% from 2012 to 2018. The increase in number of buildings from 2012 to 2018 was not statistically significant.
- From the first CBCECS in 1979 to the 2018 CBCECS, the number of buildings has increased from 3.8 million to 5.9 million (56%), and the amount of commercial floorspace has increased from 51 billion square feet to 96 billion square feet (89%).

Attachment N



[Skip to sub-navigation](#)

EIA has resumed its regular data publication schedule, but intermittent disruptions to data availability via dashboards, tools, and data browsers on our website will continue as we complete our planned system upgrades.

[◀ Consumption & Efficiency](#)

Commercial Buildings Energy Consumption Survey (CBECS)

About the Commercial Buildings Energy Consumption Survey

The Commercial Buildings Energy Consumption Survey (CBECS) is a national sample survey that collects information on the stock of U.S. commercial buildings, including their energy-related building characteristics and energy usage data (consumption and expenditures). Commercial buildings include all buildings in which at least half of the floorspace is used for a purpose that is not residential, industrial, or agricultural. By this definition, CBECS includes building types that might not traditionally be considered commercial, such as schools, hospitals, correctional institutions, and buildings used for religious worship, in addition to traditional commercial buildings such as stores, restaurants, warehouses, and office buildings.

CBECS is conducted in two phases:

Phase 1 is the Buildings Survey, which collects building characteristics (such as building size and use, structural characteristics, energy sources and uses, and energy-using equipment) and energy usage data (annual consumption and costs) from a respondent at the building, either by an interviewer or using a web questionnaire.

Phase 2 is the Energy Supplier Survey (ESS), which is a follow-up survey of the energy providers for buildings that responded in Phase 1. Providers of electricity, natural gas, heating oil (which includes fuel oil, kerosene, and diesel), and district heat (steam or hot water) supply monthly energy usage data for each building. The energy data are collected using a secure website that offers several reporting options designed to minimize reporting burden.

The first CBECS was conducted in 1979; all CBECS data are available on this website.

Users of the CBECS data are diverse. Among many others, they include:

- Building owners and managers (for benchmarking)
- Energy modelers (for forecasting)
- Product developers (to gauge market potential)
- Government leaders (to formulate policy)
- Energy Star (as the foundation for their rating system targets)

Questions about CBECS may be directed to:

Joelle Michaels
joelle.michaels@eia.gov
Survey Manager

Section 20

Construction and Housing

This section presents data on the construction industry and on various indicators of its activity and costs; on housing units and their characteristics and occupants; and on the characteristics and vacancy rates for commercial buildings. This edition contains data from the 2005 American Housing Survey.

The principal source of these data is the U.S. Census Bureau, which issues a variety of current publications, as well as data from the decennial census. Current construction statistics compiled by the Census Bureau appear in its *New Residential Construction* and *New Residential Sales* press releases and Web site at <http://www.census.gov/const/www/>. Statistics on expenditures by owners of residential properties are issued quarterly and annually in *Expenditures for Residential Improvements and Repairs*. *Value of New Construction Put in Place* presents data on all types of construction. Reports of the censuses of construction industries (see below) are also issued on various topics.

Other Census Bureau publications include the *Current Housing Reports* series, which comprise the quarterly *Housing Vacancies*, the quarterly *Market Absorption of Apartments*, the biennial *American Housing Survey* (formerly *Annual Housing Survey*), and reports of the censuses of housing and of construction industries.

Other sources include the monthly *Dodge Construction Potentials* of McGraw-Hill Construction, New York, NY, which present national and state data on construction contracts; the National Association of Home Builders with state-level data on housing starts; the NATIONAL ASSOCIATION OF REALTORS®, which presents data on existing home sales; the Bureau of Economic Analysis, which presents data on residential capital and gross housing product; and the U.S. Energy Information Administration, which provides data on commercial buildings through its periodic sample surveys.

Censuses and surveys—Censuses of the construction industry were first

conducted by the Census Bureau for 1929, 1935, and 1939; beginning in 1967, a census has been taken every 5 years (through 2002, for years ending in “2” and “7”). The latest reports are part of the 2002 Economic Census. See text, Section 15, Business Enterprise.

The construction sector of the economic census, covers all employer establishments primarily engaged in (1) building construction by general contractors or operative builders; (2) heavy (nonbuilding) construction by general contractors; and (3) construction by special trade contractors. This sector includes construction management and land subdividers and developers. The 2002 census was conducted in accordance with the 2002 North American Industrial Classification System (NAICS). See text, Section 15, Business Enterprise.

From 1850 through 1930, the Census Bureau collected some housing data as part of its censuses of population and agriculture. Beginning in 1940, separate censuses of housing have been taken at 10-year intervals. For the 1970 and 1980 censuses, data on year-round housing units were collected and issued on occupancy and structural characteristics, plumbing facilities, value, and rent; for 1990, such characteristics were presented for all housing units.

The American Housing Survey (*Current Housing Reports* Series H-150 and H-170), which began in 1973, provided an annual and ongoing series of data on selected housing and demographic characteristics until 1983. In 1984, the name of the survey was changed from the Annual Housing Survey. Currently, national data are collected every other year, and data for selected metropolitan areas are collected on a rotating basis. All samples represent a cross section of the housing stock in their respective areas. Estimates are subject to both sampling and nonsampling errors; caution should therefore be used in making comparisons between years.

Data on residential mortgages were collected continuously from 1890 to 1970,

Attachment O

except 1930, as part of the decennial census by the Census Bureau. Since 1973, mortgage status data, limited to single family homes on less than 10 acres with no business on the property, have been presented in the American Housing Survey. Data on mortgage activity are covered in Section 25, Banking and Finance.

Housing units—In general, a housing unit is a house, an apartment, a group of rooms or a single room occupied or intended for occupancy as separate living

quarters; that is, the occupants live separately from any other individual in the building, and there is direct access from the outside or through a common hall. Transient accommodations, barracks for workers, and institutional-type quarters are not counted as housing units.

Statistical reliability—For a discussion of statistical collection and estimation, sampling procedures, and measures of statistical reliability applicable to Census Bureau data, see Appendix III.

Table 961. Construction—Establishments, Employees, and Payroll by Kind of Business (NAICS Basis): 2007 and 2008

[7,268 represents 7,268,000. Covers establishments with payroll. Excludes most government employees, railroad employees, and self-employed persons. Kind-of-business classification based on North American Industry Classification System (NAICS), 2002. For statement on methodology, see Appendix III]

Industry	2002 NAICS code ¹	Establishments		Paid employees ² (1,000)		Annual payroll (mil. dol.)	
		2007	2008	2007	2008	2007	2008
Construction	23	811,452	773,614	7,268	7,044	336,131	333,082
Construction of buildings	236	244,862	232,634	1,672	1,554	83,317	78,273
Residential building construction	2361	198,530	187,327	905	811	39,060	33,807
New single-family housing construction (except operative builders)	236115	61,613	69,206	283	276	11,889	10,675
New multifamily housing construction (except operative builders)	236116	4,373	4,035	47	49	2,466	2,963
New housing operative builders	236117	32,753	23,573	221	176	12,181	9,491
Residential remodelers	236118	99,791	90,513	355	309	12,523	10,678
Nonresidential building construction	2362	46,332	45,307	767	743	44,257	44,466
Industrial building construction	23621	3,963	3,572	97	78	5,057	4,401
Commercial and institutional building construction	23622	42,369	41,735	670	665	39,200	40,065
Heavy and civil engineering construction	237	51,421	48,030	1,016	995	56,607	57,549
Utility system construction	2371	21,448	20,944	525	548	28,284	31,182
Water and sewer line and related structures	23711	13,872	13,269	207	192	10,338	9,929
Oil and gas pipeline and related structures	23712	1,826	1,946	122	157	7,483	10,331
Power and communication line and related structures	23713	5,750	5,729	196	199	10,463	10,923
Land subdivision	2372	12,835	10,814	77	67	3,980	3,369
Highway, street, and bridge construction	2373	11,746	11,509	323	312	19,113	19,123
Other heavy and civil engineering construction	2379	5,392	4,763	92	68	5,230	3,874
Specialty trade contractors	238	515,169	492,950	4,579	4,495	196,207	197,260
Foundation, structure, and building exterior contractors	2381	115,764	108,067	1,103	1,024	42,369	40,354
Poured concrete foundation and structures contractors	23811	26,342	24,663	302	287	12,301	11,559
Structural steel and precast concrete contractors	23812	3,697	3,743	79	84	3,844	4,135
Framing contractors	23813	17,358	15,381	148	107	4,508	3,293
Masonry contractors	23814	27,122	25,022	235	212	8,426	7,742
Glass and glazing contractors	23815	5,584	5,541	55	60	2,472	2,912
Roofing contractors	23816	19,512	18,579	190	180	7,228	7,075
Siding contractors	23817	10,429	9,436	50	45	1,652	1,531
Other foundation, structure, and building exterior contractors	23819	5,720	5,702	45	49	1,938	2,106
Building equipment contractors	2382	187,856	184,132	1,962	2,017	93,655	98,571
Electrical contractors	23821	80,172	78,026	825	860	39,278	41,712
Plumbing, heating, and air-conditioning contractors	23822	100,806	99,190	1,013	1,014	47,154	48,589
Other building equipment contractors	23829	6,878	6,916	124	143	7,223	8,271
Building finishing contractors	2383	134,306	126,100	944	878	35,164	33,075
Drywall and insulation contractors	23831	22,458	21,268	320	291	12,655	11,961
Painting and wall covering contractors	23832	41,457	38,567	234	216	7,973	7,496
Flooring contractors	23833	16,927	16,070	85	80	3,230	3,013
Tile and terrazzo contractors	23834	11,965	11,209	71	68	2,517	2,436
Finish carpentry contractors	23835	34,263	32,054	164	150	5,908	5,383
Other building finishing contractors	23839	7,236	6,932	70	72	2,881	2,786
Other specialty trade contractors	2389	77,243	74,651	570	576	25,019	25,259
Site preparation contractors	23891	41,517	40,689	331	351	14,940	15,798
All other specialty trade contractors	23899	35,726	33,962	239	225	10,079	9,461

¹ North American Industry Classification System code, 2002. 2008 data is based on NAICS 2007; see text, Section 15.

² Employees on the payroll for the pay period including March 12.

Source: U.S. Census Bureau, "County Business Patterns," June 2010, <<http://www.census.gov/econ/cbp>>.

Quantifying the Disposal of Post-Consumer Architectural Paint

April 2007



Quantifying the Disposal of Post-Consumer Architectural Paint

April 2007



Prepared for
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3. National Estimates of Paint Disposal

This section presents estimates of the total quantity of post-consumer architectural paint sent to municipal solid waste (MSW) landfills and incinerators, and collected by household hazardous waste (HHW) programs in the United States. National estimates have been derived based on data from the 5 states discussed in Section 2. The data from these states have been adjusted to account for three key factors (non-architectural paint, container weight, and dried latex paint), as discussed in detail in *Appendix A*. In addition to presenting national estimates of the total amount of post-consumer paint disposed of each year as MSW and HHW, this section also presents estimates of the relative proportion of the discarded paint that is latex versus oil-based. Finally, the quantity of paint disposed of each year is compared with the quantity of paint purchased.

National estimates of the total quantity of paint disposed of each year can be derived in two ways:

-  By using data from each state to individually project to national levels; or
-  By combining data from all the states to generate a pooled estimate.

The first method provides a broad range for the national estimate, based on data for each individual state. Each of the national estimates thus obtained assumes that the individual state estimate can be reasonably projected to the national level. However, states differ in characteristics that can impact the estimated totals. Thus, we also present a national estimate that pools the results for the five states.

The following table presents estimates of the quantity of post-consumer paint disposed by state, based on MSW composition data, HHW collection data, and U.S. Census data on population (all ages included in the counts) and households, for each state and for the nation as a whole. Each state-level estimate is then extrapolated to the national level based on the state's percentage of U.S. population and households. Similar estimates can also be based on sales of architectural coatings; however, state-specific architectural coatings sales data are not available, with the exception of the state of California.

Table 24. Estimated Quantity of Post-Consumer Architectural Paint Disposed Annually in the U.S.

State	Percent of U.S. (%)			Estimated Quantity of Paint Disposed Within State (1,000 Gallons)			Estimated Quantity of Paint Disposed Nationally (1,000 Gallons), Extrapolated Based On:		
	Households	Population	Sales*	HHW Collection	MSW Disposed/ Incinerated	Total	Households	Population	Sales*
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
California	10.91	12.04	13.66	2,036	5,128	7,165	65,698	59,526	52,460
Iowa	1.09	1.04	-	51	334	385	35,312	37,001	-
Oregon	1.26	1.22	-	303	518	821	64,896	67,495	-
Washington	2.15	2.09	-	728	1,426	2,154	100,042	102,859	-
Wisconsin	1.98	1.91	-	143	1,347	1,490	75,372	78,153	-
All States Combined	17.39	18.29	-	3,261	8,753	12,014	69,088	65,678	-

Calculations will not match due to rounding.
Incorporates adjusted state data.

Sources: U.S. Census Bureau, 2000(a); U.S. Census Bureau, 2000(b); CARB, 2003; CIWMB, 2004; data provided by Anna Ward, CIWMB, 2004, IA DNR, 1998; data provided by Theresa Stiner, IA DNR, 2004; OR DEQ, 2002(a); data provided by Peter Spendelow, OR DEQ, 2004(b); OR DEQ, 2002(b); WA ECY, 2003(a), and WA ECY, 2003(b).

Notes: Paint quantities were converted from tons to gallons, assuming an average weight of 10.5 lbs/gallon for latex and 7.5 lbs/gallon for oil-based paint.

Calculations:

A. Based on 105 million households in the U.S. according to U.S. Census Bureau, 2000(a).

B. Based on a population of 281 million in the U.S. according to U.S. Census Bureau, 2000(b).

C. Based on architectural coatings sales of 661 million gallons in the U.S. according to U.S. Census Bureau data (derived, U.S. Census Bureau, 1994-2004). Sales data are not available, except for California, which is for 2000.

D. Quantities of paint collected in HHW programs in this state (quantities were converted from tons to gallons assuming an average weight of 10.5 lbs/gallon for latex and 7.5 lbs/gallon for oil-based paint).

E. Quantities of paint disposed of to landfills or incinerated in the state (quantities were converted from tons to gallons assuming an average weight of 10.5 lbs/gallon for latex and 7.5 lbs/gallon for oil-based paint).

F. Combines paint collected from HHW programs and landfills.

G. National estimate of the quantity of leftover paint extrapolating by percent of households in the state: [F]/[A]

H. National estimate of the quantity of leftover paint extrapolating by percent of population in the state: [F]/[B]

I. National estimate of the quantity of leftover paint extrapolating by percent of architectural coatings sales in California: [F]/[C].

*Architectural coatings sales data are not available, except for California, which is for 2000.

As shown above, when considering each individual state's projection to the national level, the estimated quantity of post-consumer architectural paint disposed of annually in the U.S. ranges between 35 million and 103 million gallons. The pooled estimate provides an estimate of 66 to 69 million gallons of post-consumer architectural paint disposed or incinerated annually in the U.S.

