Paint Manufacturing Hazardous Waste Listing Determination

RESPONSE TO COMMENTS DOCUMENT

MARCH 2002

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LIST OF COMMENTERS

Document #	Name	Type	City & State
PMLP-00001	Magruder	Industry	Elizabeth, NJ
PMLP-00002	American Chemistry Council Ketones Panel	Association	
PMLP-00003	PPG Industries	Industry	Pittsburgh, PA
PMLP-00004	BF Goodrich Hilton Davis, Inc.	Industry	Cincinnati, OH
PMLP-00005	CDR Pigments & Dispersions	Industry	Cincinnati, OH
PMLP-00006	National Mining Association (NMA)	Association	
PMLP-00007	American Chemistry Council Phthalate Esters Panel	Association	
PMLP-00008	Utility Solid Waste Activities Group (USWAG)	Association	
PMLP-00009	Kelley Technical Coatings	Industry	Louisville, KY
PMLP-00010	Color Pigments Manufacturers Association (CPMA)	Association	
PMLP-00011	American Chemistry Council Oxo Process Panel	Association	
PMLP-00012	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Association	
PMLP-00013	Waste Management/ Government Affairs	Industry	Washington, DC
PMLP-00014	Star Bronze Company	Industry	
PMLP-00015	American Petroleum Institute (API)	Association	

Document #	Name	Type	City & State
PMLP-00016	Methacrylate Producers Association (MPA)	Association	
PMLP-00017	Emulsion Polymers Council (EPC)	Association	
PMLP-00018	Duron Paints & Wall Coverings	Industry	Beltsville, MD
PMLP-00019	Sherwin Williams Co.	Industry	Cleveland, OH
PMLP-00020	Continental Industrial Coatings	Industry	Belle Chasse, LA
PMLP-00021	Antimony Oxide Industry Association (AOIA)	Association	
PMLP-00022	Cintech Industrial Coatings	Industry	Cincinnati, OH
PMLP-00023	Delta Laboratories Inc.	Industry	Ocala, FL
PMLP-00024	Akzo Nobel	Industry	Louisville, KY
PMLP-00025	Davis Paint Co.	Industry	N. Kansas City, MO
PMLP-00026	Jamestown Paint Co.	Industry	Jamestown, PA
PMLP-00027	Aexcel Corp.	Industry	Mentor, OH
PMLP-00028	Kelley Technical Coatings	Industry	Louisville, KY
PMLP-00029	Styrene Information and Research Center (SIRC)	Association	
PMLP-00030	American Chemistry Council	Association	

Document #	Name	Type	City & State
PMLP-00031	Rohm and Haas	Industry	Philadelphia, PA
PMLP-00032	Eastman Chemical Co.	Industry	Kingsport, TN
PMLP-00033	National Paint & Coatings Association, Inc. (NPCA)	Association	
PMLP-00034	North American Polyelectrolyte Producers Association (NAPPA)	Association	
PMLP-00035	RPM, Inc.	Industry	Medina, OH
PMLP-00036	Valspar Corp.	Industry	Minneapolis, MN
PMLP-00037	Kalcor Coatings Co.	Industry	Willoughby, OH
PMLP-00038	International Precious Metals Institute (IPMI)	Association	
PMLP-00039	ICI Paints North America	Industry	Strongsville, OH
PMLP-00040	P.D. George Co.	Industry	St. Louis, MO
PMLP-00041	DuPont	Industry	Wilmington, DE
PMLP-00042	Adheron Coatings Corp.	Industry	Oak Forest, IL
PMLP-L0001	National Paint and Coatings Association	Association	Washington, DC
PMLP-L0002	GE	Industry	Fairfield, CT

I. OVERVIEW

EPA received numerous public comments on its February 13, 2001 proposed rule (66 FR 10060), which proposed to list two paint production wastes as hazardous wastes. However, following a review of the public comments and supplemental analyses based on public comments, EPA made a final determination not to list the two paint production wastes identified in the February 13, 2001 proposal. Because the Agency has determined not to list the paint production wastes as proposed, the proposed provisions are no longer necessary. Therefore, unless where it is necessary to explain and/or clarify EPA's position on specific issues, EPA is not addressing the comments on the proposed rule for paint production wastes at this time.

This document does include verbatim comments received from the above list of commenters on the various aspects of the proposed rule. Also, where possible, EPA has included a summary of the comments in each section and/or subsection of the document. An effort was made to keep all of the sections in the document organized in a similar manner. However, many sections continue to vary from each other because their comment/response requirements were not the same. Therefore, it is important that each section is viewed independently with regard to comment/response organization.

A. Concentration-based listing approach (general)

As discussed in Section IV.B. of the final determination, we have determined not to finalize a hazardous waste listing for paint manufacturing wastes. Therefore, we are not addressing comments specific to these concerns.

***SUMMARY* OF COMMENTS**

The Agency received ten comments, seven from trade associations and three from industry, all supporting the concentration-based listing approach. USWAG stated that this approach is a valuable tool for cost-effective and environmentally protective waste management. However, most commenters cautioned that for this approach to be effective, the constituents of concern must be carefully chosen and the concentration threshold values must be set to reasonable and defensible levels based on realistic risk scenarios. SOCMA also added that for a concentration-based listing approach to be useful to its members will depend upon whether EPA takes adequate consideration of the cost and feasibility of testing and analytical requirements for batch manufacturing operations. API took issue with EPA's statement that a concentration-based listing approach may provide incentive for manufacturers to change their processes. API pointed out that EPA's role is to regulate hazardous wastes not product management.

VERBATIM COMMENTS

Assuming, *arguendo,* that the rulemaking record supports the listing proposal, the proposed concentration-based listing for two of the paint manufacturing waste streams — K179 solid paint wastes and K180 liquid paint wastes — appears to be a reasonable approach to focusing the impacts of Subtitle C regulation according to risk. In general, USWAG supports the concentration-based approach to the listing of hazardous wastes as a valuable tool for cost-effective and environmentally protective waste management.[4] However, we emphasize that the framework must be established properly to avoid the imposition of burdens that would eliminate the benefits of this innovative approach. In these comments we note with approval some important improvements to the concentration-based listing approach first set forth in the proposal for wastes from the manufacture of pigments and dyes, 64 Fed. Reg. 40192 (July 23, 1999). We also note some remaining limitations that we urge the Agency to address before issuing final rules in this rulemaking, in the rulemaking for waste from the pigments and dyes industry, and in subsequent regulatory actions.

USWAG defers to the expertise of the paint manufacturing industry to determine whether EPA's selections of constituents of concern and concentration thresholds are appropriate. We simply caution that for the approach to be cost-effective for generators and for the burdens to be commensurate with the benefits, the constituents of concern and the concentration threshold values must be set at appropriate levels. Overly conservative numbers or an overly broad list of constituents would negate the benefit of the approach by requiring generators to expend resources on costly and time-consuming sampling and analysis to demonstrate that their waste streams are not hazardous. On the other hand, if those constituents and concentrations are properly established, the burdens of Subtitle C regulation can be avoided for many waste streams that do not warrant hazardous waste listing.

4 A relevant paint waste would be presumed hazardous unless a determination is made that it does not contain any of 12 specified constituents (constituents commonly found in these waste streams) at or above threshold levels. 66 Fed. Reg. at 10073.

(PMLP 00008. USWAG, pages 4, 5 w/attachments)

In the Proposed Rule, as in a number of other recent rulemaking initiatives, EPA uses various approaches to tailor the scope of proposed hazardous waste listings to better reflect both degree of risk and actual waste management practices. In general, SOCMA supports the Agency's efforts as a means to address one of the fundamental problems of the RCRA program - the over-inclusive effect of the hazardous waste listings program.

As EPA acknowledged in its 1995 Reinventing Environmental Regulation Initiative, one important goal for the hazardous waste program is refocusing the program on the regulation of high-risk wastes and better aligning the regulations to the degree of risk actually posed by particular wastes. SOCMA hopes that EPA will continue to move forward and look for new opportunities to achieve this goal.

SOCMA supports the concept of concentration-based listings as set out in the Proposed Rule.[2] As EPA explains in the preamble to the Proposed Rule, use of a concentration-based listing has the potential to identify and regulate only those wastes from batch operations that warrant regulation under RCRA:

> A concentration-based approach allows generators to evaluate the variable wastes they generate individually for hazard, so only the truly hazardous wastes are listed. This can place fewer burdens on paint manufacturers than a traditional listing that brings entire waste streams into the hazardous waste system, regardless of the characteristics of wastes generated by individual generators. (66 Fed. Reg. at 10074.)

In this regard, SOCMA agrees that a concentration-based listing conceptually is better suited to address the variability of waste streams that could be generated by batch manufacturing.

However, the merits of any particular concentration-based listing will depend upon the scope and accuracy of the underlying assessment of risk and evaluation of actual waste management practices and options. In addition, from the perspective of SOCMA members, the utility of any particular concentration-based listing will depend upon whether EPA takes adequate consideration of the cost and feasibility of testing and analytical requirements for batch manufacturing operations.

In its discussion of concentration-based listings in the Proposed Rule, EPA also noted that concentration-based listing might promote efforts to modify manufacturing processes to reduce the volume of hazardous wastes produced. 66 Fed. Reg. at 10074. SOCMA agrees that concentration-based listings have some potential to serve as an incentive for these types of hazardous waste minimization activities. The option of modifying a process to reduce the concentration levels of concern and avoid a hazardous waste listing is simply not available under EPA's traditional approach to hazardous waste listings. Thus, concentration-based listings will allow companies to explore new options for hazardous waste minimization.

However, based on the experience of its members within the batch specialty chemical manufacturing sector, SOCMA cautions that these types of process modifications are often less feasible and less productive for batch facilities that generate a wide and changing variety of waste streams. Furthermore, SOCMA considers it important that EPA understand and acknowledge as part of this discussion in the final rule that batch manufacturing operations typically face different challenges in implementing particular pollution prevention and waste minimization measures.

For example, the routine variability that characterizes specialty chemical batch manufacturing, i.e., fluctuating product mixes, production of multiple products and variable production levels, creates similar variability in the type, volume and content of the wastes generated by batch manufacturers. Thus, year-to-year quantitative comparisons of levels of wastes generated - the standard rubric for waste minimization, TRI, etc. - do not provide a reliable measure of the waste minimization activities of this industry sector. In the context of a rule specifically designed to consider batch-manufacturing operations, it would be appropriate for EPA to identify and educate others about the need for flexibility in evaluating batch operations in this regard as well.

2 As noted above, SOCMA has not evaluated and offers no comment upon the proposed decision to regulate as hazardous the particular waste streams identified in the Proposed Rule and similarly has not evaluated and offers no comment upon the specific concentration levels proposed for constituents in those waste streams.

(PMLP 00012. SOCMA, pages 4, 5, 6)

API agrees with EPA's assertion that "a concentration-based approach allows generators to evaluate the variable wastes they generate individually for hazard, so only the truly hazardous wastes are listed" (66 FR 10074). API also agrees that "a traditional listing . . . brings entire waste streams into the hazardous waste system, regardless of the characteristics of wastes generated by individual generators" (id.).

Assuming that there is an adequate basis for listing a waste in the first place, a concentration-based listing approach is preferable to an across-the-board listing, which subjects all waste of a certain description to Subtitle C regulations, no matter how minuscule the constituent concentrations -- and thus the potential risk -- may be in a given case. API has long advocated that the traditional listing approach frequently results in needless over-regulation of wastes that pose little or no risk, and that a more tailored approach should be used wherever possible. API urges EPA to consider concentration-based listings -- in addition to the concentration-based controls and contingent management listings -- as a regular component of the hazardous waste listing program.

However, by stating that "a concentration-based listing approach may provide an incentive for hazardous waste generating facilities to modify their manufacturing process,"(66 FR 10074) EPA is encouraging process management as a means of avoiding the listing. Although we support the concept of concentration-based listings, we do not agree with EPA's apparent desire to influence the production process. RCRA authorizes EPA to regulate hazardous wastes, not product management. The concentration-based listing approach is self-implementing, and EPA should leave it entirely to the generators to decide the best method to address concentration-based listings.

(PMLP 00015. API, page 2, 3 (from 1B))

Finally, MPA supports EPA's use of a "concentration-based" approach to the listing of hazardous wastes, provided that the approach is based on reasonable assumptions regarding the constituents and concentrations of concern. Allowing certain wastes to "exit" the RCRA program if the levels of individual constituents deemed "hazardous" are so low that they pose little risk is a progressive and long overdue step that will reduce unnecessary regulatory burdens and allow waste management resources to be used more efficiently. However, these benefits of the concentration-based approach are defeated when unrealistic scenarios are modeled and used to list waste constituents and establish exit levels. Virtually any waste could be characterized as "hazardous" based on the mere theoretical possibility that the waste could contain a specified level of a hazardous constituent, or if the exit levels are set at an unrealistically low concentration. In implementing this revised approach, EPA must ensure that the constituents and concentrations that pose real risks to human health and the environment are accurately identified and that the end result is not just an unnecessary testing burden and a waste of resources.

(PMLP 00016. MPA, page 15, w/attachments)

As a conceptual matter, EPC endorses EPA's "concentration-based limit" approach to defining whether a waste should be managed as "RCRA hazardous." As EPA observes in introducing the concept in the Preamble to the proposed rule, such an approach allows the Agency "to focus more narrowly on ingredients that are likely to be widely used in paint formulations and that are likely to pose risks to human health and the environment." (66 Fed. Reg. 10074)

(17. EPC, page 4 w/attachments)

Consistent with its long-held views, the Council strongly supports EPA's proposal to establish a concentration-based listing for paint manufacturing wastes. 66 Fed. Reg. at 10102 (February 13, 2001). In 1989, the Council (then CMA) filed a petition for rulemaking requesting that EPA develop *"de minimis"* concentration levels for "mixture and derived-from" wastes.[3] Since that time, the Council has worked with the Agency to develop concentration-based levels for defining low-risk wastes that do not require Subtitle C management. In its original rulemaking petition, the Council recognized that concentration-based exemptions have several benefits including promoting waste minimization, source reduction, and site remediation.[4] Preventing the misallocation of limited resources is another benefit of allowing low-risk wastes out of the universe of hazardous wastes. We also agree with EPA's view that concentration-based listings allows facilities to evaluate variable wastes individually for hazard, thereby reducing the volume of wastes to be managed under Subtitle C to those that are truly hazardous.

Another significant benefit of this approach is relief from the adverse effects of RCRA's mixture and derived-from rules. Without a concentration-based listing, the only current relief from these rules requires a formal rulemaking process *(i.e.,* delisting), subjecting industry and the overseeing agency to all the unnecessary delays and costs associated with this burdensome process.