According to the U.S. Census Bureau, architectural paint sales in the U.S. (for data collection and sampling years included in this analysis) ranged from 621 to 809 million gallons. (U.S. Census Bureau, 1994-2004). Using sales data for the year in which the underlying MSW and HHW data were collected for each of the national estimates of paint disposal reflected in Table 24, (and an average if multiple years were used), the total quantity of post-consumer architectural paint disposed was calculated as a percentage of annual architectural paint sales. As presented in Table 25, the annual quantity of architectural paint disposed in the U.S. is estimated to be

approximately 6 to 16 percent of annual sales, based on the projection of the individual state-level estimates to the national level or a pooled estimate of around 10 percent.

Table 25. Percent of Architectural Paint Sold in the U.S. that is Disposed

State	Percent based on:		
	Households	Population	Sales*
California	9.4	8.5	7.5
Iowa	5.7	6.0	
Oregon	9.9	10.3	
Washington	15.2	15.6	
Wisconsin	11.1	11.5	
All States Combined	10.4	9.9	

Sources: U.S. Census Bureau, 2000(a); U.S. Census Bureau, 2000(b); CARB, 2003; CIWMB, 2004; data provided by Anna Ward, CIWMB, 2004, IA DNR, 1998; data provided by Theresa Stiner, IA DNR, 2004; OR DEQ, 2002(a); OR DEQ, 2002(b); data provided by Peter Spendelov, OR DEQ, 2004(b); WA ECY, 2003(a), and WA ECY, 2003(b).

* Architectural coatings sales data not available by state, except for California. California's architectural coatings sales data are for 2000.

Alternative Estimation Methods

Using the same data, this section presents two alternative methods for estimating the total quantity of post-consumer architectural paint sent to MSW landfills and incinerators, and collected by HHW programs in the U.S. In the first method, household data are used to estimate the quantity of paint disposed annually in the U.S., based on a pooling of the estimates developed for the 5 states. The second method uses population data to determine the same.

Table 26A presents the ratio of the total amount of architectural paint that is disposed of as MSW or HHW in the 5 states to the total number of households in these jurisdictions. This ratio (0.65 gallons per household) is then applied to the total number of households in the U.S. (105 million households (U.S. Census Bureau, 2000(a))), resulting in a national estimate of 69 million gallons of post-consumer architectural paint disposed annually.

Table 26A. Gallons of Architectural Paint Disposed Annually Per Household for Five States (Based on the total number of households)

State	Number of Households (1,000s)	Total Leftover Paint (1,000 Gallons)	Gallons per Household
California	11,503	7,163	0.62
Iowa	1,149	385	0.34
Oregon	1,334	821	0.62
Washington	2,271	2,155	0.95
Wisconsin	2,085	1,491	0.72
All Five States	18,342	12,014	0.65

Sources: U.S. Census Bureau, 2000(a); CIWMB, 2004; data provided by Anna Ward, CIWMB, 2004, IA DNR, 1998; data provided by Theresa Stiner, IA DNR, 2004; OR DEQ, 2002; data provided by Peter Spendelow, OR DEQ, 2004(b); WA ECY, 2003(a), and WA ECY, 2003(b).

Similarly, Table 26B presents the ratio of the total amount of paint disposed in the 5 states to the total population (all ages included⁷) in these states. This pooled ratio (0.23 gallons per person) is then applied to the total U.S. population (281 million people (U.S. Census Bureau, 2000(b))), resulting in a national estimate of 65 million gallons of post-consumer architectural paint disposed annually.

Table 26B. Gallons of Architectural Paint Disposed Annually Per Person for Five States (Based on the total population)

State	Population (1,000s)	Total Leftover Paint (1,000 Gallons)	Gallons per Person
California	33,872	7,163	0.21
Iowa	2,926	385	0.13
Oregon	3,421	821	0.24
Washington	5,894	2,155	0.37
Wisconsin	5,364	1,491	0.28
All Five States	51,477	12,014	0.23

Sources: U.S. Census Bureau, 2000(b); CIWMB, 2004; data provided by Anna Ward, CIWMB, 2004, IA DNR, 1998; data provided by Theresa Stiner, IA DNR, 2004; OR DEQ, 2002; data provided by Peter Spendelow, OR DEQ, 2004(b); WA ECY, 2003(a), and WA ECY, 2003(b).

As was done previously in Table 25, we can compare these two national estimates of the amount of post-consumer architectural paint disposed annually to the amount of paint annually sold in the U.S. According to numbers from the U.S. Census Bureau, the estimated total quantity of architectural coatings sold in the U.S. (averaged over the different study years used for the 5

⁷ Another approach would be to use the population age 18 years and older to better reflect the population using paint.

states) was 662 million gallons (derived, U.S. Census Bureau, 1994-2004). Table 27 shows that around 10 percent of this can be estimated to be disposed annually, within the range presented in Table 25.

Table 27. Percent of Architectural Paint Sold in the U.S. that is Disposed

Avg. Annual Quantity of Architectural Paint Sold in the U.S.* (1,000 Gallons)	Estimated Annual Quantity of Architectural Paint Disposed in the U.S. (1,000 Gallons), based on:		Quantity of Architectural Paint Disposed Annually as a Percent of Sales (%)
661,790	Household	69,088	10.4
	Population	65,678	9.9

Source: U.S. Census Bureau

* Averaged over the different study years used for each of the 5 states.

National Estimate Compared with PPSI Estimate

The *PPSI Background Report* provided an estimate of the quantity of leftover paint generated annually in the U.S., based on data from California HHW and Washington MRW (HHW) collection programs, as well as U.S. Census data on population and households in each of the two states and the country as a whole, and an estimate of the percent of the population served by permanent or temporary HHW or MRW collection programs in the two states. The estimate was based on the assumption that existing HHW programs in the two states were collecting between 50 and 100 percent of leftover paint generated by residents served by those programs. The PPSI Background Report estimated the quantity of leftover paint generated in the U.S. to be in the range of 16 million to 35 million gallons per year, or 2.5 to 5 percent of annual paint sales (PPSI 2004a).

The national estimates presented in this report refine the estimate provided in the PPSI Background Report by:

- ✚ Incorporating HHW collection data from three additional states (Iowa, Oregon and Wisconsin);
- ✚ Estimating the actual quantity of paint collected by HHW programs and disposed via the MSW waste stream

4. Conclusions

From the data examined in this report, it is estimated that when considering each of five individual state's projections to the national level, between 35 and 103 million gallons of post-consumer architectural paint (or between 6 and 16 percent of annual sales) is disposed of annually. Further, based on a pooled estimate of these five states, 66 to 69 million gallons of architectural paint are estimated to be disposed of each year. These quantities may not represent all of the leftover paint generated annually in the U.S. Some leftover paint is undoubtedly dried out by consumers outside of the original container, spilled down drains, or disposed of by contractors and large industrial, commercial and institutional users as solid or hazardous waste. On the other hand, there are also factors that may lead to over-estimation of the amount of leftover paint disposed annually. In addition, the estimates presented in this report do not account for the large quantity of leftover paint that is currently stockpiled in homes, nor do they provide a basis for determining if that stockpile is increasing or diminishing over time.

Nevertheless, these estimates may provide a useful measure of the total quantity of post-consumer architectural paint disposed in the U.S. each year, and a rough approximation of the percentage of paint sold each year that becomes leftover post-consumer waste.

List of Rulemaking Petitions in ORCR October 2010

Name/Log No.	Petitioner	Date Requested	Description of Petition	Status/ Last Known Contact
Petition for A Rulemaking Prohibiting The Disposal of Coal Power Plant Wastes in Groundwater and Surface Water (Docket document No. EPA-HQ-RCRA-2006-0796-0011)	Natural Resources Defense Council (NRDC) Hoosier Environmental Council, Inc.; Citizens Coal Council, Inc.; Sierra Club; Clean Water Action; and many others	2/9/04	<p>NRDC seeks to regulate the toxic wastes associated with the exploration, development and production of oil and gas.</p> <p>“Pursuant to 42 U.S.C. Section 6974 (a) of the Resource Conservation and Recovery Act (“RCRA”) and the regulations promulgated there under, the undersigned submit this petition for rulemaking requesting that the Administrator immediately act to protect health and the environment by prohibiting the placement or disposal of power plant waste from the combustion of coal into groundwater and surface water, including manmade waterbodies, until such time as EPA promulgates federally enforceable regulations pursuant to RCRA. The U.S. Environmental Protection Agency (“EPA”) committed to adopting a solid waste regulatory program to address the placement and disposal of coal combustion wastes in its most recent Regulatory Determination issued in May 2000, based upon certain findings and recommendations published in its March 1999 Report to Congress and, until such time as these rules are proposed and adopted, the Petitioners contend that the continuing risks posed by the improper management, re-use and disposal of these industrial solid wastes warrant an immediate regulatory prohibition.”</p>	<p>Agency requested comment on the petition in the coal combustion waste (CCW) NODA (72 FR 49714, 8/29/07). The two NODA comments addressing the petition were a critical assessment of its requirements by CIBO, an industry association, and by USWAG, a utilities' industry trade association. On October 16, 2009, ORCR submitted the proposed preamble and regulation applicable to the management of Coal Combustion Residuals (CCRs) in landfills and surface impoundments for OMB's review. The review is still ongoing. (As of 2/23/10)</p> <p>Alex Livnat, MRWMD/ORCR</p> <p>Jesse Kharbanda, Executive Director Hoosier Environmental Council (HEC).</p>

Name/Log No.	Petitioner	Date Requested	Description of Petition	Status/ Last Known Contact
Petition under 40 CFR 260.20 to remove saccharin and its salts from the lists of hazardous constituents (40 CFR part 261, Appendix VIII), hazardous wastes (40 CFR 261.33(f)), and hazardous substances (40 CFR 302.4)	Calorie Control Council	4/30/03; 5/11/90; and earlier	Petition seeks to remove saccharin and its salts (U202) from the lists of §261.33(f) and §261 Appendix VIII, and from the list of hazardous substances §302.4.	In 2008, GCB briefed the OSW management on the petition. The tiering decision has been approved as Tier 3. WCB held the first workgroup meeting on the proposed rule on 3/10/09. The draft proposal to grant the petition was prepared, reviewed by MRWMD Director, and forwarded to the workgroup for comments on 6/4/09. A workgroup closure meeting was held on 10/20/09. The proposed rule was approved by OD on 11/12/09 and by AA on 11/30/09, and sent to OMB via OPEI for review on 12/16/09. OMB provided comments on 2/12/10. The revised draft of the saccharin proposal based on OMB's comments was sent to OMB on 3/2/10. (As of 3/2/10) Narendra Chaudhari, WCB/MRWMD/ORCR. Lyn O'Brien Nabors, Executive Vice President, Calorie Control Council.
Chromated Copper Arsenate (CCA)	Beyond Pesticides	July 2002	Request that EPA repeal/remove 261.4(b)(9) (exemption from hw regulation for discarded arsenical-treated wood).	Response - Agency has completed groundwater fate-and-transport analysis to evaluate potential risks from disposal of CCA-treated wood in landfills. A peer review was completed in 4/09, we are currently addressing those comments, and once the analysis is revised EPA will determine next steps on addressing petition. (As of 6/4/09)
Site-Specific Risk Assessment (SSRA)	Cement Kiln Recycling Coalition (CKRC)	2/28/02	CKRC asserts that EPA requires SSRAs in violation of the notice and comment	Ross Elliott, WCB/MRWMD/ORCR. 5/15/03 OSW OD sent a memo to Regional RCRA Senior Policy Advisors

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Hazardous Waste Combustion Site-Specific Risk Assessment Petition			rulemaking process required by the Administrative Procedure Act (APA), 5 U.S.C. §§551, <i>et seq.</i> The petition requests that the Agency repeal the SSRA policy and guidance and promulgate them under the APA, if the Agency continues to believe that SSRAs are necessary.	requesting summary information about SSRA decisions. (http://yosemite.epa.gov/osw/rcra.nsf/ea6e50dc6214725285256bf00063269d/8A7324F54654A02385256D2D006F05CF/\$file/14667.pdf)
Spent Petroleum Catalysts	Vandium Producers and Reclaimers Association (VPRA)	August 2001	Land disposal of K171 and/or K172 (spent petroleum refining catalysts) under current regulations does not address various risks. Request that EPA amend the Land Disposal Regulations to address these risks.	No record of any further action taken. Response - Proposed Rule package is completed. Package was about to go to OPEI/OMB when it was sent back to workgroup for another review, which was completed 3/12/09. OGC has recommended waiting for DSW Final Rule issues to be resolved before submitting Spent Petroleum Catalyst to OPEI/OMB. (As of 6/4/09)
Rulemaking Petition of the American Portland Cement Alliance Relating to Cement Kiln Dust.	American Portland Cement Alliance (APCA), now Portland Cement Association (PCA)	5/11/01	Withdraw regulations proposed in 1999 relating to cement kiln dust (CKD) and reverse the regulatory determination issued in 1995.	Ross Elliott, WCB/MRWMD/ORCR. No action taken. The CKD rulemaking decisions are on hold pending the direction of the CCW rulemaking. (As of 2/23/10)
Wastewater Treatment Unit Exemption	Environmental Defense Fund (EDF), Natural Resources Defense Counsel (NRDC), and Louisiana Environmental Action Network (LEAN)	1/7/98	Request that EPA promulgate design and performance standards, and air emission controls, for wastewater treatment units that are currently exempt from such standards.	Jana Englander of MISWD. Response - In a letter dated December 2, 1998, from Elizabeth Cotsworth, Acting Director of OSW to David Lennett, Ms. Cotsworth stated that due to several reasons, including limited resources and complex regulatory issues involving the CWA and CAA, any decision to pursue a rulemaking on WWTUs will have to be balanced against other priorities. (As of 2/25/10) Ross Elliott, WCB/MRWMD/ORCR.