The Council continues to urge EPA, as a general matter, to use a concentration-based listing approach as an alternative to the more generic and conservative descriptive listing approach that identifies wastes as hazardous without specifying the concentrations of the chemicals or management practices that would pose significant risk. This approach frequently subjects wastes that pose no significant risks to the costs and other burdens of regulation as "hazardous waste" under Subtitle C of RCRA.

3 Petition for Rulemaking for a De Minimis Exclusion to the Mixture Rule, Derived from Rule and Contaminated Media Rule/Interpretation; submitted by the Chemical Manufacturers Association, May 5, 1989.

4 *Id*. at pp. 15—32

(PMLP 00030. ACC, page 1, 2)

Rohm and Haas supports a concentration based listing approach if it takes into consideration a de minimis concentration level at which the waste is not likely to be harmful and is therefore excluded from RCRA. The ACC has promoted this approach for many years. However, most de minimis levels proposed by the Agency have been unrealistic and overly conservative. The major fault seems to be the lack of proper peer reviewed modeling tools, unrealistic assumptions about exposures, and lack of peer reviewed toxicity data. This scientific critique has been repeated over the years by various trade associations and EPA peer review panels.

(PMLP 00031. Rohm and Haas, page 3)

These proposed "concentration-based" limits for acrylamide represent a departure from EPA's more typical hazardous waste listing approach where a waste is designated as hazardous irrespective of its hazardous constituent concentration. As a matter of public policy, NAPPA subscribes to this more tailored approach which allows the measure of hazard to dictate when a waste must be managed as hazardous.

(PMLP 00034. NAPPA, page 3 w/attachments)

In these comments, DuPont supports the Agency in its general technical approach to the risk assessment and development of the list of constituents of potential concern, as well as, conceptually, a concentration-based and conditional listing approach.

(PMLP 00041. DuPont, page 6, w/attachments)

GE supports concentration based and contingent listings as a general matter. GE has not analyzed the concentration levels EPA is proposing to use as regulatory levels for paint manufacturing wastes and does not offer an opinion of the suitability of particular levels proposed. However, as a general matter, we support the use of concentration-based listings. Such an approach is supported by the statute, which directs EPA to identify wastes that may pose a risk to public health and the environment if mismanaged. Twenty-five years after the passage of RCRA there have been many analyses completed that establish the existence of levels of potentially toxic materials that will not harm human health or the environment. Particularly in view of the limited scope of changes to the mixture and derived-from rule that were recently promulgated, it is critically important that EPA not continue the listing program in a way that will further expand unnecessary regulation of wastes containing low levels of hazardous constituents.

(PMLP L0002. GE p.5)

B. Contingent management (general)

As discussed in Section IV. B. of the Final Regulatory Determination, we have decided not to finalize a hazardous waste listing for paint manufacturing wastes. Therefore we are not addressing comments specific to the concerns raised below.

SUMMARY OF COMMENTS

The Agency received eight comments, three from associations and five from industry, with seven commenters supporting the use of contingent management listing approach and one commenter having no position. Three industry comments stated their support but believed that their facilities manufacturing of printing ink varnish should be excluded from the proposed rulemaking. ACC, NPCA and DuPont stated their support of contingent management for low risk wastes and also stated that EPA has the authority in existing legislation to consider the way wastes are managed when making hazardous waste determinations.

VERBATIM COMMENTS

While we support generally the concept of contingent listing such as that proposed, in this case, the wastes generated by our facilities manufacturing printing ink varnish should be excluded from the regulation.

(PMLP 00001. Magruder, page 11)

While we support generally the concept of contingent listing such as that proposed, in this case, the wastes generated by our facility manufacturing printing ink varnish should be excluded from the regulation.

(PMLP 00004. BF Goodrich Hilton Davis, Inc., page 10)

While we support generally the concept of contingent listing such as that proposed, in this case, the wastes generated by our facilities manufacturing printing ink varnish should be excluded from the regulation.

(PMLP 00005. CDR Pigments & Dispersions, page 11)

API continues to urge EPA, as a general matter, to use the more tailored, conditional listing approach as an alternative to the overly-conservative "across-the-boards' listing approach, which frequently subjects wastes that pose no significant risks to the costs and other regulatory burdens of RCRA Subtitle C requirements. The need for such a tailored approach is made more compelling because of the so-called "mixture and derived-from" rules (40 CFR §§ 261.3(a)(2)(iv), (c)(2)) under which large volumes of treatment residues and mixtures which contain even minute quantities of listed waste are deemed to be hazardous wastes, even when they pose little or no risks. Thus, the narrower an original listing is, the less troublesome will be the multiplier effect of the mixture and derived-from rules.

(PMLP 000 15. API, page 2)

The Council has historically advocated a contingent management approach as appropriate for low risk wastes. The Council continues to advocate that any listing of hazardous waste should be limited to only those waste streams that are shown to pose significant risks to human health or the environment when improperly managed in a plausible mismanagement scenario. Specifically, when EPA has determined that a waste may pose significant risks when managed by a given plausible method *(e.g.,* disposal in unlined surface impoundments as per this proposal), but not when actually managed by other methods *(e.g.,* management in tanks and containers prior to discharge to a POTW or under a NPDES permit in this case), EPA should condition the listing by making it applicable only to wastes disposed of in a manner that is actually expected to pose significant risks.

The Council continues to urge EPA, as a general matter, to use a contingent management listing approach as an alternative to the more generic and conservative descriptive listing approach that identifies wastes as hazardous without specifying the concentrations of the chemicals or management practices that would pose significant risk. This approach frequently subjects wastes that pose no significant risks to the costs and other burdens of regulation as "hazardous waste" under Subtitle C of RCRA.

The Council strongly encourages the Agency to adopt a contingent management listing approach for paint manufacturing wastes if, in fact, it is determined that the proposed listing is warranted. Under the proposed listing, paint manufacturing waste liquids that meet the K180 listing description would be hazardous wastes unless managed exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. 66 Fed. Reg. at 10116. The Council commends EPA for squarely asserting its authority to consider the way wastes are managed in determining whether they are hazardous. We have long agreed that the Agency has the authority to take this step based on RCRA's statutory language, case law interpreting such language and EPA's own prior positions.

Looking first at the statute, RCRA does not require EPA to assume mismanagement of a waste in making hazardous waste determinations. The definition of "hazardous waste," Section 1004(5)(B), defines as "hazardous" those wastes that may present a hazard "when improperly. . . managed." This language authorizes EPA to determine whether, and under what management conditions a waste may present a hazard, and to regulate the waste as hazardous only under such conditions, *i.e.,* when it is mismanaged.

Section 300 1(a) instructs EPA to determine whether wastes meeting the RCRA Section 1004(5) definition "should" be subject to Subtitle C requirements, and thus authorizes EPA to determine whether Subtitle C regulation is necessary and appropriate in the course of deciding whether to designate such wastes as "hazardous." Clearly, the Administrator may lawfully determine not to designate wastes managed under a contingent management scenario as hazardous, because the wastes will not present a significant risk when so managed.

EPA's authority to consider alternative management scenarios has been confirmed in at least three decisions of the United States Court of Appeals for the District of Columbia Circuit. In Edison Electric Institute v. EPA, 2 F.3d 438 (D.C. Cir. 1993), the court noted that EPA is "certainly free" to classify wastes on a specific management-based approach, rather than generic mismanagement scenarios. *Id.* at 446. In NRDC v. EPA, 25 F.3d 1063 (D.C. Cir. 1994), the court upheld EPA's finding that used oil destined for disposal did not need to be listed in light of the unlikelihood of improper management and the existence of regulatory programs otherwise applicable to it. Ld. at 1070-72. In Military Toxics Project v. EPA, 146 F.3d 948 (D.C. Cir. 1998), the court found that, if EPA concludes that a waste might pose a hazard only under limited management scenarios, EPA can reasonably and permissibly determine that the waste should be regulated as hazardous only under those scenarios. In the Military Toxics Project decision, EPA reasonably determined that waste munitions would not pose a hazard if managed in accordance with existing military munitions handling regulations.

As noted in the NRDC decision, EPA's existing regulatory structure already provides for the consideration of plausible mismanagement scenarios in listing and identifying hazardous wastes. 40 C.F.R. § 261.10; 261.1l(a)(3)(vii), (x). In recent rulemakings, EPA has become increasingly cognizant of the wisdom of establishing specific management standards for various categories of materials rather than subjecting them to full Subtitle C regulation. See *e.g.,* Petroleum Refining Process Wastes, 60 Fed. Reg. 5 7776-80 (Nov. 20, 1995); Dye and Pigment Industries: Hazardous Waste Listing Determination Policy, 59 Fed. Reg. 66072-114 (Dec. 22, 1994); Regulatory Determination on Cement Kiln Dust, 60 Fed. Reg. 7366-77 (Feb. 7, 1995); and

Chlorinated Aliphatics Production Wastes, 65 Fed. Reg. 67096-7 (Nov. 8, 2000). Indeed, this practice has become more the rule than the exception in recent hazardous waste listing determinations. It is therefore entirely reasonable and appropriate for the proposed Paint Production Wastes rule to take management standards into account towards distinguishing those management scenarios that pose a significant risk from those that do not.

(PMLP 00030. ACC, page 4, 5)

NPCA generally applauds the use of contingent management as it targets the necessary management scenarios without impacting all management systems. Contingent management is especially appropriate for low risk wastes such as paint production wastes. Any waste listing determination should be limited in scope, whenever possible, to only those waste streams that are shown to pose significant actual or potential risks to human health or the environment when improperly managed in a plausible management scenario, but not when actually managed by other methods that do not pose a significant risk. NPCA urges EPA to continue to use this more tailored approach as an alternative to the ultra-conservative "across the board" listing approach, which frequently subjects wastes that pose no significant risks to the cost and other burdens of regulation under RCRA's Subtitle C.

Under the Proposed Rule, paint manufacturing waste liquids that meet the K180 listing description would be hazardous wastes unless managed exclusively in tanks or containers prior to discharge to a POTW or under a National Pollutant Discharge Elimination System (NPDES) permit.[49] NPCA agrees EPA's authority to implement contingent management in rulemakings is based on RCRA statutory language and case law. Specifically, it is arbitrary for EPA to make a hazardous waste determination that is not based on evidence of actual waste handling practices. RCRA Section 1 004(5)(B) defines hazardous wastes as those wastes that may present a hazard "when improperly. . .managed." This language authorized EPA to determine whether, and under what management conditions, a waste may present a hazard and to regulate the waste as hazardous only under such conditions (i.e. when it is mismanaged). RCRA Section 300 1(a) instructs EPA to determine whether wastes meeting the Section 1004(5) definition "should" be subject to Subtitle C requirements, thereby authorizing EPA to determine whether Subtitle C regulation is necessary and appropriate in the course of deciding whether to designate such wastes as hazardous. Clearly then, EPA may lawfully determine not to designate wastes managed under a contingent management scenario as hazardous, because the wastes as managed do not pose a significant risk to human health or the environment.

EPA's authority to consider alternative management scenarios has been confirmed in three recent decisions of the United States Court of Appeals for the District of Columbia. In Edison Electric Institute v. U.S. Environmental Protection Agency, 2 F.3d 438 (D.C. Cir. 1993), the court confirmed that EPA has the discretion not to regulate as hazardous wastes materials meeting the Section 1004(5)(B) definition if the materials will not actually be mismanaged and therefore will not pose substantial hazards to human health or the environment. Id at 446 (noting that EPA is "certainly free" to classify wastes as hazardous or not based on how they are actually managed, rather than on the basis of generic mismanagement scenarios). In Natural Resources Defense Council v. EPA, 25 F.3d 1063 (D.C. Cir. 1994), the court upheld EPA's finding that used oil destined for disposal did not need to be listed in light of the unlikelihood of improper waste management and the existence of regulatory programs otherwise applicable to it. Id. at 1070-72. EPA is correct to conclude, as it did in the recent Proposed Rule for petroleum refining process wastes, that "EPA does not believe . . . worst-case [mismanagement] assumptions are compelled by the statute."[50] As the Agency notes, the NRDC decision did not address the petitioners' argument that taking management standards into account violated RCRA because the petitioners had failed to raise the argument during the comment period. Even the dissent, however, "note[d] . . . that this claim appears to run counter to the language of the regulations which expressly permits the EPA to consider. . . 'plausible' scenarios of mismanagement . . in deciding whether to list any given waste as hazardous. We would effectively be excising th[is] factor[.] from the regulations were we to require that the EPA always posit the complete ineffectiveness of every other regulatory system." Id. at 1080 n.4. Indeed, requiring an assumption of mismanagement would appear to be a challenge to the 40 C.F.R. § 261.11(a)(3)(vii) listing factor, which is now immune from judicial review.

In Military Toxics Project v. EPA, 146 F.3d 948 (D.C. Cir. 1998), the court found that, if EPA concludes that a waste might pose a hazard only under limited management scenarios, EPA can reasonably and permissibly determine that the waste should be regulated as hazardous only under those scenarios. In the Military Toxics Project decision, EPA reasonably determined that waste munitions would not pose a hazard if managed in accordance with existing military munitions handling regulations. As noted in the NRDC decision, EPA's existing regulatory structure, no longer subject to judicial review, already provides for the consideration of plausible mismanagement scenarios in listing and identifying hazardous wastes. 40 C.F.R. § § 261.10; 261.11(a)(3)(vii), (x). In recent rulemakings, EPA has become increasingly cognizant of the wisdom of establishing specific management standards for various categories of materials rather than subjecting them to full Subtitle C regulation.[51] Indeed, this practice has become more the rule than the exception in hazardous waste listing rulemakings. It is therefore entirely reasonable and appropriate for the Paint Production Wastes rule to take management standards into account towards distinguishing those management scenarios that pose a hazard from those that do not.

While NPCA firmly believes that there is no basis for the proposed hazardous waste listing determination, NPCA encourages EPA to adopt a contingent management listing approach for paint manufacturing liquid wastes if, in fact, EPA finalizes a the rule over NPCA's objections. Based on the same authority, NPCA also suggests the same approach be used for paint manufacturing solid wastes, if EPA finalizes the determination for waste solids over NPCA's objections.

49 66 Fed. Reg. 10116 (Feb. 13, 2001)

50 60 Fed. Reg. 57777 (Nov. 20, 1995)

51 See, e.g., "Petroleum Refining Process Wastes," 60 Fed. Reg. *57776-80* (Nov. 20, 1995);

"Dye and Pigment Industries; Hazardous Waste Listing Determination Policy," 59 Fed. Reg. 66072-114 (Dec. 22, 1994); "Regulatory Determination on Cement Kiln Dust," 60 Fed. Reg. 7366-77 (Feb. 7, 1995); and "Chlorinated Aliphatics Production Wastes," 65 Fed. Reg 67096-7 (Nov. 8, 2000).