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	Monsanto	4/28/97	Petition requests removal of Triallate (U389) from list of hazardous wastes.	No record of any action taken. Triallate is still listed as U389.
	Mercury Refining Company (MEREKO)	11/6/96	Petition to include mercury thermometers in the Universal Waste Management Program (§273.80).	No record of the petition being addressed. However, 70 FR 45508, 8/5/05, Final Rule adds mercury-containing equipment to the list of universal wastes. [NOTE: MCE includes thermometers, per 70 FR 45513.] [PETITION MOOTED]
	Utilities Solid Waste Activities Group (USWAG), the Edison Electric Institute, the American Public Power Association, and the National Rural Electric Cooperative Association	10/11/96	Petition to include mercury-containing equipment in the Universal Waste Management Program (§273.80).	OSW OD said in a response letter dated 5/29/97 that EPA had no plans to address USWAG's petitions to add mercury-containing equipment, paint, and paint-related wastes to the universal waste rule in 1997 and that the universal waste rule explicitly provided flexibility for states to add other waste categories to their approved state program. However, the petition has since been addressed in 70 FR 45508, 8/5/05. This Mercury-Containing Equipment Final Rule adds mercury-containing equipment to the list of universal wastes.
	Utilities Solid Waste Activities Group (USWAG)	2/6/96	Petition to include "utility access residuals" from utility vaults in the Universal Waste Management Program (§273.80). [NOTE: Per Agency's 5/29/97 letter in response to USWAG's letter of 3/26/97, USWAG's petitions request the addition of the following wastes to the Federal universal waste program: mercury-containing equipment, paint and paint-related wastes, and utility access	[PETITION ADDRESSED] USWAG's 3/26/97 letter expressed its dissatisfaction with the Agency's decision not to act on USWAG's petitions. OSW OD responded on 5/29/97 that "One proposal that we are considering as part of the manifest revisions effort would allow generators to consolidate waste at central locations," and that "Utility access residuals would be covered under this proposal." [NOTE: Proposed manifest revisions

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			<p>residuals.]</p> <p>[Per Rich Lashier of MRWMD/ORCR: Utility Access Residuals were addressed in an "XL" project initiated by Region 2 for New York wastes, and codified at 40 CFR Part 262. There are no current plans to adopt this program nationally.]</p>	<p>(including Form Revisions and E-manifest Revisions) published 5/22/01. Manifest Form Revisions final rule published 3/4/05. E-Manifest Revisions -- notice published 4/18/06 to solicit comment on recommendation for a national system; NODA published 2/26/08; addressing comments (issues regarding CBI and dual paper and electronic systems) and awaiting legislation that will authorize the regulated community to use electronic manifests as the legal equivalent of paper manifests.</p> <p>In addition, 70 FR 45508, 8/5/05, Final Rule adds mercury-containing equipment to the list of universal wastes.] (As of 3/10/10)</p> <p>Rich Lashier and Bryan Groce, MRWMD/ORCR</p>
	<p>New York State Department of Environmental Conservation (NYDEC)</p> <p>Utilities Solid Waste Activities Group (USWAG)</p> <p>Ravenswood Aluminum</p>	<p>1/22/96 12/23/94</p> <p>1/17/96</p> <p>3/14/95</p>	<p>Petition requesting EPA to amend its requirements for hazardous waste transfer facilities (§263.12).</p> <p>Universal Waste Management Program (§273.80).</p> <p>Petition to store used oil in a surface impoundment.</p>	<p>Responded on 3/1/96 to both petitions stating that resources are unavailable at this time. No record of any further action taken.</p> <p>Nature of petition unknown. No record of any action taken.</p> <p>A letter dated 7/22/94 from HWID DD to Ravenswood's attorney said that "assuming the de minimis provision does not apply, Ravenswood cannot legally store or manage used oil in its surface impoundments unless those surface impoundments are operating under a RCRA permit or under interim status."</p>

**KEY FEDERAL AND STATE DEFINITIONS
OF PAINTS OR COATINGS**

OHIO UNIVERSAL WASTE RULE

OAC § 3745-273-09(L)

"Paint" means a pigmented or unpigmented powder coating, or a pigmented or unpigmented mixture of binder and suitable liquid resulting from commercial, industrial, mining, agricultural, and post-consumer activities that upon drying forms an adhering coating on the surface that the paint is applied. Powder coating is a surface coating that is applied as a dry powder and is fused into a continuous coating film through the use of heat.

TEXAS UNIVERSAL WASTE RULE

30 TAC § 335.262(b)

... Paint is a pigmented or unpigmented mixture of binder and suitable liquid which forms a closely adherent coating when spread on a surface. ...

EPA RULES ON VOCs IN PAINTS

40 CFR § 59.401 Definitions.

Coating means a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealants, inks, maskants, and temporary coatings. Protective, decorative, or functional materials that consist only of solvents, acids, bases, or any combination of these substances are not considered coatings for the purposes of this subpart.

EPA AIR RULES FOR MANUFACTURERS OF PAINTS AND ALLIED PRODUCTS

40 CFR § 63.11607

Paints and allied products means materials such as paints, inks, adhesives, stains, varnishes, shellacs, putties, sealers, caulks, and other coatings from raw materials that are intended to be applied to a substrate and consists of a mixture of resins, pigments, solvents, and/or other additives.

DOT HAZARDOUS MATERIAL TRANSPORT RULES

49 CFR § 173.173(a)

... Except as otherwise provided in this part, the description "Paint" is the proper shipping name for paint, lacquer, enamel, stain, shellac, varnish, liquid aluminum, liquid bronze, liquid gold, liquid wood filler, and liquid lacquer base. ...

DEA RULES ON CONTROLLED SUBSTANCES IN PAINTS

21 CFR § 1310.12(d)(2)

Completely formulated paints and coatings: Completely formulated paints and coatings are only those formulations that contain all of the components of the paint or coating for use in the final application without the need to add any additional substances except a thinner if needed in certain cases. A completely formulated paint or coating is defined as any clear or pigmented liquid, liquefiable or mastic composition designed for application to a substrate in a thin layer that is converted to a clear or opaque solid protective, decorative, or functional adherent film after application. Included in this category are clear coats, top-coats, primers, varnishes, sealers, adhesives, lacquers, stains, shellacs, inks, temporary protective coatings and film-forming agents.

CPSC BAN ON LEAD-BASED PAINTS

16 CFR § 1303.2(b)(1)

Paint and other similar surface-coating materials means a fluid, semi-fluid, or other material, with or without a suspension of finely divided coloring matter, which changes to a solid film when a thin layer is applied to a metal, wood, stone, paper, leather, cloth, plastic, or other surface. This term does not include printing inks or those materials which actually become a part of the substrate, such as the pigment in a plastic article, or those materials which are actually bonded to the substrate, such as by electroplating or ceramic glazing.

Coatings Encyclopedic Dictionary

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through films of organic coatings. The films may be free or they may be applied to a porous surface.

water wax see LIQUID WATER EMULSION WAX.¹³⁷

water white (WW) a material that approaches the colorless nature of water; generally applied to colorless TRANSPARENT liquids and solids.^{69,157}

water-based coatings these include LATEX paints, EMULSION paints, and water paints. Coatings in which the volatile content is predominantly water.^{71,155} Syn: WATERBORNE COATINGS and WATER-REDUCIBLE COATINGS

water-based inks inks containing a vehicle whose BINDER is water-soluble or water-dispersible.^{168,155}

water-based paint see WATER PAINT and WATER-BASED COATINGS.^{71,155}

water-break-free the ability of the rinse water to cover the entire surface in an unbroken film.^{158,127} (ASTM)

water-reducible coatings see WATER-BASED COATINGS.⁷¹

water-reducible resins water-soluble types or latices or emulsions. Resins which can be diluted (reduced) with water, water-cosolvent mixtures, and sometimes with alkali (ALKALI-SOLUBLE RESINS).^{155,156}

water-soluble resins in most cases, AMINES and/or cosolvents are required to solubilize these carboxyl-containing resins.^{130,155}

The preferred term is "ALKALI-SOLUBLE RESIN." These systems are generally dispersions of micelles rather than true SOLUTIONS.

waterborne coatings see WATER-BASED COATINGS.⁷¹

watercolor (1) ARTISTS' COLORS in which the PIGMENT has been mixed with GUM as a BINDER;⁴¹ (2) that form of TRANSPARENT water painting in which the white of the PAPER furnishes the lights and in which no white pigment is used during the painting of the picture.^{71,155,81}

waterproofing treatment of a surface or structure to prevent the passage of water under HYDROSTATIC PRESSURE.¹⁴⁷ (ASTM)

wattle gum water-soluble or water-dispersible GUM obtained from the Australian acacia tree.¹⁵⁵

wavelength distance between two successive points of a periodic wave in the direction of propagation in which the oscillation has the same phase; designated as λ in SPECTROPHOTOMETRY.^{43,128,69} See FREQUENCY.^{43,128}

wavy grain GRAIN in which the FIBERS and other longitudinal elements collectively take the form of waves or undulations.¹⁵³ (ASTM)

wax any of various unctuous, VISCOUS, or solid heat-sensitive substances, consisting essentially of high molecular weight HYDROCARBONS or ESTERS of FATTY ACIDS (C₁₆ to C₃₀), characteristically insoluble in water but soluble in most ORGANIC SOLVENTS.¹³⁷

Waxes can be classified as follows: (1) natural; (2) mineral; (3) synthetic; and (4) products of chemical modification of other waxes.

In coatings, waxes can lower the COEFFICIENT of friction, increase block resistance, improve mar resistance, and act as a water vapor barrier. However, they can downgrade intercoat adhesion.

wax-set ink a PRINTING INK designed to SET and DRY instantly upon immersion of the print in a bath of molten WAX.¹⁶⁸

wear cycles in ABRASION RESISTANCE TESTS using the TABER ABRASER, the number of cycles of abrasion required to wear a film of specified thickness through to the test plate under a specified set of test conditions.¹⁵⁷

wear index in ABRASION RESISTANCE TESTS using the TABER ABRASER, it is the loss in weight in milligrams per 1,000 cycles of abrasion under a specific set of test conditions.¹⁵⁷

weather to age, DETERIORATE, DISCOLOR, etc., as a result of EXPOSURE to the weather.^{65,154} (DAC)

weather resistance the ability of a material, paint film, or the like to withstand effects of wind, rain, sun, etc., and retain its APPEARANCE and integrity.^{154,72} (DAC)

Most newly formulated coatings are tested by EXPOSURE to weather for several years before the paint is judged acceptable for specific use.

weather stripping METAL, WOOD, PLASTIC, or other material installed around door and window openings to prevent air infiltration.⁸²

Weather-Ometer an apparatus in which specimen materials can be subjected to artificial and ACCELERATED WEATHERING tests which simulate natural weathering, by the use of controlled cycles of ULTRAVIOLET RADIATION, light, water, and heat.^{65,154,157} See ACCELERATED WEATHERING^{65,57,154,157} and ACCELERATED WEATHERING MACHINE.^{154,65,157} cf. QUV^{154,157,59}

Electric arcs, water spray, and heating elements are used to simulate the natural conditions of sun, rain, and temperature changes.

weatherboarding see SIDING.^{75,179,159}

Words presented in CAP/SMALL CAPS type indicate that the word is defined in another part of the *Coatings Encyclopedic Dictionary*. Numerical superscripts classify terms in one or more of the categories listed in the second section of this volume.

EPA:

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Office of Resource Conservation and Recovery
1200 Pennsylvania Ave., NW (5304T)
Washington DC 20460

Office of Land and Emergency Management: (Circular Economy, waste) (Aerosol Cans)

ORCR Organization

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<https://www.epa.gov/aboutepa/about-office-land-and-emergency-management>

, Office of Land and Emergency Management (5304P), Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460;



Designation: D16 – 19

Standard Terminology for Paint, Related Coatings, Materials, and Applications¹

This standard is issued under the fixed designation D16; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This standard consists of technical terms used in standards under the jurisdiction of ASTM Committee D01 (on Paint and Related Coatings, Materials, and Applications), and of definitions suitable for use in these standards.

NOTE 1—When any definition in this standards is quoted or published out of the context of this standard, editorially insert the following delimiting statement “for paints and related coatings, materials, and applications” after the dash following the term (in the absence of an existing delimiting statement). This will limit the field of application of the term and definition to that approved by this committee.

1.2 In this terminology standard, definitions used in other ASTM standards are indicated by following the definition with the designation of that standard. In some cases, a relevant D01 subcommittee is also listed. Definitions influenced by those used by other organizations are indicated by the acronym of the organization. Primary terms are given in bold, while narrower and unapproved terms are given in italics.

1.3 There are several specialized terminology standards under the jurisdiction of Committee D01, as follows: **D804**, **D1695**, **D6440**, **D6488**, and **D7188**. Few definitions from those standards are included in Terminology D16. Therefore, in searches for definitions of paints and coatings terms, these standards should be included where appropriate.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

- D804** Terminology Relating to Pine Chemicals, Including Tall Oil and Related Products
- D968** Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
- D1475** Test Method for Density of Liquid Coatings, Inks, and Related Products
- D1653** Test Methods for Water Vapor Transmission of Organic Coating Films
- D1695** Terminology of Cellulose and Cellulose Derivatives
- D1729** Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials
- D1736** Test Method for Efflorescence of Interior Wall Paints (Withdrawn 1997)³
- D1848** Classification for Reporting Paint Film Failures Characteristic of Exterior Latex Paints (Withdrawn 2003)³
- D2794** Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- D3450** Test Method for Washability Properties of Interior Architectural Coatings
- D4062** Test Method for Leveling of Paints by Draw-Down Method
- D4209** Practice for Determining Volatile and Nonvolatile Content of Cellulosics, Emulsions, Resin Solutions, Shellac, and Varnishes
- D4366** Test Methods for Hardness of Organic Coatings by Pendulum Damping Tests
- D4958** Test Method for Comparison of the Brush Drag of Latex Paints
- D5146** Guide to Testing Solvent-Borne Architectural Coatings
- D5178** Test Method for Mar Resistance of Organic Coatings
- D6440** Terminology Relating to Hydrocarbon Resins
- D6488** Terminology Relating to Print Problems

¹ This terminology is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.16 on Terminology.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.

lacquers include those based on nitrocellulose, other cellulose derivatives, vinyl resins, acrylic resins, etc.

lake, *n*—a special type of pigment consisting essentially of an organic soluble coloring matter combined more or less definitely with an inorganic base or carrier. It is characterized generally by a bright color and a more or less pronounced translucency when made into an oil paint.

Under this term are included two (and perhaps three) types of pigment: (a) the older original type composed of hydrate of alumina dyed with a solution of the natural organic color, (b) the more modern and far more extensive type made by precipitating from solution various coal-tar colors by means of a metallic salt, tannin, or other suitable reagent, upon a base or carrier either previously prepared or coincidentally formed, and (c) a number combining both types in varying degree might be regarded as a third class.

lap, *n*—(for coatings) the region where one area of a coated surface merges into an adjacent freshly-coated area during application of a single coat to the entire surface.

DISCUSSION—The objective of the painter is to avoid showing the lap.

latex paint—under **paint**, see *latex paint*.

leveling, *n*—(1) the process whereby a film of liquid coating flows out after application so as to minimize any surface irregularities such as brush marks, orange peel, peaks, or craters, that have been produced by the mechanical process of application; (2) a measure or rating of the leveling ability of a coating. **D4062, D01.42**

lightness—under **color of an object**, see *lightness*.

maleic resin—under **resin, synthetic**, see *maleic resin*.

liquid, *n*—(flammability regulations) a substance that has a definite volume but no definite form, except such given by its container. It has a viscosity of 1×10^{-3} to 1×10^3 St (1×10^{-7} to 1×10^{-1} m² s⁻¹) at 104°F (40°C) or an equivalent viscosity at agreed upon temperature. (This does not include powders and granular materials.) Liquids are divided into two classes:

Class A, low viscosity—a liquid having a viscosity of 1×10^{-3} to 25.00 St (1×10^{-7} to 25.00×10^{-4} m² s⁻¹) at 104°F (40°C) or an equivalent viscosity at an agreed upon temperature.