(PMLP 00033. NPCA, page 30, 31, 32 w/attachments)

DuPont has historically advocated a contingent management approach as appropriate for low risk wastes. DuPont continues to advocate that any listing of hazardous waste should be limited in scope, whenever possible, to only those waste streams that are shown to pose significant risks to human health or the environment when improperly managed in a plausible mismanagement scenario. Specifically, when EPA has determined that a waste may pose significant risks when managed by a given plausible method (e.g., disposal in unlined surface impoundments), but not when actually managed by other methods (e.g., management in tanks and containers prior to discharge to a POTW or under a NPDES permit), EPA should condition the listing by making it applicable only to wastes disposed of in the manner that poses significant risks.

DuPont continues to urge EPA, as a general matter, to use the more tailored, contingent management listing approach as an alternative to the ultra-conservative "across-the board" listing

approach, which frequently subjects wastes that pose no significant risks to the costs and other burdens of regulation as "hazardous waste" under Subtitle C of RCRA.

Under the proposed listing, paint manufacturing waste liquids that meet the K180 listing description would be hazardous wastes unless managed exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. 66 FR, 10116 (February 13, 2001). DuPont commends EPA for squarely asserting its authority to consider the way wastes are managed in determining whether they are hazardous. We have long agreed that the Agency has the authority to take this step based on RCRA's statutory language, case law interpreting such language and EPA's own prior positions.

Looking first at the statute, RCRA does not require EPA to assume mismanagement of a waste in making hazardous waste determinations. The definition of "hazardous waste," Section 1004(5)(B),'defines as "hazardous" those wastes that may present a hazard "when improperly... managed." This language authorizes EPA to determine whether, and under what management conditions, a waste may present a hazard, and to regulate the waste as hazardous only under such conditions, i.e., when it is mismanaged.

Section 3001(a) instructs EPA to determine whether wastes meeting the RCRA Section 1004(5) definition "should" be subject to Subtitle C requirements, and thus authorizes EPA to determine whether Subtitle C regulation is necessary and appropriate in the course of deciding whether to designate such wastes as "hazardous." Clearly, the Administrator may lawfully determine not to designate wastes managed under a contingent management scenario as hazardous, because the wastes will be properly managed.

EPA'S authority to consider alternative management scenarios has been confirmed in three recent decisions of the United States Court of Appeals for the District of Columbia Circuit. In Edison Electric Institute v. EPA, 2 F.3d 438 (D.C. Cir. !993), the court confirmed that EPA has the discretion not to regulate as hazardous wastes materials meeting the Section 1004(5)(B) definition if the materials will not actually be mismanaged and therefore will not pose substantial hazards to human health or the environment. Id at 446 (noting that EPA is "certainly free" to classify wastes as hazardous or not based on how they are actually managed, rather than on the basis of generic mismanagement scenarios). In NRDC v. EPA, 25 F.3d 1063 (D.C. Cir. 1994), the court upheld EPA's finding that used oil destined for disposal did not need to be listed in light of the unlikelihood of improper waste management and the existence of regulatory programs otherwise applicable to it. Id at 1070-72. EPA is correct to conclude, as it did in the recent proposed rule for petroleum refining process wastes, that "worst-case mismanagement... assumptions are not compelled by the statute." 60 FR 57777 (Nov. 20, 1995) As the Agency notes, the NRDC decision did not address the petitioners' argument that taking management standards into account violated RCRA because the petitioners had failed to raise the argument during the comment period. Even the dissent, however, "note[d] . . . that this claim appears to run counter to the language of the regulations which expressly permits the EPA to consider... 'plausible' scenarios of mismanagement. . . in deciding whether to list any given waste as hazardous. We would effectively be excising th[is] factor[] from the regulations were we to require that the EPA always posit the complete ineffectiveness of every other regulatory system." Id. at 1080 n.4. Indeed, requiring an assumption of mismanagement would appear to be a challenge to the 40 C.F.R. § 261.11 (a)(3)(vii) listing factor, which is now immune from judicial review. In Military Toxics Project v. EPA. 146 F.3d 948 (D.C. Cir. 1998), the court found that, if EPA concludes that a waste might pose a hazard only under limited management scenarios, EPA can reasonably and permissibly determine that the waste should be regulated as hazardous only under those scenarios. In the Military Toxics Project decision, EPA reasonably determined that waste munitions would not pose a hazard if managed in accordance with existing military munitions handling regulations.

As noted in the NRDC decision, EPA's existing regulatory structure, no longer subject to judicial review, already provides for the consideration of plausible mismanagement scenarios in listing and identifying hazardous wastes. 40 C.F.R. §§ 261.10; 261.11(a)(3)(vii), (x). In recent rulemakings, EPA has become increasingly cognizant of the wisdom of establishing specific management standards for various categories of materials rather than subjecting them to full Subtitle C regulation. See, e.g., Petroleum Refining Process Wastes, 60 FR 57776-80 (Nov. 20, 1995); Dye and Pigment Industries; Hazardous Waste Listing Determination Policy, 59 FR 66072-114 (Dec. 22, 1994); Regulatory Determination on Cement Kiln Dust, 60 FR 7366-77 (Feb. 7, 1995); and Chlorinated Aliphatics Production Wastes, 65 FR 67096-7 (Nov. 8, 2000). Indeed, this practice has become more the rule than the exception in hazardous waste listing rulemakings. It is therefore entirely reasonable and appropriate for the Paint Production Wastes rule to take management standards into account towards distinguishing those management scenarios that pose a hazard from those that do not.

DuPont strongly encourages the Agency to adopt a contingent management listing approach for paint manufacturing wastes if, in fact, it is determined that the proposed listing is warranted.

(PMLP 00041. DuPont, page 20, 21, 22, w/attachments)

Contingent based listings are another important tool in ensuring appropriate regulation. Wastewaters treated and discharged under controls imposed by the Clean Water Act do not require additional regulation under RCRA. Such an approach is not only appropriate based on Section 1006 of RCRA, but also is consistent with the management of characteristic hazardous wastes managed in wastewater treatment units under current regulations.

(PMLP L0002. GE p.5)

II. INDUSTRIES AND WASTES COVERED IN THIS RULE

EPA received a number of comments on its proposed hazardous waste listings for paint production wastes concerning the scope of the listings, definition of a paint manufacturer, and off-specification products and recycling issues. The summarys of comments and verbatim comments received on each of these areas of concern are provided below. Because the Agency has determined not to list any of the paint production wastes as proposed, the proposed provisions are no longer necessary. Therefore, the Agency is addressing individual comments only where these comments need to be addressed and not addressing other comments on the proposed provisions for paint wastes. It should, however, be noted that there are no changes to the current federal RCRA program as it relates to paint production wastes. Many commenters remarked on the use of residues in the paints industry. The federal RCRA regulations have not changed. Residues that are byproducts and sludges under RCRA that exhibit a hazardous waste characteristic are not considered solid wastes when legitimately reclaimed and reused to make paint products. Residues that do not fall into these categories (e.g., spent materials), remain regulated as they were prior to this rulemaking. (See 40 CFR 261.2). The Agency would like to clarify that under the current federal RCRA regulations, unused paint products are classified as commercial chemical products.

A. Scope of the listings

1. Five waste streams

***SUMMARY* OF COMMENT**

The Agency received one comment from DuPont on the scope of the listing determination. They requested that the final rule provide clarification on paint production wastes that are not necessarily from cleaning paint production tanks and equipment with solvents, water and/or caustic. They also requested clarification on what is considered to be paint production tanks and equipment.

VERBATIM COMMENT

Paint production facilities generate several wastes related to paint production that are not necessarily from cleaning paint production tanks and equipment with solvents, water and/or caustic. These wastes include, but are not limited to, sample containers and related collection devices, sprayed test panels, spray booth wastewater and solids, spray booth filters, lab equipment and associated cleaning wastes, paint contaminated rags and towels, mop heads from cleaning up de minimis spills of unfinished and finished product, empty mop buckets, floor sweepings, personal protective equipment, clothing, spent filter media from product filtration and heels in containers otherwise meeting the definition of “RCRA empty”. Many of these wastes are associated with product evaluation and application testing, contaminated with de minimis amounts of material or are already otherwise exempt (e.g., they are empty containers). Nevertheless, DuPont is concerned that, absent a direct and definitive clarification in the final rule, EPA enforcement officials, state regulatory agencies and the regulated community may misinterpret the scope of the proposed listings.

DuPont, therefore, respectfully requests that the Agency provide such clarifications in any final rule that lists paint waste solids or liquids as hazardous. In addition to addressing each of the above wastes, we believe it would be particularly helpful to clarify what are considered to bepaint production tanks and equipment. We believe that this clarification may be most helpful if described in terms of the basic unit operations and in a way that specifies what equipment beyond tanks and ancillary piping is included within the scope of the listings.

(PMLP 00041. DuPont, page 37, 38, w/attachments)

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2. Definition of paints and coatings

***SUMMARY* OF COMMENTS**

The Agency received three comments from industry on the definition of paints and coatings. The three commenters, Magruder, BF Goodrich Hilton Davis, Inc., and CDR Pigments & Dispersions, manufacture printing ink varnish. Each stated that EPA has defined varnish without qualification to include printing ink varnishes which are not used in paints or paint-like applications, and therefore they are regulated by the proposed rule. They further state: that manufacturers of printing ink varnish do not use the types of waste management systems identified in the proposed rule; the constituents of concern are not relevant to the production of printing ink varnish; EPA did not assess any of the wastes generated by producers of printing ink varnish; EPA did not identify with any reasonable precision which industries are included in this rule, and; wastes from the production of printing ink varnish are limited to production vessel cleanout wastewater and off-specification product that do not pose a significant threat to human health and the environment. They conclude by stating that the listing of varnish, without qualification, to include printing ink varnish is not substantiated and as a result is an arbitrary and capricious administrative action.

VERBATIM COMMENTS

Magruder does not manufacture paints or related products or handle wastes from such products. Magruder is in the business of manufacturing organic pigments. Magruder also manufactures dispersions of pigments and additives to be used in the manufacture of printing ink. Since EPA has not qualified the term “varnish” to involve paints or coatings with the characteristics of paints, Magruder, as a manufacturer of printing ink varnish for use in dispersions and inks would be regulated by the Proposed Rule. It should be noted that modern complex polymeric printing ink vehicles are not properly classified as traditional varnishes.

(PMLP 00001. Magruder, page 2)

EPA proposes to list certain waste liquids and solids from the manufacturing of paint.

Listed in this Proposed Rule are:

> K179 "Paint manufacturing waste solids generated by paint manufacturing facilities that at the point of generation, contain any of the constituents identified in paragraph (b) (6) (iii) of this section at a concentration equal to or greater than the hazardous level set for the constituent in paragraph (b) (6) (iii) of this section..." and
>
> K180 "Paint manufacturing waste liquids generated by paint manufacturing facilities that, at the point of generation, contain any of the constituents identified in paragraph (b) (6) (iii) of this section at a concentration equal to or greater than the hazardous level set for that constituent identified in paragraph (b) (6) (iii) of this section.... ." 66 Fed. Reg. 10133.

The Proposed Rule defines the term "paint manufacturing facility". The term is defined to include:

> "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), but the term does not Environmental Protection Agency include a facility that exclusively produces miscellaneous allied products (including paint and varnish removers, thinners for lacquers or other solvent based paint products, pigment dispersions or putty) or artist paints." [emphasis added] 66 Fed. Reg. 10133

Therefore, EPA has defined varnish without qualification to include apparently printing ink varnishes which are not used in paints or paint-like applications. Since printing ink varnish is a major constituent of most, if not all, commercial printing inks, EPA has in effect proposed to regulate much of the printing ink industry. Upon review of the Proposed Rule, we find that EPA has neither substantiated that varnish for any purpose should be regulated nor that the production of printing ink varnish should be regulated.

Our concerns, which have lead us to this conclusion are provided below:

- To our knowledge manufacturers of printing ink varnish and Magruder in particular, do not use the types of waste management systems that EPA has identified as being of concern and potentially a significant risk.

- The constituents of concern identified by EPA for wastes generated as a result of paint production are not relevant to the production of printing ink varnish.
- EPA did not assess any of the wastes generated by producers of printing ink varnish in preparing the Proposed Rule.
- EPA has failed to identify with any reasonable precision which industries are included in this rule.
- Wastes from the production of printing ink varnish are limited generally to production vessel cleanout wastewater and possibly off-specification product. These wastes do not pose a significant threat to human health or the environment. When appropriate, these wastes are disposed of as hazardous waste under the existing regulatory structure based on hazardous waste characteristics.

(PMLP 00001. Magruder, page 2,3,4,5)

With respect to solid wastes generated in the production of paint wastes, EPA proposes a concentration based listing whereby waste solids generated or treated after generation are not hazardous if these waste solids do not contain constituents above a specific level. In the production of printing ink varnish, we do not believe that these constituents would be present in a waste solid. There is very little if any waste solid generated in the production of varnish. The only source of such solid would be dust collector material and wastewater treatment sludge. Off-specification product is unlikely to be generated as a waste. If such were the case, the off—specification waste solid would be disposed of as a solid varnish. Much like a solid paint. 66 Fed. Reg. 10078. Since our waste solids, to the extent such exists, do not contain any intentionally added components that would yield constituents and concentrations above those cited in the Proposed Rule, the wastes generated from printing ink varnish production should not be listed: 66 Fed. Reg. 10135.

(PMLP 00001. Magruder, page 8)

Magruder does not generate wastes which contain the constituents EPA identifies at paragraph 261.32(b)(6)iii in concentration sufficient to warrant concern. These constituents are not relevant to our industry. Again, printing ink varnish should not have been included by default in the catch-all term “varnish.” In general, the production of ink varnish involves a mixture of resins, complex polymeric printing ink vehicles, soy or linseed oil, petroleum distillate and tall or fatty oils. There are no intentional additions of any listed constituent. Since there are no intentional additions of these ingredients, waste waters will not contain these ingredients in concentrations even near those cited in the Proposed Rule.

(PMLP 00001. Magruder, page 8, 9)

There is no indication in the Proposed Rule that EPA analyzed any specific facility producing varnish or any specific facility producing printing ink varnish. Magruder has not in any way taken part in this rulemaking. Therefore, to our knowledge it is not possible for EPA to have adequately assessed our industry.