Class B, high viscosity—a liquid having a viscosity of 25.01 to 1×10^3 St (25.01×10^{-4} to 1×10^{-1} m² s⁻¹) at 104°F (40°C) or an equivalent viscosity at an agreed upon temperature.

mar resistance, *n*—(1) ability of a coating to resist visual damage caused by light abrasion, impact, or pressure. (2) resistance of the surface of the coating to permanent deformation resulting from the application of a dynamic mechanical force. **D5178, CED, D01.23**

mass color, *n*—the color, when viewed by reflected light, of a pigment-vehicle mixture of such thickness as to obscure completely the background. Sometimes called over-tone or mass-tone.

mass-tone—see **mass color**.

melamine resin—under **resin, synthetic**, see *melamine resin*.

metal marking resistance, *n*—the ability of a coating to withstand streaking or marking when a metal object is rubbed against or dragged across the surface of the coating.

MFFT, *n*—abbreviation of minimum film forming temperature.

mildew (fungus) resistance, *n*—the ability of a coating to resist fungus growth that can cause discoloration and ultimate decomposition of a coating's binding medium.

mildewstat, *n*—a chemical agent that inhibits the growth of mildew.

mohair paint roller cover, *n*—a cover in which the paint applying material is woven of short-pile velour that contains wool or angora goat hair.

mottling, *vt*—the presence in the surface of a film, of irregularly shaped, randomly distributed areas that vary in color, gloss, or sheen, causing the film to be non-uniform in appearance, also known as **blotching**. **D1848, D01.42**

mud-cracking, *n*—an irregular broken network of cracks in the film, which occurs due to volatile loss while drying or curing. **D1848, D01.42**

natural resin—see **resin, natural**.

natural spreading rate, *n*—the spreading rate that occurs when a coating is applied in a manner natural to the operator's technique, perceptions, and expectations, as they relate to coating tools, substrate, and characteristics of the coating itself.

DISCUSSION—Such a spreading rate can vary widely with the same paint applied under similar conditions by different operators, but a series of paints applied by different operators under the same conditions will tend to have approximately the same rank order.

non-drying oil, *n*—an oil that does not of itself possess to a perceptible degree the power to take up oxygen from the air and lose its liquid characteristics.

nonvolatile content, *n*—the portion of a coating that does not evaporate during drying or curing under specified conditions, comprising the binder and, if present, the pigment. (The percent volatile content is obtained by subtracting the nonvolatile content from 100.)

nonvolatile vehicle, *n*—the liquid portion of a paint excepting its volatile thinner and water.

OEM coatings, *n*—original equipment manufacturers coatings, which include automotive, marine, furniture, appliance, as well as many other miscellaneous consumer and industrial applications.

oil color, *n*—an oil paint containing a high concentration of colored pigment, commonly used for tinting paint.

oil paint—under **paint**, see *oil paint*.

oil varnish—under **varnish**, see *oil varnish*.

opacity, *n*—the degree of obstruction to the transmission of visible light.

In this sense “opacity” is a relative term, it being considered that given a film sufficiently thin, in paint technology at least, there is no absolutely opaque substance.

open time, *n*—length of time a coating remains wet enough to allow for brushing-in at the laps; also called wet edge time.

over-tone—see **mass color**.

paint *vb*—to apply a thin layer of a coating to a substrate by brush, spray, roller, immersion, or any other suitable means.

paint *n*, *general*—a pigmented coating. See **coating**.

paint *n*, *specific*—a classification sometimes employed to distinguish pigmented drying oil coatings (“paints”) from synthetic enamels and lacquers.

emulsion paint—a paint, the vehicle of which is an emulsion of binder in water. The binder may be oil, oleoresinous varnish, resin, or other emulsifiable binder.

latex paint—a paint containing a stable aqueous dispersion of synthetic resin, produced by emulsion polymerization, as the principal constituent of the binder. Modifying resins may also be present.

oil paint—a paint that contains drying oil or oil varnish as the basic vehicle ingredient.

paste paint—a paint in which the pigment is sufficiently concentrated to permit a substantial reduction with vehicle before use.

water paint—a paint, the vehicle of which is a water emulsion, water dispersion, or ingredients that react chemically with water.

paint brush, *n*—a paint application tool consisting of a flexible brushing part composed of long filamentary material (brushing material) bound to a handle.

DISCUSSION—Typical types include designs for varnish, enamel, sash and wall painting. They are manufactured in a range of shapes and sizes.

paint brush bristle, *n*—hair of the swine (for example: pig, hog, boar), used in brushing material.

paint brush ferrule, *n*—outer band that joins the brushing material to the handle.

paint brush filament, *n*—a synthetic polymer extrusion used in brushing material.

paint brush head, *n*—brush without the handle.

paint brush length clear, *n*—also called “length out,” the exposed length of the brushing material from the ferrule to the tip end.

paint brush thickness, *n*—measurement of the brushing material across the narrow opening of the ferrule.

paint pad, *n*—a paint application tool consisting of short filamentary material usually bonded to a flat, resilient backing connected to a handle designed to apply paint by a wiping action.

paint roller, *n*—a complete paint application tool consisting of a roller frame and a roller cover designed to apply paint by a rolling action.

paint roller core, *n*—a structural tube that forms the base of the roller cover to which paint applying material is attached.

paint roller cover, *n*—a tubular sleeve consisting of a paint applying material secured to a core.

paint roller cover pile height, *n*—also called “nap length;” the length of the roller cover paint applying material from pile backing to pile face.

paint roller frame, *n*—a frame and handle assembly designed to hold a roller cover.

paste paint—under **paint**, see *paste paint*.

pendulum hardness tester, *n*—a device for measuring the hardness of a dry film, based on the damping time required for a specified decrease in oscillation (swing) amplitude; the shorter the damping time the lower the hardness. **D4366, D01.23**

penta resin—under **resin, synthetic**, see *penta resin*.

phenolic resin—under **resin, synthetic**, see *phenolic resin*.

picking, *n*—a rolling up in the lap (see *lap*) when the previously applied paint film is in a semisolid (gel-like) state of drying, causing a tacky resistance to the brush or roller and resulting in an unsightly nonuniform appearance in the final dried film.

picture framing, *n*—a perimeter thickness or color difference (usually darker) relative to the rest of the painted surface.

DISCUSSION—This problem could be due to various mechanisms:

(a) *architectural paints*—the greater shear of a brush used around the perimeter of a wall or ceiling compared to the lower shear of a roller used on the rest of the wall or ceiling;

(b) *industrial finishes*—the flow of a finish during baking resulting in the build-up of the coating on the edge of the substrate;

(c) *roofing*—a rectangular pattern of ridges in a membrane over insulation or deck joints.

pigment, *n*—fine solid particles used in the preparation of paint or printing ink and substantially insoluble in the vehicle. Asphaltic materials are not pigments except when they contain substances substantially insoluble in the vehicle in which they are used.

pigment volume, *n*—the percent by volume of pigment in the nonvolatile portion of a paint or printing ink, as calculated from bulking value and composition data. The letters PV are commonly used as an abbreviation.

pinholes, *n*—small pore-like flaws in a coating that extend entirely through the applied film and have the general appearance of pin pricks when viewed by reflected light.

pinholing, *n*—the presence of a series of fine holes or voids in a film. **D1848, D01.42**

plasticizer, *n*—a substance added to paint, varnish, or lacquer to impart flexibility.

polyisocyanate and a polyhydric alcohol ester of vegetable oil acids and are hardened with the aid of metallic soap driers.

Type II, one-package moisture cured—urethane coatings characterized by the presence of free isocyanate groups and capable of conversion to useful films by the reaction of these isocyanate groups with ambient moisture.

Type III, one-package heat cured—urethane coatings that dry on cure by thermal release of blocking agents and regeneration of active isocyanate groups that subsequently react with substances containing active hydrogen groups.

Type IV, two-package catalyst—urethane coatings that comprise systems wherein one package contains a prepolymer or adduct having free isocyanate groups capable of forming useful films by combining with a relatively small quantity of catalyst, accelerator, or crosslinking agent such as a monomeric polyol or polyamine contained in a second package. This type has limited pot-life after the two components are mixed.

Type V, two-package polyol—urethane coatings that comprise systems wherein one package contains a prepolymer or adduct or other polyisocyanate capable of forming useful films by combining with a substantial quantity of a second package containing a resin having active hydrogen groups with or without the benefit of catalyst. This type has limited pot-life after the two components are mixed.

Type VI, one-package nonreactive lacquer—urethane solution coatings characterized by the absence of any significant quantity of free isocyanate or other functional groups. Such coatings convert to solid films primarily by solvent evaporation.

varnish, n—a liquid composition that is converted to a transparent or translucent solid film after application as a thin layer.

bituminous varnish—a dark-colored varnish containing bituminous ingredients. The varnish may be either of the oil or spirit type.

oil varnish—a varnish that contains resin and drying oil as the basic film-forming ingredients and is converted to a solid film primarily by chemical reaction.

shellac varnish—a solution or “cut” of a specified type and grade of dry lac resin in a suitable alcohol. **D4209**

spar varnish—a varnish for exterior surfaces. The name originated from its use on spars of ships.

spirit varnish—a varnish that is converted to a solid film primarily by solvent evaporation.

vehicle, n—the liquid portion of a paint or printing ink. Anything that is dissolved in the liquid portion of a paint or printing ink is a part of the vehicle.

vernonia oil, n—a low-viscosity epoxidized drying oil from the seed of an African plant, *Vernonia galamensis*, containing three reactive epoxy groups and three carbon—carbon double bonds per triglyceride molecule and is characterized by its very low viscosity and melting point.

DISCUSSION—It flows easily even at temperatures below 0°C and thus needs only a fraction of the volatile solvents usually used for other

drying oils. Thus, it can be used as a reactive diluent for high solids alkyds and epoxy coating formulations.

vinyl resin—under **resin, synthetic**, see *vinyl resin*.

volatile thinner—see **thinner**.

volume percent solids, n—the portion of a coating that remains as part of the dry film expressed as percent by volume.

DISCUSSION—This contrasts to another convention of expressing solids content by weight percent. Often a percent is given without specifying whether it is volume or weight. This is confusing and leads to errors in coating calculations.

water-based coating, n—deprecated term. Use the preferred term, **waterborne coating**.

DISCUSSION—The term water-based is common usage but is inappropriate since the water evaporates. (Consider oil-based or alkyd-based in which “-based” indicates a film component). This term should be avoided in favor of *waterborne*.

waterborne coating, n—a coating in which the principal volatile constituent is water. See also **water-reducible coating**.

DISCUSSION—For government regulatory purposes related to the analysis of coatings for VOC and water content, if the volatile constituent contains more than 5 % by weight of water, the coating is arbitrarily classified by the EPA as *waterborne*. For a full explanation refer to: EPA document 450/3-83-013R, “Glossary for Air Pollution Control of Industrial Coating Operations,” EPA, Method 24 (40 CFR PART 60, Appendix A), and ASTM Manual 4 “Determination of VOC Content of Paint, Coatings and Printing Inks.”⁵

water paint—under **paint**, see *water paint*.

water-reducible coating, n—a coating that can be reduced in viscosity by the addition of water. **D01.55**

DISCUSSION—Although all waterborne coatings are water-reducible, the reverse is not true because there are industrial coatings that contain little or no water in their pre-application storage condition, but are reducible with either water or a suitable organic solvent. Thus prior to actual reduction with water, a coating of this type might not strictly be referred to as waterborne, and might never become such. Since the vast majority of water-reducible coatings are waterborne the latter term tends to be used inclusively, unless there is a specific need to make a distinction.

water vapor permeance (WVP), n—the steady state rate of water vapor movement through a free film induced by a vapor pressure difference (Δp) of one unit between the two surfaces of the film, where Δp is expressed in inches or millimetres of mercury. Thus: $WVP = WVT/\Delta p$. See **WVT**.

D1653, CED, D01.23

DISCUSSION—The unit of permeance is the “perm” or the “metric perm,” thus: perm (U.S., inch-pound unit) = grain per square foot per hour per inch of Hg ($\text{gr}/\text{ft}^2 \cdot \text{h} \cdot \text{in}$), metric perm (S.I. unit): = gram per square metre per day per millimetre of Hg ($\text{g}/\text{m}^2 \cdot \text{d} \cdot \text{mm}$).

DISCUSSION—1 perm (U.S.) = 0.659 metric perms.
perm—see water vapor permeance, unit of.

water vapor transmission (WVT) rate, n—the steady state rate of water vapor movement through a free film under specific conditions of temperature and humidity at each surface; customarily expressed in grains per square foot per

⁵ ASTM International, MNL 4.



Vermont Paint Stewardship Program

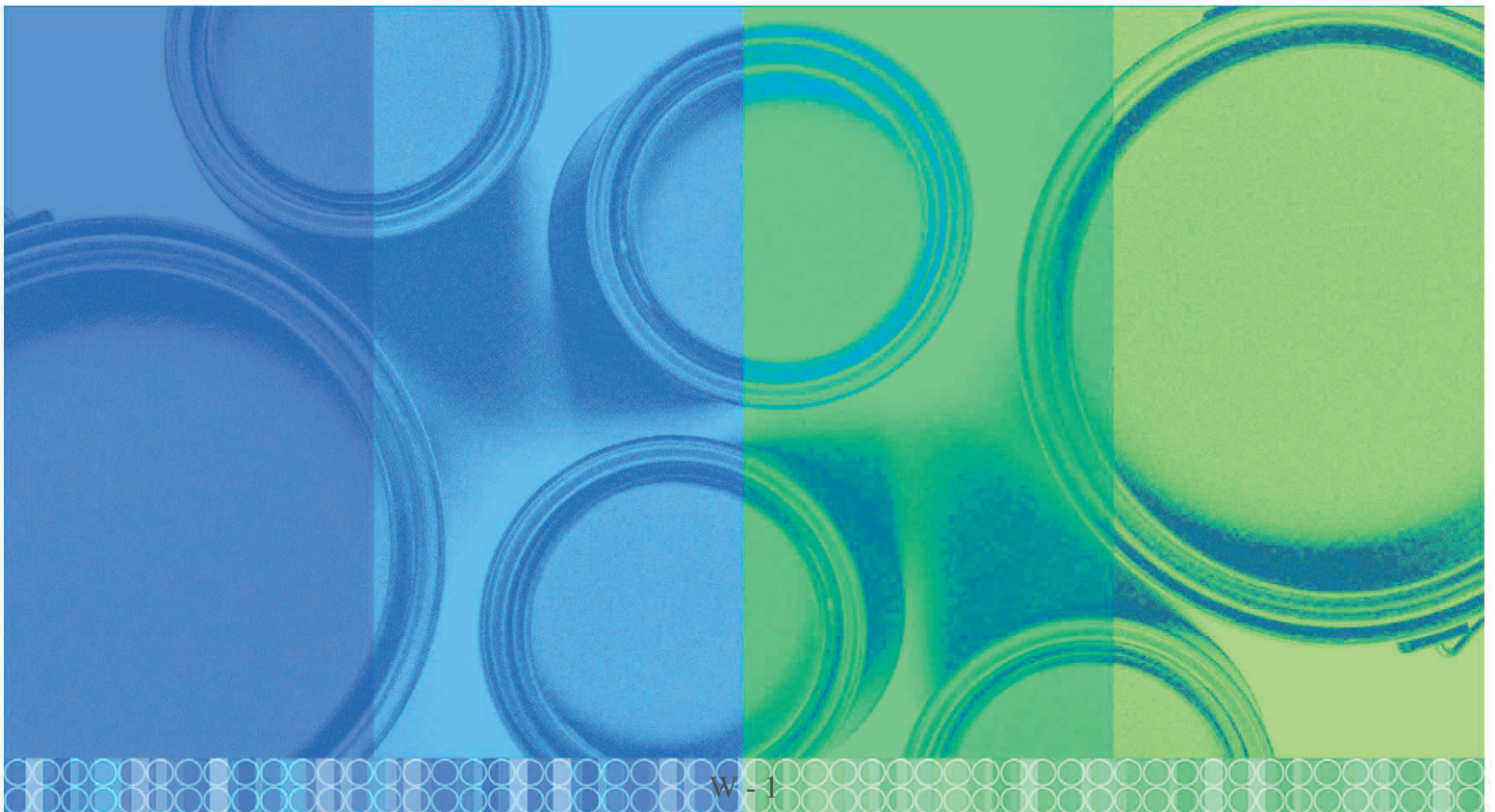
2022 Annual Report

Submitted To

Julie Moore
Secretary
Vermont Agency of Natural Resources
1 National Life Drive, Davis 2, Montpelier, VT 05620

Submitted By

John Hurd, Vermont Program Manager
(802) 245-4821, jhurd@paintcare.org
PaintCare Inc.
901 New York Ave NW, Washington, DC 20001
(855) 724-6809
April 28, 2023



reported as processed in one year may include some paint that was collected at the end of the previous year.

LATEX PAINT PROCESSING METHODS

Method	2020 Gallons	2020 Percent	2021 Gallons	2021 Percent	2022 Gallons	2022 Percent
Reuse	33	<1	28	<1	66	<1
Paint-to-Paint Recycling	57,238	75	60,069	77	64,632	79
Energy Recovery	0	0	21	<1	0	0
Disposal	19,081	25	17,651	23	16,664	21
Total	76,352	100	77,769	100	81,362	100

OIL-BASED PAINT PROCESSING METHODS

Method	2020 Gallons	2020 Percent	2021 Gallons	2021 Percent	2022 Gallons	2022 Percent
Reuse	9	<1	8	<1	9	<1
Paint-to-Paint Recycling	1,869	7	2,492	10	2,342	11
Energy Recovery	21,887	87	21,225	88	19,453	89
Incineration	1,531	6	280	1	0	0
Total	25,296	100	24,005	100	21,804	100

C. LATEX PAINT PROCESSING METHODS AND PROCESSORS

The following methods were used to process latex paint:

Reuse. Latex paint was sold or given away in its original labeled containers without any alteration of the container contents.

Paint-to-Paint Recycling. Latex paint was sorted, blended, and sometimes re-tinted into recycled-content latex paint for local use or domestic or international sale.

Energy Recovery. Latex paint was processed for energy recovery at a waste-to-energy facility.

Disposal. Dry or solidified latex paint was sent to landfill for disposal.



Washington Paint Stewardship Program

2022 Annual Report

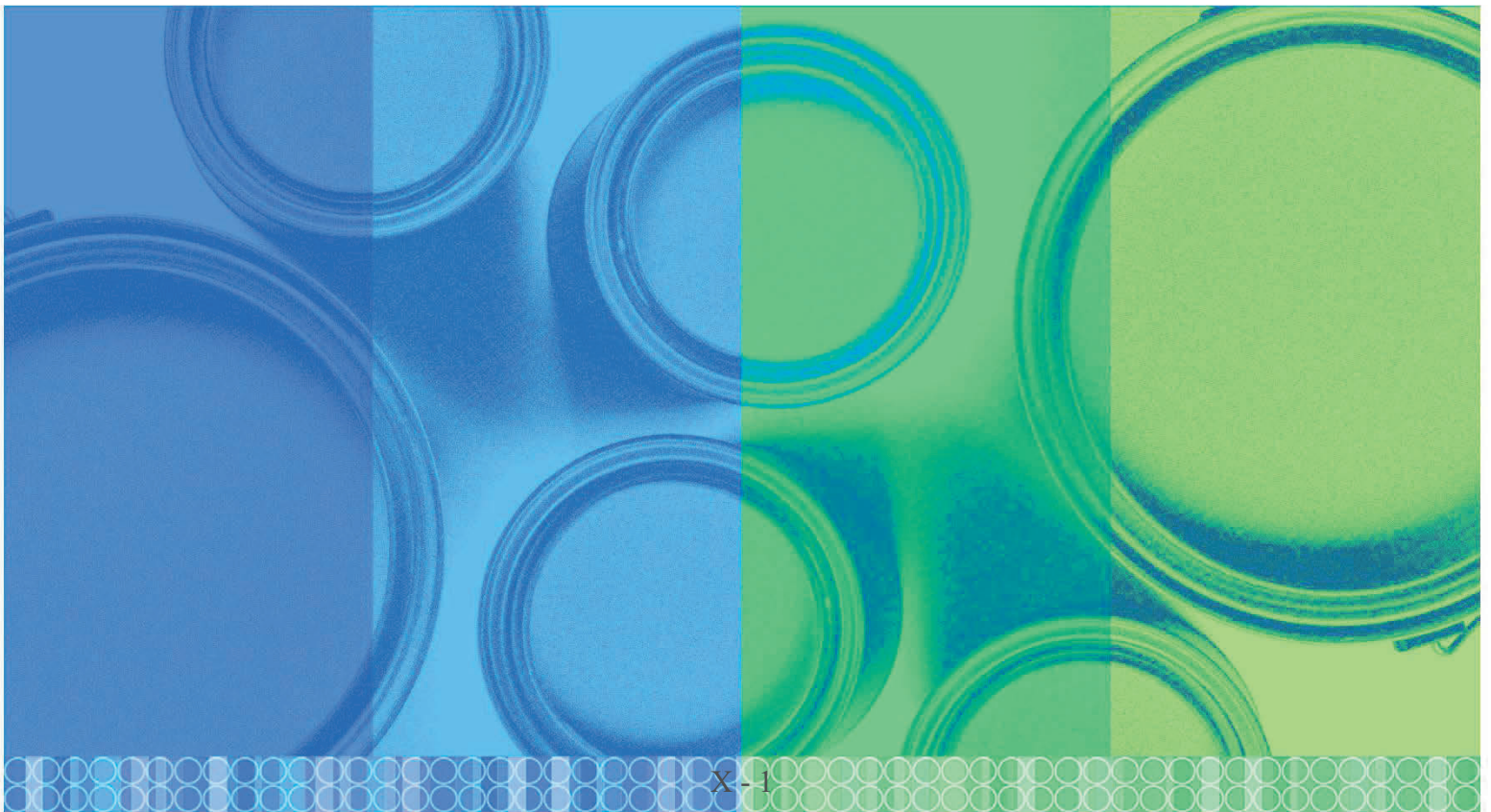
Submitted To

Megan Warfield
Product Stewardship Unit Supervisor
Washington State Department of Ecology
300 Desmond Dr SE, Lacey, WA 98503

Submitted By

Lauren Scher, Washington Program Manager
(503) 410-1648, Ischer@paint.org

PaintCare Washington LLC
901 New York Ave NW, Washington, DC 20001
(855) 724-6809
May 1, 2023



B. PAINT PROCESSING METHODS AND VOLUME

The following tables provide the volumes and paint processing methods for latex and oil-based paint during the year. Descriptions of the processing methods follow the tables. Processed volume differs from collected volume because not all paint is processed in the same year that it is collected; the volumes reported as processed in one year may include some paint that was collected at the end of the previous year. Note that 2021 is for nine months.

LATEX PAINT PROCESSING METHODS

Method	2021 Gallons	2021 Percent	2022 Gallons	2022 Percent
Reuse	6,872	1	9,669	1
Paint-to-Paint Recycling	427,305	88	618,982	85
Disposal	51,173	11	102,181	14
Total	485,350	100	730,832	100

OIL-BASED PAINT PROCESSING METHODS

Method	2021 Gallons	2021 Percent	2022 Gallons	2022 Percent
Reuse	1,034	2	2,224	2
Energy Recovery	38,776	64	85,980	82
Incineration	21,271	35	17,151	16
Total	61,081	100	105,335	100

C. LATEX PAINT PROCESSING METHODS AND PROCESSORS

The following methods were used to process latex paint:

Reuse. Latex paint was sold or given away in its original labeled containers without any alteration of the container contents.

Paint-to-Paint Recycling. Latex paint was sorted, blended, and sometimes re-tinted into recycled-content latex paint for local use or domestic or international sale.

Disposal. Dry or solidified latex paint was sent to landfill for disposal. Some latex paint was also used as alternative daily cover, which is considered disposal in Washington.



California Paint Stewardship Program 2022 Annual Report

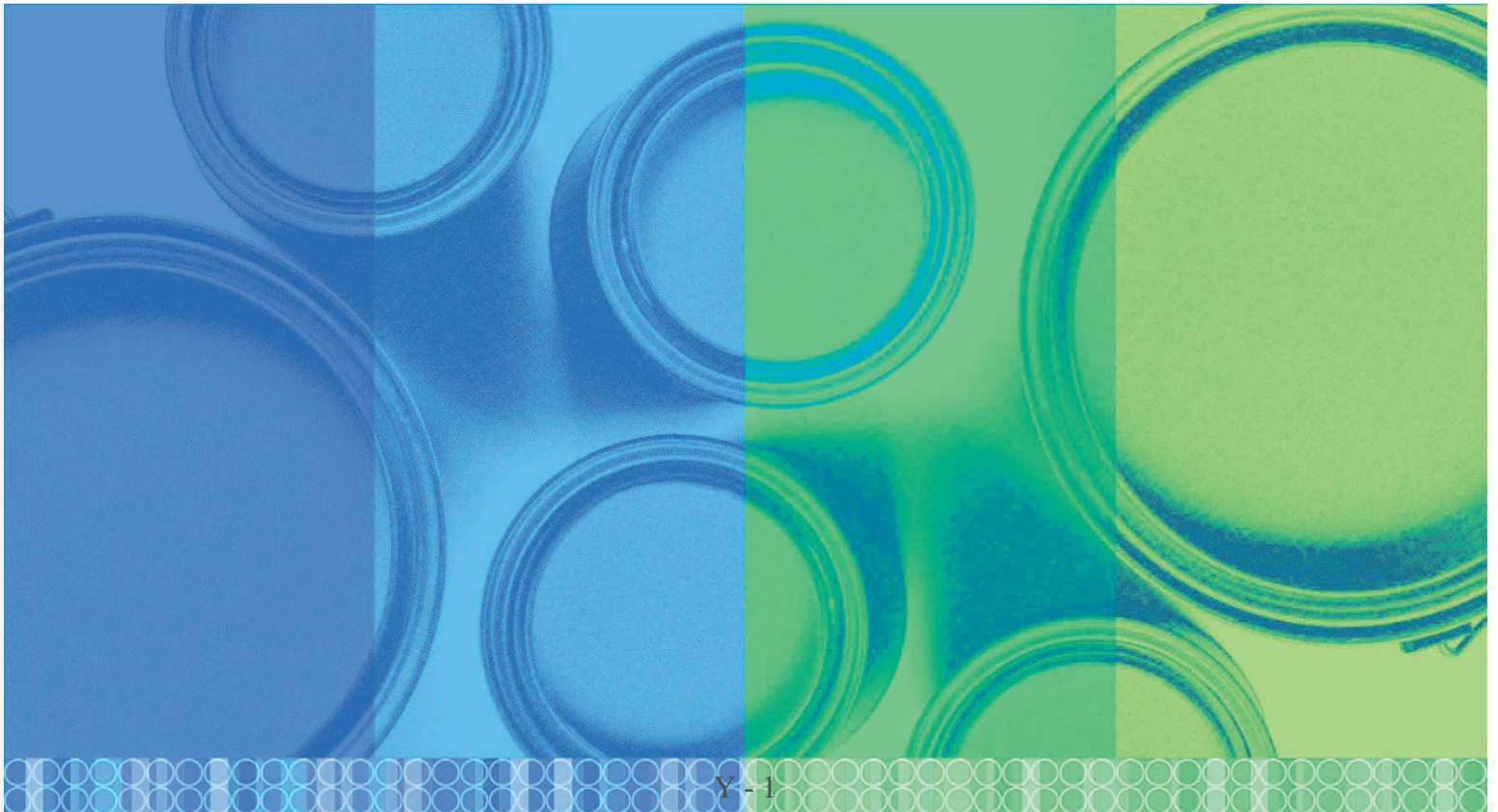
Submitted To

Rachel Machi Wagoner
Director
California Department of Resource, Recovery and
Recycling (CalRecycle)
1001 I St., Sacramento, CA 95814

Submitted By

Terri Marsman, California Program Manager
(209) 404-8625, tmarsman@paint.org

PaintCare Inc.
901 New York Ave NW, Washington, DC 20001
(855) 724-6809
May 15, 2023



A. COLLECTION VOLUME AND RECOVERY RATE

The table below provides the gallons of paint collected, gallons of new paint sales, and the resulting recovery rate. The recovery rate is a ratio of the volume (number of gallons) of paint collected compared to the volume of paint sold in the program during the same time period.

GALLONS COLLECTED, SOLD, AND RECOVERY RATE

Description	2022
Paint Collected (gallons)	3,494,072
New Paint Sold (gallons)	69,639,788
Recovery Rate	5%

PaintCare typically receives reports of gross pounds of paint collected, along with the number of bins or other collection containers from its transporters or drop-off site partners. Gallons of paint collected are calculated by removing the estimated weight of collection bins and paint cans and converting the remaining weight to volume, typically using 10 pounds per gallon for the conversion.

An estimate of gallons collected at each site during the year is included in the appendix.

B. PAINT PROCESSING METHODS AND VOLUME

The following tables provide the volumes and paint processing methods for latex and oil-based paint during the year. Descriptions of the processing methods follow the tables. Processed volume differs from collected volume because not all paint is processed in the same year that it is collected; the volumes reported as processed in one year may include some paint that was collected at the end of the previous year.

LATEX PAINT PROCESSING METHODS

Method	2022 Gallons	2022 Percent
Reuse	219,568	8
Paint-to-Paint Recycling	2,043,057	71
Lightweight Aggregate	154,687	5
Energy Recovery	157,612	5
Alternative Daily Landfill Cover	469	<1
Disposal	307,652	11
Total	2,883,045	100

OIL-BASED PAINT PROCESSING METHODS

Method	2022 Gallons	2022 Percent
Reuse	15,658	4
Energy Recovery	205,683	49
Incineration	196,749	47
Total	418,090	100

C. LATEX PAINT PROCESSING METHODS AND PROCESSORS

The following methods were used to process latex paint:

Reuse. Latex paint was sold or given away in its original labeled containers without any alteration of the container contents.

Paint-to-Paint Recycling. Latex paint was sorted, blended, and sometimes re-tinted into recycled-content latex paint for local use or domestic or international sale.