(PMLP 00001. Magruder, page 9)

There is no indication in the Proposed Rule that EPA intended to regulate a significant portion of the printing ink industry. Indeed, there is no explanation of varnish, varnish production facilities, wastes generated from such facilities or ingredients. This is apart from any discussion of the use of varnish to manufacture printing inks, primarily used on paper and cardboard substrates. The entire text of the Proposed Rule appears to describe commercial and consumer paint coatings to include everything from house paint to truck coatings and architectural coatings. If EPA were unaware that the vast majority of printing inks were made with varnish then printing ink varnish clearly should be removed specifically from regulation under this Proposed Rule.

(PMLP 00001. Magruder, page 10)

The listing of varnish, without qualification, to include printing ink varnish by default is not substantiated in the Proposed Rule and would be, as a result, an example of arbitrary and capricious administrative action.

(PMLP 00001. Magruder, page 10)

Hilton Davis does not manufacture paints or related products or handle wastes from such products. Hilton Davis is in the business of manufacturing organic pigments. Hilton Davis also manufactures dispersions of pigments and additives to be used in the manufacture of printing ink. Since EPA has not qualified the term “varnish” to involve paints or coatings with the characteristics of paints, Hilton Davis, as a manufacturer of printing ink varnish for use in dispersions and inks would be regulated by the Proposed Rule. It must be noted that modern polymer based printing ink vehicles are not properly described as varnish.

(PMLP 00004. BF Goodrich Hilton Davis, Inc., page 2)

EPA proposes to list certain waste liquids and solids from the manufacturing of paint. Listed in this Proposed Rule are:

K179 “Paint manufacturing waste solids generated by paint manufacturing facilities that at the point of generation, contain any of the constituents identified in paragraph

(b) (6) (iii) of this section at a concentration equal to or greater than the hazardous level set for the constituent in paragraph (b) (6) (iii) of this section...” and

K180 “Paint manufacturing waste liquids generated by paint manufacturing facilities that, at the point of generation, contain any of the constituents identified in paragraph (b) (6) (iii) of this section at a concentration equal to or greater than the hazardous level set for that constituent identified in paragraph (b) (6) (iii) of this section. “ 66 Fed. Reg. 10133.

The Proposed Rule defines the term “paint facility”. The term is defined to include:

> “A facility that produces paints (including undercoats, primers, 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), but the term does not include a facility that exclusively produces miscellaneous allied products (including paint and varnish removers, thinners for lacquers or other solvent based paint products, pigment dispersions or putty) or artist paints.” [emphasis added] 66 Fed. Reg. 10133

Therefore, EPA has defined varnish without qualification to include apparently printing ink varnishes which are not used in paints or paint-like applications. Since printing ink varnish is a major constituent of most, if not all, commercial printing inks, EPA has in effect proposed to regulate much of the printing ink industry. Upon review of the Proposed Rule, we find that EPA has neither substantiated that varnish for any purpose should be regulated nor that the production of printing ink varnish should be regulated.

Our concerns, which have led us to this conclusion are provided below:

- To our knowledge manufacturers of printing ink varnish and Hilton Davis in particular, do not use the types of waste management systems that EPA has identified as being of concern and potentially a significant risk.
- The constituents of concern identified by EPA for wastes generated as a result of paint production are not relevant to the production of printing ink varnish.
- EPA did not assess any of the wastes generated by, producers of printing ink varnish in preparing the Proposed Rule.
- EPA has failed to identify with any reasonable precision which industries are included in this rule.
- Wastes from the production of printing ink varnish are limited generally to production vessel clean out wastewater and possibly of off- specification product. These wastes do not pose a significant threat to human health or the environment.

– When appropriate, these wastes are disposed of as hazardous waste under the existing regulatory structure based on hazardous waste characteristics.

(PMLP 00004. BF Goodrich Hilton Davis, Inc., page 2, 3, 4, 5)

With respect to solid wastes generated in the production of paint wastes, EPA proposes a concentration based listing whereby waste solids generated or treated after generation are not hazardous if these waste solids do not contain constituents above a specific level. In the production of printing ink varnish, we do not believe that these constituents would be present in a waste solid. There is very little if any waste solid generated in the production of varnish. The only source of such solid would be dust collector material and wastewater treatment sludge. Off-specification product is unlikely to be generated as a waste. If such were the case, the off-specification waste solid .would be disposed of as a solid varnish. Much like a solid paint. 66 Fed. Reg. 10078. Since our waste solids, to the extent such exists, do not contain any intentionally added components that would yield constituents and concentrations above those cited in the Proposed Rule, the wastes generated from printing ink varnish production should not be listed. 66 Fed. Reg. 10135.

Hilton Davis does not generate wastes which contain the constituents EPA identifies at paragraph 261.32 (b) (6) iii in concentration sufficient to warrant concern. These constituents are not relevant to our industry. Again, printing ink varnish should not have been included by default in the catch-all term “varnish”. In general, the production of ink varnish involves a mixture of resins, polymer based resins, soy or linseed oil, petroleum distillate and tall or fatty oils. There are no intentional additions of any listed constituent. Since there are no intentional additions of these ingredients, waste waters will not contain these ingredients in concentrations even near those cited in the Proposed Rule.

There is no indication in the Proposed Rule that EPA analyzed any specific facility producing varnish or any specific facility producing printing ink varnish. Hilton Davis has not in any way taken part in this rulemaking. Therefore, to our knowledge it is not possible for EPA to have adequately assessed our industry.

There is no indication in the Proposed Rule that EPA intended to regulate a significant portion of the printing ink industry. Indeed, there is no explanation of varnish, varnish production facilities, wastes generated from such facilities or ingredients. This is apart from any discussion of the use of varnish to manufacture printing inks, primarily used on paper and cardboard substrates. The entire text of the Proposed Rule appears to describe commercial and consumer paint coatings to include everything from house paint to truck coatings and architectural coatings. If EPA were unaware that the vast majority of printing inks were made with varnish then printing ink varnish clearly should be removed specifically from regulation under this Proposed Rule.

The listing of varnish, without qualification, to include printing ink varnish by default is not substantiated in the Proposed Rule and would be, as a result, an example of arbitrary and capricious administrative action.

(PMLP 00004. BF Goodrich Hilton Davis, Inc., page 7, 8, 9, 10)

Neither CDR nor Flint Ink Corporation would appear to manufacture paints or related products or handle wastes from such products. CDR is in the business of manufacturing organic pigments almost exclusively for the printing ink industry, including Flint Ink. CDR also manufactures dispersions of pigments and additives to be used in the manufacture of printing ink. Since EPA has not qualified the term “varnish” to involve paints or coatings with the characteristics of paints, CDR, as a manufacturer of printing ink varnish for use in dispersions and inks would be regulated by the Proposed Rule.

EPA proposes to list certain waste liquids and solids from the manufacturing of paint. Listed in this Proposed Rule are:

> K179 Paint manufacturing waste solids generated by paint manufacturing facilities that at the point of generation, contain any of the constituents identified in paragraph (b) (6) (iii) of this section at a concentration equal to or greater than the hazardous level set for the constituent in paragraph (b) (6) (iii) of this section . . . and
>
> K180 Paint manufacturing waste liquids generated by paint manufacturing facilities that, at the point of generation, contain any of the constituents identified in paragraph (b) (6) (iii) of this section at a concentration equal to or greater than the hazardous level set for that constituent identified in paragraph (b) (6) (iii) of this section... 66 Fed. Reg. 10133.