Lightweight Aggregate. Latex paint was used as a component in lightweight aggregate. The lightweight aggregate was then offered for sale as lightweight aggregate, used to produce landscape products, or used as a component in various precast concrete products.

Energy Recovery. Latex paint was processed for energy recovery at a waste-to-energy facility.

Alternative Daily Landfill Cover. Latex paint was used as a component in alternative daily landfill cover (ADC).

Disposal. Dry or solidified latex paint was sent to landfill for disposal.

LATEX PAINT PROCESSORS

Processor	Location	Process
Acrylatex	1000 W. Kirkwall Rd Azusa, CA 91702	Reuse, Paint-to-Paint Recycling
Amazon	779 Palmyrita Ave Riverside, CA 92507	Paint-to-Paint Recycling
Amazon	5101 Raley Blvd Sacramento, CA 95838	Paint-to-Paint Recycling
Apex Regional Landfill	13550 US Hwy 93 N Las Vegas, NV 89165	Disposal
Cemex	24724 Quarry Rd Victorville, CA 92394	Energy Recovery

July 14, 2017



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 11624
(SEVENTEENTH REVISION)

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: (See individual authorization letter)
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of certain waste paints and paint related materials, Class 8, in metal or plastic pails, packed in cubic yard boxes, plastic rigid wall bulk containers, dump trailers, and roll-off containers. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.
 - c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.173(b)(2) and 173.242 in that inner metal or plastic packagings of not over 7 gallons packed in cubic yard boxes, dump trailers, plastic rigid wall bulk containers, and roll-off containers are not authorized, except as specified herein; § 172.301(a) in that each inner packaging is not marked with the proper shipping name and identification number; § 172.301(c) in that each inner packaging is not marked with the special permit number; and § 172.400(a) in that each inner packaging is not labeled.

July 14, 2017

5. BASIS: This special permit is based on the application of Clean Harbors Environmental Services, Inc., dated November 3, 2012, submitted in accordance with § 107.105, the public proceeding thereon.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Paint or Paint related material (preceded by the word "waste" if applicable)	8	UN3066	II and III

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Inner metal or plastic packagings of not over 7 gallons each, packed in cubic yard boxes, dump trailers, plastic rigid wall bulk containers, and roll-off containers. The cubic yard boxes, dump trailers, plastic rigid wall bulk containers, and roll-off containers must be liquid tight through design or by the use of plastic lining materials.

b. OPERATIONAL CONTROLS -

(i) All packagings inside cubic yard boxes, dump trailers, plastic rigid wall bulk containers, and roll-off containers must be blocked and braced to prevent movement during transportation that could cause the container to open or fall over.

(ii) No leaking containers may be transported under the terms of this special permit, unless overpacked in a UN specification package capable of containing the leakage or in accordance with § 173.12.

c. Only waste materials may be transported under the terms of this special permit.

July 14, 2017

8. SPECIAL PROVISIONS:
- a. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modifications or changes are made to the package and it is reoffered for transportation in conformance with this special permit and the HMR.
 - b. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.
 - c. MARKING - The outside of each yard box, dump trailer, plastic rigid wall bulk containers and roll-off container must be plainly and durably marked with "DOT-SP 11624" at least 2 inches in height.
 - d. The marking requirements for each inner packaging in accordance with § 172.301(a) and (c) are waived.
 - e. LABELING - The labeling of each inner packaging in accordance with § 172.400(a) is waived.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight and cargo vessel.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel or motor vehicle used to transport packages covered by this special permit.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

July 14, 2017

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) - 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for William Schoonover
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Attachment Z

Continuation of DOT-SP 11624 (17th Rev.)

Page 5

July 14, 2017

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO:KFW/NICKS

9432.1990(02)

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

MAR 1 1990

Mr. Christopher J. Jaekels
GSX Government Services, Inc.
P.O. Box 140
902 South Main Street
Saukville, WI 53080

Dear Mr. Jaekels:

This letter is in response to your January 22, 1990 request for clarification of regulations applicable to bulking or containerizing compatible hazardous wastes for transportation. Specifically, you requested EPA's concurrence on your interpretation of the regulations: that bulking and containerizing practices do not constitute fuel blending, and thus, do not require permitting.

Determinations of this type are made by authorized states and EPA regional offices. In some cases authorized states have promulgated applicable regulations that differ from Federal regulations; hence, you should contact the authorized state hazardous waste office. If you need information in an unauthorized state, you may contact the appropriate EPA regional office.

However, for your information, this letter discusses in a general fashion the federal regulations which may apply. First, it is important to distinguish between bulking and containerizing different hazardous wastes for the purpose of efficient transportation and disposal from bulking and containerizing different wastes to product a hazardous waste fuel.

The bulking of characteristic hazardous waste shipments to achieve efficient transportation may result in incidental reduction of the hazards associated with that waste mixture. However, this incidental reduction may not meet the definition of treatment (as defined under 40 CFR Section 260.10) because it is not designed to render the waste nonhazardous or less hazardous. Accordingly, such activity may not require a RCRA permit. For a specific situation a determination is made by the appropriate Regional office or

authorized State based on the particular circumstances, state regulations, and policies.

There is no definition for "fuel blending" in Federal regulations. However, the March 16, 1983 Federal Register (48 FR 11157) discusses the Agency's current enforcement guidance for blenders of hazardous waste fuel. In the preamble, the Agency explains that "waste-derived fuel blenders are responsible for ensuring that low-energy value hazardous waste are not blended into fuels" (48 FR 11159). Therefore, bulking and containerizing of hazardous wastes which are intended to be burned for energy recovery (i.e., "fuel blending") are subject to RCRA jurisdiction. Specifically, a RCRA permitted storage facility consolidating compatible hazardous wastes for the purpose of burning for energy recovery must ensure that the resulting hazardous waste fuel has substantial heat value (i.e., 5,000 to 8,000 Btu) and that each consolidated hazardous waste fuel constituent possesses substantial heat value.

The Agency has clearly stated that the storage requirements of 40 CFR Parts 264 and 265 apply to hazardous waste fuel blending tanks. (See the April 13, 1987 Federal Register 52 FR 11820.) Therefore, unless the fuel blending operations are conducted in units exempt from permitting requirements (e.g., a generator's accumulation tank or container in compliance with standards for less than 90 day storage), these units are subject to RCRA permitting requirements under Federal regulations.

Again, we remind you that the final determination of the regulations that apply at a particular facility is made by the authorized states and EPA regions. Should you have additional questions regarding this letter, please contact Emily Roth of my staff at (202) 475-8551.

Sincerely,

Original Document signed

Sylvia K. Lowrance, Director
Office of Solid Waste

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

EMERGENCY

OFFICE OF
SOLID WASTE AND
RESPONSE

Richard J. Barlow, Chair
Northeast Waste Management Officials' Association (NEWMOA)
129 Portland Street, Suite 601
Boston, MA 02114-2014

Dear Mr. Barlow:

I am pleased to respond to your May 23, 1996 letter, in which you support the State of New York Department of Environmental Conservation rulemaking petition regarding 40 CFR Part 263 relative to the transportation of hazardous waste. I also understand that you have serious concerns about the recent preemption determination by the U.S. Department of Transportation (DOT) which was published on December 6, 1995. (See 60 FR 62527). Specifically, you desire more regulatory oversight than is currently provided by the Resource Conservation and Recovery Act (RCRA) regulations for hazardous waste activities at transfer facilities.

As you know, the recent DOT preemption decision cited in your letter arose from a challenge lodged by the transporter industry against certain New York State regulations pertaining to activities at hazardous waste transfer facilities. Briefly, the State had enacted regulations which, among other things, prohibited certain load mixing activities at transfer facilities, and imposed secondary containment requirements in areas of these facilities reserved for off-vehicle storage. There is no federal counterpart to these state regulations in EPA's Part 263 regulations, and DOT's regulations do not impose similar restrictions. In the decision published in the Federal Register of December 6, 1995, DOT held that each of the challenged State regulations was preempted, because each was inconsistent with the uniform scheme of federal regulation which Congress intended for the control of interstate transportation of hazardous materials.

We are well aware of the long-standing interest of the States in the issues surrounding the regulation of hazardous waste transfer facilities. I also understand that unless and until there are revisions to the federal regulations governing transfer facilities, States which act alone to fill the perceived gaps in the federal RCRA transporter regulations (40 CFR Part 263) are likely to face similar challenges under the strong preemption authorities included by Congress in the 1990 amendments to the Hazardous Materials Transportation act (HMTA).

RO 14135

While I understand the resource issues that States are facing when they are forced to defend the validity of their laws before DOT or the courts, I note that this predicament arises primarily from the manner in which the Congress has allocated responsibility among the federal agencies and the States in the transportation area. The Congress has spoken in fairly unequivocal terms in RCRA 3003(b) that RCRA requirements addressing transporters must be consistent with the HMTA and regulations issued thereunder. The HMTA in turn provides DOT with considerable authority to preempt inconsistent State laws, particularly in certain of the so-called "covered areas" of hazardous materials regulation affected by New York's contested requirements, or, in those instances where inconsistent State laws would pose an obstacle to accomplishing or cat-tying out the HMTA's scheme of regulation. See 49 U.S.C. '5125. These types of strong preemption authorities are quite foreign to RCRA, but they are introduced into the transporter area by the statutory directive in RCRA to maintain consistency with the DOT framework.

On March 1, 1996, the Office of Solid Waste (OSW) stated to Commissioner Zagata of New York that OSW could not at this time commit our scarce federal rulemaking resources to the transfer facility problem without diverting resources from what I believe to be greater priorities for the RCRA program as a whole. This is still true today. However, at such time as our resources and priorities permit, we will revisit the merits of committing resources to resolving the transfer facility concerns. I do, however, appreciate NEWMOA's interest in supporting such a rulemaking.

I would like to be able to respond more positively to your letter at this time, but I know that our state partners understand that in these times, we must allocate our resources and energies judiciously. Thank you for bringing these concerns and suggestions to my attention. We appreciate the efforts of NEWMOA and its state members for their strong support for improving the RCRA program

Sincerely,

Michael Shapiro, Director
Office of Solid Waste

9461.1994(02)

STORAGE OF HAZARDOUS WASTE AT TRANSFER FACILITIES AND THE
AUTHORIZATION OF STATES REGULATING THIS STORAGE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
Office of Solid Waste and Emergency Response

August 17, 1994

Charles Dickhut
Chemical Waste Transportation Institute
4301 Connecticut Avenue, N.W.
Suite 300
Washington, D.C. 20008

Dear Mr. Dickhut,

Thank you for your letter of June 3, 1994, in which you request that EPA clarify and reaffirm its interpretations and policies regarding the storage of hazardous waste at transfer facilities, the authorization of states for provisions regulating this storage, and the preemption of such provisions by the Department of Transportation (DOT) under the Hazardous Materials Transportation Act (HMTA).

In your letter you request that EPA reaffirm specific previous interpretations of the 10-day storage limitation for transfer facilities. RCRA regulations at 40 CFR 263.12 state that "a transporter who stores manifested shipments of hazardous waste in containers meeting the requirements of 262.30 at a transfer facility for a period of ten days or less is not subject to regulation under Parts 270, 264, 265, and 268 of this chapter with respect to the storage of those wastes." These regulations do not restrict the use of multiple transfer facilities for one shipment nor do they place further restrictions on the number of days available at each facility (i.e., they do not limit the total number of days spent at all transfer facilities to 10). Of course, each transfer facility must meet the definition found at 260.10.

A key element of the 260.10 definition is the "normal course of transportation." Storage of manifested shipments of hazardous waste at a transfer facility must be within the normal course of

transportation. As the Agency has stated in the past, EPA can envision situations in which hazardous waste may be stored at one transfer facility for 10 days, and then be stored at a second transfer facility for an additional 10 days, and remain within the normal course of transportation (see the attached June 7, 1990 letter from Sylvia Lawrence to Robert Duprey and the June 22, 1994, letter from Michael Petruska to Kevin Igli).

Your letter also asked for clarification of the phrase "normal course of transportation." The 10-day storage limitation at transfer facilities was based on information provided by the transportation industry, which indicated that shipments of hazardous waste normally take no longer than 15 days, including both the actual transportation and the temporary holding of the shipment (see 45 FR 86966, December 31, 1980). Individual circumstances, however, may prevent shipments from being completed within this time period. EPA believes that what constitutes "the normal course of transportation" depends on the particular facts of each case. Therefore, EPA does not believe it is appropriate to set a generic time limit beyond which a shipment would automatically be outside the normal course of transportation.

You next inquire whether the authorization of a provision affecting the storage of hazardous wastes at transfer facilities under 3006 of RCRA would make that provision no longer subject to preemption under the HMTA because it was "otherwise authorized by Federal law." (See 49 App. U.S.C. 1811(a).) EPA formulated its current position on RCRA state authorization and preemption under the HMTA during the 1992 authorization of California for the base RCRA program. EPA does not believe that it is appropriate to use the RCRA Subtitle C authorization process to make specific determinations of possible preemption under the HMTA. Pursuant to the HMTA, the DOT has established procedures both for making preemption determinations and providing waivers from preemption. A possible issue of preemption under HMTA would not affect the program's eligibility for RCRA authorization where the preemption concern is unrelated to RCRA authorities. (See 57 FR 32726, July 23, 1992, and the attached October 29, 1992, letter from Devereaux Barnes to Cynthia Hilton). Thus, EPA still believes that the RCRA authorization decisions provide no basis for shielding state regulations touching upon hazardous materials transport from possible preemption challenges raised under the HMTA.

Finally, you ask whether EPA has the authority to review a

state's interpretation of an authorized provision. You cite the Arkansas Department of Pollution Control and Ecology's (DPC&E) interpretation of the 10-day transfer facility storage limitation as a cause for concern. According to your letter, the DPC&E enforces a 10-day storage limitation that applies to the total storage time at all transfer facilities, not the storage time at each one. Although EPA has a different interpretation than what you have described for the DPC&E, the state of Arkansas is authorized for the transporter requirements, and thus has primary authority for implementing them. EPA's response to a state's interpretation of an authorized provision would depend on how it was implemented in a particular situation, and factors such as any relevant state court decisions or an enforcement action. EPA is currently not aware of any instance where this differing interpretation has been implemented. Further, EPA believes that the question of whether Arkansas' interpretation deviates from national HMTA transportation standards should be addressed under the HMTA preemption process, rather than through RCRA state authorization.

I hope that this clarification is of assistance to you. Further guidance regarding the issues you have raised may be available in the future, as a result of EPA discussions with DOT. If you have further questions regarding the authorization of states for the regulation of hazardous waste transporters and transfer facilities, please contact Wayne Roepe of my staff at 703-308-8630. If you have further questions regarding the EPA regulations regarding the transportation of hazardous waste, please contact Ann Codrington of my staff at 202-260-4777.

Sincerely,

Michael Shapiro, Director
Office of Solid Waste

Attachments

June 3, 1994

Michael Shapiro
Assistant Administrator for
Solid Waste and Emergency Response
OS-100
U.S. Environmental Protection Agency
401 "M" St, S.W.
Washington, D.C. 20460

Dear Mr. Shapiro:

On behalf of the Chemical Waste Transportation Institute (CWTI), I thank you for your timely reply to our letter of April 27, 1994 concerning EPA's interpretation of the 40 CFR 263.12 ten day limitation on storage at transfer facilities (see footnote 1). We are compelled to write again because it did not respond substantively to all our concerns.

The CWTI is a not-for-profit association that represents companies that transport hazardous waste throughout the United States and Canada, and in Mexico.

In retrospect, we can see how your staff would have read our letter as a request to evaluate the Arkansas Department of Pollution Control and Ecology (DPC&E) authorized program pursuant to RCRA Section 3006 in terms of its administration of the 10-day transfer facility storage rule. In fact, our request concerning an interpretation of Section 3006 was only one of four related issues raised in our letter.

I am taking this opportunity to attempt to clarify our concerns and request your indulgence to respond. As a reference, I am attaching our April 27th letter. By way of background, you correctly pointed out in your letter that DPC&E's proposed rule revision limiting the time hazardous waste may be stored at one or more transfer facilities to ten days was not contained in the Department's April 22, 1994 published final rule (see footnote 2). However, the provision was not pulled because the DPC&E had reversed or otherwise rescinded their position on the merits of the 10-day aggregate storage limit. Instead, the entire section concerning

transfer facility regulation, including the 10-day aggregate storage limit, was pulled because DPC&E intends to address and clarify other aspects of the transfer facility provisions and republish the proposal later this summer. In the meantime, the DPC&E has affirmed to CWTI on two occasions that the Department's proposed 10-day aggregate storage limit is a restatement of internal interpretive guidance of 40 CFR 263.12 and that the Department enforces 40 CFR 263.12 based on that guidance (see footnote 3). In short, whether or not the 10-day aggregated storage language is in a published rule of the DPC&E, the 10-day aggregated transfer facility storage policy is currently being enforced.

Clarification of EPA's Interpretation of the 10-day Transfer Facility Storage Rule

Our primary reason for writing was to obtain reaffirmation of EPA's interpretation of 40 CFR 263.12 to the effect that the ten-day limitation begins anew at each transfer facility that a shipment may be stored at in the normal course of transportation. If EPA's policy has changed, we have had no notice of it. This issue was not addressed in the Agency's May 23rd letter.

EPA's Interpretation of the phrase "Normal Course of Transportation"

Closely related to our request that EPA reaffirm it's interpretation of 40 CFR 263.12 as it pertains to the ability of a shipment to be held at multiple sites for up to ten days at each site is the matter of EPA's interpretation of the phrase "normal course of transportation" (see footnote 4). As explained in our letter of April 27, DPC&E cites EPA's preamble to the transfer facility rule to the effect that EPA "set a ten day period for in-transit holding of hazardous waste [and] that shipments of hazardous waste normally take no longer than fifteen days (including both the actual transportation and the temporary holding of the shipment)" (see footnote 5). In view of this statement that "normal" is "no longer than fifteen days," the DPC&E cannot fathom how EPA could interpret the 10-day transfer facility storage provision at 40 CFR 263.12 to begin anew at each such facility. In order for us to reopen discussions with DPC&E on the merits of their interpretation of the 10-day in-transit storage rule, we asked that EPA define what is meant by the phrase "normal course of transportation." This matter was not addressed in the Agency's May 23rd letter.

Reaffirmation of EPA's Interpretation of Section 3009 Authorize

Again to help frame the parameters of our discussion with the DPC&E and options we may use to pursue to resolve our differences of opinion, we requested that EPA advise us whether or not RCRA Section 3009 "authorizes", within the meaning of 49 U.S.C. App. 1811(a), as opposed to "does not prohibit" a state's more stringent interpretation of EPA's "10-day, in-transit storage" and "normal course of transportation" language. The U.S. Department of Transportation, under authority of 1811(a), has found that the fact RCRA does not prohibit a state from imposing more stringent regulations does not protect those regulations from preemption under the Hazardous Materials Transportation Act (see footnote 6). We had hoped to obtain a reaffirmation of DOT's and prior EPA interpretations. The Agency's May 23rd letter did not address this request.

RCRA Section 3006 Implications

We did ask if DPC&E's interpretation of the 10-day in-transit aggregate storage limitation was acceptable within its authority pursuant to RCRA Section 3006. The Agency's letter did address this issue stating that it was premature to ask the question prior to the Department formally adopting the policy as a rule. However, it begs the question presented by the situation in Arkansas of a state that, not by rule but by "interpretation," enforces policies that are at odds with EPA's implementation of RCRA. Please elaborate on EPA's authority to review a state's requirements in terms of such requirements' acceptability as part of a state's authorized program when such requirements are imposed and enforced not by regulation but by interpretation.

Conclusion

Aside from written response to these issues, we are not asking, at this time, for EPA to engage in any action or to assess whether action should or could be taken against DPC&E's 40 CFR 263.12 10-day aggregate transfer facility storage limitation. Our only intent at the moment is to use EPA's response to further our discussions with the DPC&E on the in-transit storage issue.

Again your attention to this issues is appreciated. Please contact me or Cynthia Hilton, CWTI, if further clarification is needed.

Charles Dickhut, Chairman

- 1 Letter to Stephen C. Hansen, CWTI, from Michael Shapiro, EPA, dated May 23, 1994.
- 2 Enclosed is the text from the DPC&E final rule and responsiveness summary that explains the Department's interpretation of the 10-day transfer facility storage limitation. See specifically page 55. The rules cover page is enclosed as a dated reference and page 54 because it begins the Department's discussion of transfer facility issues.
- 3 Telephone conversations between Tom Ezell, Hazardous Waste Division, DPC&E, and Cynthia Hilton, CWTI, April 22, 1994, and May 31, 1994.
- 4 40 CFR 260.10.
- 5 45 FR 86967 (December 31, 1980).
- 6 57 FR 58843, 58855 (December 11, 1992) and 50 FR 28913, 18920 (June 3, 1994). Also see EPA discussion of this matter citing "EPA agrees that a regulation preempted by any other Federal Law is invalid." 57 FR 32726, 32728 (July 23, 1992).

enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
Office of Solid Waste and Emergency Response

May 23, 1994

Mr. Stephen C. Hansen
Chemical Waste Transportation Institute
4301 Connecticut Avenue, N.W.
Suite 300
Washington, D.C. 20008

Dear Mr. Hansen,

Thank you for your letter of April 27, 1994. In your letter, you raise concerns regarding a recent state of Arkansas rule notice that would place an aggregate 10-day limit on the time hazardous waste may be stored at one or more transporters transfer facilities (April 6, 1994, Arkansas Department of Pollution Control and Ecology (DPC&E) Regulations No. 23, page 61). In your letter, you request EPA to confirm or clarify its interpretation of the transfer facility storage time limits under the federal regulations, and whether Arkansas may be authorized under RCRA to implement this provision.

We have contacted the state of Arkansas regarding their transfer facility regulations and have been informed that the provisions of concern to you did not appear in the applicable final rule published on April 22, 1994 (DPC&E Regulations No. 23, page 170). However, we understand that Arkansas may promulgate regulations regarding transfer facilities in the future. If Arkansas adopts rules that go beyond the Federal requirements and submits them for authorization, EPA will then make a determination as to whether the rules may be authorized as requirements that are more stringent than Federal program requirements.

Although the Arkansas transfer facility provisions you referred to in your letter were not finalized, EPA will continue to coordinate with the Department of Transportation and the states to discuss issues that have been raised regarding hazardous waste transporters and transfer facilities. I am particularly aware that RCRA regulation of transfer facilities has become a contentious issue, and we are examining the matter closely. If you have further questions regarding the authorization of states for the

regulation of transporters and transfer facilities, please contact Wayne Roepe of my staff at 703-308-8630.

Michael Shapiro, Director
Office of Solid Waste

Chemical Waste Transportation Institute
4301 Connecticut Avenue, N.W.
Suite 300
Washington, D.C. 20008

April 27, 1994

Michael Shapiro
Assistant Administrator for
Solid Waste and Emergency Response
OS-100
U.S. Environmental Protection Agency
401 "M" St., S.W.
Washington, D.C.

Dear Mr. Shapiro:

On behalf of the Chemical Waste Transportation Institute (CWTI), I am writing to reaffirm EPA's interpretation of the 40 CFR 263.12 as it relates to the ten-day limitation of storage at transfer facilities.

The CWTI is a not-for-profit association that represents companies that transport hazardous waste throughout the United States and Canada, and in Mexico. The Institute works to promote professionalism and performance standards to minimize risks to the environment, public health and safety; to develop educational programs to expand public awareness about the industry; and to contribute to the development of effective laws and regulations governing the industry. The CWTI is the only North American organization that exclusively represents companies engaged in hazardous waste transportation.

Since 1980, federal regulations at 40 CFR 263.12 have provided that shipments of hazardous waste may be temporarily stored at a transfer facilities for a period of ten days or less without triggering the need for a RCRA Subpart C treatment, storage, or disposal permit. EPA has clarified that the ten-day limitation begins anew at each transfer facility that the shipment may be stored at in "the normal course of transportation" (see footnote 1). EPA's guidance acknowledges that repeated, extended delay in the transport of hazardous waste from the point of generation to the designated management site as a result of "storage" at transfer facilities may not be consistent with the normal course of

transportation. However, such determination would have to be made on a case by case basis. In addition, this issue was discussed at the recently concluded Regulatory Negotiation on the Uniform Manifest. At that time, EPA officials reaffirmed the 10-day per transfer facility storage allowance interpretation.

In spite of this guidance, the Arkansas Department of Pollution Control and Ecology (DPC&E) recently finalized revisions to regulations affecting the management of hazardous waste. As part of that revision, the DPC&E has placed an aggregated 10-day limit on the time a shipment of waste may be held at any number of transfer facilities. For example, the rule would hold a transfer facility responsible for illegal storage of hazardous waste if a drum of hazardous waste from California bound for South Carolina was held 5 days in California to consolidate drums from other locations, then held 3 days in Texas to change tractors, then held more than 2 days at the subject site in Arkansas (or any other State prior to delivery) to break/bulk the van's load for transport on other trucks to various permitted facilities.

After hazardous waste has been held at transfer facilities for more than 10 days while in transit, the DPC&E claims that the waste is outside the scope of normal circumstances regarding its transportation and the exemption from RCRA permitting requirements is not longer applicable. This assertion is based, according to the State, on EPA's preamble to the transfer facility rule which provided that "... the amended regulations set a ten day period for in-transit holding of hazardous waste [and] that shipments of hazardous waste normally take no longer than fifteen days (including both the actual transportation and the temporary holding of the shipment" (see footnote 2) (emphasis added). The DPC&E claims that at the time the ten day rule was promulgated that EPA gave no consideration to "the concept of multiple in transit holdings of waste at different transfer facilities..." (see footnote 3). Thus, it rests its case on what it believes EPA intended by the phrase the normal course of transportation.

DPC&E's interpretation of the ten-day rule has the potential to disrupt, delay and otherwise frustrate the transportation of hazardous waste. Consequently, we request a letter reaffirming and clarifying EPA's interpretation of the 10-day per transfer facility storage rule, including a definition of or response to the State's interpretation and use of the phrase "normal course of transportation." Additionally, please advise us if the DPC&E's

action is acceptable within its authority pursuant to RCRA Section 3006 or if under RCRA the State's regulation would "be viewed as 'broader in scope' and, therefore, not part of the authority program" (see footnote 4). Finally, please advise us whether or not RCRA Section 3009 "authorizes", within the meaning of 49 U.S.C. App. 1811(a), as opposed to "does not prohibit" the State's more stringent interpretation of EPA's "10-day, in-transit storage" and "normal course of transportation language."

Your attention to this matter is appreciated. If you require further elaboration on the issues raised above, please contact me or Cynthia Hilton, CWTI.

Sincerely,
Stephen C. Hansen
Chairman

- 1 See attached memoranda from Sylvia Lowrence, former Associate Administrator for Solid Waste and Emergency Response, U.S. EPA, and Robert L. Duprey, Director, Hazardous Waste Management Division, Region VIII, U.S. EPA, dated June 7, 1990; and David Ullrich, Acting Director, Waste Management Division, U.S. EPA, dated October 30, 1990. The terminology "normal course of transportation" occurs in the definition of "transfer facility" at 40 CFR 260.10.
- 2 45 FR 86967 (December 31, 1980).
- 3 Arkansas Department of Pollution Control and Ecology Regulations No. 23, Final Rule and Responsiveness Summary, April 6, 1994, page 61.
- 4 57 FR 32728 (July 23, 1992) (citing EPA's response to a CWTI challenge of various requirements imposed by the State of California on the transportation of hazardous waste).

Enclosures

Arkansas Department of Pollution Control and Ecology Regulation No. 23

1993 Revision

April 6, 1994

DEPARTMENT: Pollution Control and Ecology,
Hazardous Waste Division

ACTION: Final Rule and Responsiveness
Summary

SUMMARY: The Arkansas Department of Pollution Control and Ecology is today revising ADPC&E Regulation No. 23 (Hazardous Waste Management).

This revision of Regulation 23 changes from a format of "incorporation by reference" to "verbatim adoption" in most cases. In the past, the Department has relied heavily upon incorporating by reference the federal rules incorporated in Title 40, Code of Federal Regulations (40 CFR) Parts 260-266, 268, 270 and 124. This made it extremely difficult to determine when a specific rule went into effect, or was revised, without researching the original state and Federal rulemaking packages. It was not a simple task to determine whether a Federal provision or a substituted state rule was in effect without cross-checking both documents. The additional burden of needing to cross-check two separate regulations, each of different format, created additional confusion as to the exact wording of the rules in effect. Most of the specific rules in 40 CFR were thus invisible to the public and the regulated universe, many of whom did not take time to obtain or research the Federal rules.

As of December 4, 1992, the Department has final Federal authorization for all rules and changes to the RCRA program promulgated as of June 30, 1991. Since in an authorized State such as Arkansas the state hazardous waste management program applies to the majority of situations in lieu of the Federal requirements, a single-source reference is acutely needed to minimize conflict and

confusion between the two sets of requirements. In this revision to Regulation No. 23, the Federal rules as previously incorporated by reference and Federally authorized have been reprinted in their entirety as previously adopted. References to the Director (vice the EPA Administrator) and the Department (vice EPA) have been made where necessary, and specific Department requirements and points of contact listed where appropriate. Where a state rule applies and has been implemented and/or authorized in place of a Federal rule, the state rule is shown in its proper place in the full text of the regulatory requirements with the applicable Federal rule, or in lieu of the Federal language it replaces.

The Department's intent behind this revision and its full-text format is to provide a stand-alone, easily accessible single-source reference for the Arkansas hazardous waste regulations and requirements currently in effect. Once this revised regulation is in place, one should have only limited need to purchase and/or refer to a separate copy of 40 CFR to find the current requirements pertinent to his hazardous waste activities in Arkansas.

Incorporation by reference has been retained to a limited extent in the case of 40 CFR 261 Appendices IX and X Appendix IX of 40 CFR-Part 266, and portions of 40 CFR 124, Subpart A. Future Federal rule changes will be adopted and incorporated verbatim as they are applicable, or in specific cases may be incorporated by reference in a rule-by-rule manner.

The reformatting of the regulation also dictated a major change in the organization of the previous section and paragraph numbers. Federal rules adopted from 40 CFR Parts 260 through 266, 268, 270, and 279 have been kept together to the maximum extent possible. To minimize impact in cross-referencing these rules, the entire text was adopted in the same format as it appears in 40 CFR. 40 CFR Part numbers for the Federal rules were changed to Regulation 23 Section numbers; and all subparagraph numbers (e.g. paragraph citations following the right of the decimal point in the citation) were left unchanged. 40 CFR Parts 260-266, 268, 270, and 279 were renumbered as Regulation 23 Section numbers 7 through 17 respectively as described below. Any reference to an adopted provision of the adopted portions of 40 CFR may be converted to a reference in this revision of Regulation 23 simply by facility on the appropriate transporter permit and to assist in tracking compliance with the regulatory requirements for transporters and transfer facilities listed in § 10.12.

PUBLIC COMMENTS: None received.

STAFF RESPONSE TO COMMENT:

In light of the revised means of annotating which subsidiaries, facility, or locations affiliated with a specific transporter are addressed under a transporter permit, the proposed revisions at § 10.1 I(c) are withdrawn, and the original Federal language restored in its place.

(21) Section 10.12 originally proposed to expand the operating requirements for hazardous waste transfer facilities. This revision would have established basic requirements for the operation of transfer facilities or transportation terminals which are similar to the 40 CFR 262 standards for generators in order to provide increased safety and protection for human health and the environment by more closely controlling the manner in which these facilities may be operated.

The proposed changes would require transporters who operate transfer facilities where hazardous wastes are temporarily held for short periods of time during the normal course of transportation to meet minimal notification, recordkeeping, preparedness and prevention, personnel training, contingency planning and emergency procedures necessary to protect human health and the environment at these facilities. The proposed changes would affect the activities of transfer facilities only and do not alter or affect current transporter requirements regarding, among other things permitting, manifesting, labeling, marking, placarding, using proper containers, and reporting and response to discharges. Additionally, the proposed rule would elucidate current regulations by clarifying the limitations of storage and treatment activities allowed at transfer facilities which do not hold storage or treatment permits.

The Department asserts that these changes do not, in any way, alter or restrict the movement, management, handling, or transportation of manifested shipments of hazardous waste in a way different or inconsistent with current EPA and DOT regulations for hazardous wastes which are transported and are not stored in transfer facilities during transit. For manifested shipments of hazardous wastes which are stored for a period of ten days or less in transfer facilities during transit, these proposed rules only affect activities related to such temporary storage and do not alter or restrict current requirements related to the movement of

such shipments. The Department further asserts that the proposed rules are necessary to provide adequate protection of human health and the environment at transfer facilities and that the proposed changes, while having no impact on transporters who do not own or operate transfer facilities, does not significantly increase the economic, recordkeeping, and reporting impacts on transporters who do own or operate transfer facilities in that the proposed changes clarify current rules, add only "common sense" management requirements that prudent and well maintained facilities should already be conducting, and requires the minimum amount of recordkeeping and reporting necessary for the Department to locate, identify, and monitor compliance at transfer facilities.

ADPC&E Regulation No. 23 currently incorporates by reference most of 40 CFR 260-266, 268, and 270. The provisions of 40 CFR 263.12 Transfer Facility Requirements, as incorporated, state, "A transporter who stores manifested shipments of hazardous waste in containers meeting the requirements of § 262.30 at a transfer facility for a period of ten days or less is not subject to regulation under parts 270, 264, 265, and 268 of this chapter with respect to the storage of those wastes." EPA first proposed this rule, prior to its adoption into Regulation 23, at 45 FR 86968, December 31, 1980. This rule was promulgated to clarify when a transporter handling shipments of hazardous waste is required to obtain a storage facility permit and specifically provides that transporters be allowed to store hazardous waste in approved containers at transfer facilities for short periods without first complying with standards applicable to hazardous waste storage facilities. At the time EPA promulgated and ADPC&E adopted this rule, all available information regarding transfer facility operations and activities were considered in determining that these transfer facility requirements were sufficient to allow protection of human health and the environment. However, ADPC&E has become aware of additional transfer facility activities which are beyond the scope of those activities considered by EPA and ADPC&E at the time this rule was promulgated and adopted. The Department contends that because these activities may result in hazardous waste being managed at transfer facilities on a continuing basis, rather than the incidental basis as considered by EPA, additional requirements are necessary to adequately protect human health and the environment at these facilities.

In determining that the current transfer facility requirements were sufficient to protect human health and the environment, EPA based

its opinion on two criteria. First, EPA considered "Transporters have a natural incentive to move shipments quickly and efficiently; their business, in most cases, is the movement of hazardous waste rather than the storage of such waste." Secondly, EPA believed that requiring the use of DOT containers minimized the potential for release. Therefore, EPA allowed that such short term storage (less than 10 days) at a transfer facility if conducted to facilitate normal transportation activities and the waste was held in DOT containers did not pose a substantial threat to human health or the environment because of the minimal residency time waste would be held at transfer facilities. However, the Department believes that EPA did not consider that transfer facilities would operate in such a manner as to cause substantial quantities of hazardous waste to be present on-site on a continuing basis and that such activity poses the same management concerns as do similar activities at facilities which accumulate hazardous waste on-site (i.e., less-than-90-day generator accumulation) or which store hazardous waste received from off-site. The Department has reason to believe that many transporters maintain large volumes of hazardous waste on-site continually at transfer facilities. Although specific shipments of hazardous waste may enter and leave the transfer facility with a short residency time, the large volume of waste being processed through such facilities allow that, at any given time, substantial volumes of hazardous wastes may be present on-site. Moreover, the Department believes that EPA failed to anticipate that many transporters would operate transfer facilities in close coordination with generators, brokers, and treatment, storage, and disposal facilities for the purpose of using transfer facilities to supplement the storage activities of those facilities rather than to support the transportation-related activities of the transporter.

The Department, therefore, believes that the present transfer facility requirements are insufficient to protect human health and the environment at such facilities and additional management requirements are necessary to insure the protection of transfer facility personnel as well as the health and safety of persons working or living in the vicinity of such facilities and to protect and prevent the accidental release of hazardous waste or hazardous waste constituents into the environment. While the Department disagrees with EPA that current transfer facility requirements are adequately protective of human health and the environment, it agrees with EPA's position that transfer facility activities should allow for limited in-transit storage without a RCRA permit or

interim status. In order to clarify these limitations, the proposed rule includes requirements which explicitly state the period of time that transfer facilities may hold a shipment of hazardous waste in transit, clearly defining the term "in transit".

The proposed rule clarified that the requirements would apply only to transporters who own or operate transfer facilities. None of the requirements would affect or alter the activities of transporters not engaged in the management of hazardous waste at such facilities.

The proposed rule attempted to more clearly state the currently effective storage time limitations applicable to transfer facilities which do not have RCRA permits or interim status for storage. Although this interpretation does not change the current requirements pertaining to the period of time waste may be held at transfer facilities, the Department seeks to define in more precise terms that a shipment of waste may be held at transfer facilities only 10 days while in transit. The Department is aware that the wording of the current requirement has been frequently misinterpreted by some transporters to mean that a shipment of waste may be held at a number of transfer facilities for a period of 10 days at each transfer facility.

The Department proposed to add additional requirements for the management of hazardous waste while stored at transfer facilities. For the reasons previously stated, the Department believes these requirements are necessary to be adequately protective of human health and the environment for waste which is held at transfer facilities. Sections 12.31, 12.32, 12.33, 12.34, 12.37 are equivalent to generator and TSD facility Preparedness and

9541.1985(07)

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

MAY 85

Manifest Use and State Authorization

3. A spent solvent, which is hazardous by characteristic only (e.g. ignitable D001), is transported from the generator in Montana, to a reclamation facility in Texas. Both Montana and Texas are states with final authorization for the RCRA program. The transporter will also go through Wyoming which is a non-authorized state (i.e., it is under the Federal RCRA program).

Pursuant to 40 CFR §261.6(a), characteristic hazardous wastes which are reclaimed are not subject to RCRA regulations. According to §261.2(c) as amended by the January 4, 1985, Federal Register (50 FR 614), however, all spent solvents, characteristic or listed, will be defined as "spent materials" and will be regulated as "solid wastes" prior to reclamation. Thus, per §261.6(b), in the January 4, 1985, rule, generators and transporters of recyclable hazardous materials (e.g., spent solvents) are subject to Parts 262 and 263 (generator and transporter standards, respectively). The complicating factor is that this new definition of solid waste and respective recycling regulations may go into effect at different times through the country depending on whether a state is authorized or not.

The January 4, 1985, rule will be effective in non-authorized states on July 5, 1985. States with final authorization, such as Montana and Texas, may have up to January 4, 1987, to adopt this rule. Therefore, a characteristic ignitable spent solvent will be a regulated hazardous waste prior to reclamation in non-authorized states on July 5, 1985. In the transport situation described above, is the transporter required to carry the Uniform Hazardous Waste Manifest in Wyoming, since the spent solvent is a "hazardous waste" in Wyoming on July 5, 1985?

If the spent solvent is transported from Montana to Texas (EPA-authorized states) after July 5, 1985, the transporter need not carry the Uniform Hazardous Waste Manifest, even though the spent solvent is transported through Wyoming, which regulates the solvent as a RCRA waste. States through which the waste shipment travels may not dictate manifest requirements per 49 FR 1049

Attachment DD

(March 20, 1984). When either the generator state (Montana) or the designated state (Texas) determines that the waste is hazardous, that waste will be subject to the Uniform Manifest requirements.

Source: Denise Hawkins (202) 382-2231

9498.1993(01)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

April 30, 1993

Lew H. Dodgion, P.E., Administrator
Department of Conservation and Natural
Division of Environmental Protection
Capitol Complex
333 W. Nye Lane
Carson City, Nevada 89710

Dear Mr. Dodgion:

This is in response to your letter dated February 10, 1993 and subsequent conversations between my staff and Nancy Alvarez of your staff to clarify issues requested pertaining to State and Federal applicability of the Boiler and Industrial Furnace (BIF) rule to lime kilns burning hazardous waste. This clarification involves making distinctions on whether to classify the activity of the facility as destruction, treatment or recycling.

First, we would like to point out that under the RCRA regulations recycling and treatment are not mutually exclusive as they may be under your state regulations. That is, under the RCRA regulations, recycling is normally a type of treatment (see definition of treatment in 40 CFR 260.10 which includes energy recovery and material recovery as types of treatment); see also RCRA Section 3004(q) (requiring the regulation of BIFs burning hazardous waste for energy recovery). Further, under these regulations, whether a BIF is considered to be recycling a hazardous waste has no impact on whether its operation is regulated. Irrespective of the purpose, all hazardous waste that is burned or processed in a boiler or industrial furnace as defined in 40 CFR 260.10, except as provided by paragraphs (b) (c) and (d) of 40 CFR 266.100, is subject to the BIF rule.

Second, because we are not familiar with your State laws which require a distinction between destruction, treatment and recycling, we cannot advise you on how these definitions should be applied to

determine what State approvals would be applicable for this facility. Thus, it is up to your State to make the determination of whether or how your regulations should be interpreted and applied. In any case, as discussed above, in determining the regulatory status of the lime kiln, if the material being burned is a hazardous waste, then the BIF rule 1 applicable as a Federal requirement.

If you have any additional questions or would like to discuss this in any further detail, please contact Karen Randolph of my staff on (703) 308-8651.

Sincerely,
Sylvia K. Lowrance, Director
Office of Solid Waste

cc: Dev Barnes, PSPD; Matt Hale, PSPD; Jim Michael, PSPD;
Sonya Sasseville, PSPD; Nancy Alvarez, NDEP; Waste
Combustion Permit Writers' Workgroup

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

JULY 28, 1993

Mr. D. B. Redington
Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63167

Dear Mr. Redington:

Thank you for your letter of March 30, 1993, in which you urged the agency to provide an exemption from the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations for fluorescent lamps. You also requested that the agency clarify the regulatory status of crushing fluorescent lamps to recover mercury values. In your letter, you discuss "the need to crush bulbs as the first step toward shipment of the materials to a recycler." You expressed concern that crushing of fluorescent lamps might constitute treatment.

With regard to exempting fluorescent lamps from EPA's hazardous waste regulations, the Agency is currently considering various options for regulating the management of spent lamps. We expect to complete this analysis soon and then publish the selected approach in the Federal Register for public comment. We would very much welcome your comments on that proposal. In the meantime, the following provides guidance on the current regulatory status of crushing of fluorescent lamps.

Generally, recycling of hazardous wastes would be defined as treatment under 40 CFR 260.10. Legitimate recycling processes, however, are not subject to RCRA Subtitle C regulation under 40 CFR 261.6(c) except as noted in 40 CFR 261.6(d). If crushing fluorescent lamps that fail the toxicity characteristic is a necessary part of a legitimate recycling process, it would not be subject to RCRA Subtitle C regulatory requirements except as specified in 40 CFR 261.6(d). The crushing activities may occur at the generator's facility, or at the recycler's facility and remain exempt under 40 CFR 261.6(c). You should be aware that any storage of crushed lamps that fail the toxicity characteristic still would be subject to RCRA Subtitle C regulation (e.g., 40 CFR 262.34 for generator accumulation or 40 CFR Part 264 for other storage).

Also note that spent fluorescent lamps contain a small amount of elemental mercury as well as mercury that is bound to the phosphor powder found inside the bulb. The Agency has little data on the potential hazard of mercury releases from bulb breakage or crushing but we are concerned that crushing may present a hazard to worker safety. In our proposal regarding the management of spent fluorescent lamps (described above), the Agency will be requesting data on the potential hazard of breaking or crushing mercury-containing lamps.

Attachment FF

The Occupational Safety and Health Administration (OSHA) sets standards for maximum exposure limits for mercury in the workplace. These standards are found at 29 CFR Part 1910; there may also be applicable State worker safety requirements. You should ensure that the crushing operations comply with applicable occupational and health standards.

Under Section 3006 of RCRA, individual States can be authorized to administer and enforce their own hazardous waste programs in lieu of the Federal program. When a State is not authorized to administer its own program, the appropriate EPA Region administers the program and is the appropriate contact for any case-specific determinations. Please also note that under Section 3009 of RCRA, States retain authority to promulgate regulatory requirements that are more stringent than Federal regulatory requirements.

If you have questions about how the recycling and storage requirements apply to your specific activities, you should contact the State agency (or EPA regional office in a State not authorized to administer the RCRA program) for a site-specific determination.

If you have further questions about RCRA Subtitle C regulatory requirements, please contact Charlotte Mooney or Ann Codrington of my staff at (202)260-8551. If you have questions about the proposal regarding the management of spent fluorescent lamps, contact Valerie Wilson at (202)260-4770. Thank you for your interest in the safe recycling of hazardous waste.

Sincerely,

Jeffrey D. Denit
Acting Director,
Office of Solid Waste