Proposed Rule defines the term “paint manufacturing facility”. The term is defined to include:

> “A facility that produces paints (including undercoats, primers, finishes, sealers, enamels, refinish paints, and tinting bases), stains, <u>varnishes</u> (including lacquers), product finishes for original equipment manufacturing and industrial application, and, coatings (including special purpose coatings and powder coatings), but the term does not include a facility that exclusively produces miscellaneous allied products (including paint and varnish removers, thinners for lacquers or other solvent based paint products, pigment dispersions or putty) or artist paints.? [emphasis added] 66 Fed. Reg. 10133

Therefore, EPA has defined varnish without qualification to include apparently printing ink varnishes which are not used in paints or paint-like application. Printing ink varnishes are known to consist of complicated polymeric vehicle systems. Since printing ink varnish is a major constituent of most, if not all, commercial printing inks, EPA has in effect proposed to regulate much of the printing ink industry. Upon review of the Proposed Rule, we find that EPA has neither substantiated that varnish for any purpose should be regulated nor that the production of printing ink varnish should be regulated.

Our concerns, which have led us to this conclusion are provided below:

- To our knowledge manufacturers of printing ink varnish and CDR in particular, do not use the types of waste management systems that EPA has identified as being of concern and potentially a significant risk.
- The constituents of concern identified by EPA for wastes generated as a result of paint production are not relevant to the production of printing ink varnish.
- EPA did not assess any of the wastes generated by producers of printing ink varnish in preparing the Proposed Rule.
- EPA has failed to identify with any reasonable precision which industries are included in this rule.
- Wastes from the production of printing ink varnish are limited generally to production vessel clean out wastewater and possibly off-specification product. These wastes do not pose a significant threat to human health or the environment. When appropriate, these wastes are disposed of as hazardous waste under the existing regulatory structure based on hazardous waste characteristics.

(PMLP 00005. CDR Pigments & Dispersions, page 2, 3, 4, 5)

With respect to solid wastes generated in the production of paint wastes, EPA proposes a concentration based listing whereby waste solids generated or treated after generation are not hazardous if these waste solids do not contain constituents above a specific level. In the production of printing ink varnish, we do not believe that these constituents would be present in a waste solid. There is very little if any waste solid generated in the production of varnish. The only source of such solid would be dust collector material and wastewater treatment sludge. Off-specification product is unlikely to be generated as a waste. If such were the case, the off-specification waste solid would be disposed of as a solid varnish. Much like a solid paint. 66 Fed. Reg. 10078. Since our waste solids, to the extent such exists, do not contain any intentionally added components that would yield constituents and concentrations above those cited in the Proposed Rule, the wastes generated from printing ink varnish production should not be listed. 66 Fed. Reg. 10135.

CDR does not generate wastes which contain the constituents EPA identifies at paragraph 261.32(b) (6)iii in concentration sufficient to warrant concern. These constituents are not relevant to our industry. Again, printing ink varnish should not have been included by default in the catchall term “varnish”. In general, the production of ink varnish involves polymers, a mixture of resins, soy or in some cases linseed oil, petroleum distillate and tall or fatty oils. There are no intentional additions of any listed constituent. Since there are no intentional additions of these ingredients waste waters will not contain these ingredients in concentrations even near those cited in the Proposed Rule.

There is no indication in the Proposed Rule that EPA analyzed any specific facility producing varnish or any specific facility producing printing ink varnish. CDR has not in any way taken part in this rulemaking. Therefore, to our knowledge it is not possible for EPA to have adequately assessed our industry.

There is no indication in the Proposed Rule that EPA intended to regulate a significant portion of the printing ink industry. Indeed, there is no explanation of varnish, varnish production facilities, wastes generated from such facilities or ingredients. This is apart from any discussion of the use of varnish to manufacture printing inks, primarily used on paper and cardboard substrates. The entire text of the Proposed Rule appears to describe commercial and consumer paint coatings to include everything from house paint to truck coatings and architectural coatings. If EPA were unaware that the vast majority of printing, inks were made with varnish then printing ink varnish clearly should be removed specifically from regulation under this Proposed Rule.

The listing of varnish, without qualification, to include printing ink varnish by default is not substantiated in the Proposed Rule and would be, as a result, an example of arbitrary and capricious administrative action.

(PMLP 00005. CDR Pigments & Dispersions, page 7, 8, 9, 10, 11)

B. Definition of a paint manufacturer

***SUMMARY* OF COMMENTS**

The Agency received four comments, two from associations and two from industry on the definition of paint manufacturing facilities. NPCA and ICI Paints North America requested that EPA clearly define what facilities would be considered paint manufacturing facilities in the final rule. They are both concerned that warehouses and research and development facilities may be inadvertently subject to the proposed listing. SOCMA noted that many of its members engage in toll manufacturing. They stated that opportunities exist for recycling of secondary materials by toll manufacturers, however, theses opportunities are not taken advantage of because these secondary materials are considered solid and hazardous waste under RCRA.

GE commented that while the preamble and background documents clearly state that the scope of the proposed rule is limited to SIC 2851 (including 28511, 28512, and 28513) and NAICS 325510 sub codes -1, -4, and -7, the definition of "paint manufacturing" activities in the proposed regulatory language does not state this limitation. GE gave examples of custom paint products used to coat equipment produced at a variety of GE facilities. These custom paints are shipped from a paint manufacturer in two parts and combined at the facility where they are applied to manufactured equipment.

VERBATIM COMMENTS

...the first sentence in the preamble discussion concerning the scope of the rule limits it to very specific SIC and North American Industry Classification System (NAICS) classifications (including 28511, 28512, and 28513 of SIC 2851 and NAICS 325510 sub codes -1, -4, and -7. 66 Fed. Reg. 10066. Unfortunately, this limitation is not included in the regulatory language. The Listing Background Document placed in the regulatory docket reiterates at page 1-4 that the proposed rule applies to manufacturers in these SIC and NAIC classifications. The industry survey was limited to these SIC and NAIC classifications, and the analysis of environmental releases taken from the Toxics Release Inventory (TRI) was based on these industry codes. Despite all indications of EPA's intent in the supporting analyses and preamble language, the definition of "paint manufacturing" activities in the proposed regulatory language does not state this limitation.

[For example] At 66 Fed. Reg. 10068, EPA describes the paint and coatings industry. In discussing original equipment manufacturing (OEM) coatings, EPA states: "OEM product finishes are custom formulated for applications to products during the manufacturing process. This includes coatings applied to automobiles, appliances, machinery and equipment,... Special purpose paints are formulated for specific applications or extreme environmental conditions (fumes, chemicals, and temperature) and include: high-performance maintenance coatings (used in refineries, public utilities, bridges, etc.); automotive refinishing; highway traffic markings; aerosol paints; and marine coatings." EPA, while discussing paint production states, "Inorganic and organic chemicals comprise raw materials - solvents, resins (or "binders"), pigments, and additives that are mixed in a batch process to make solvent or water-based paint according to desired end-use specifications. Batches of paint, which may range in size from 10 to 10,000 gallons, are blended in stationary and portable equipment such as mixers, blenders, sand mills, and tanks."

Reading these statements together with the definition of "paint manufacturing" in the proposed regulatory language could result in regulation of thousands of businesses as paint manufacturers. Mixing chemicals and binders together to achieve the appropriate specifications to coat equipment manufactured in a variety of GE businesses, none of which falls within the SIC or NAICS codes studied, could be interpreted as paint manufacturing and thus subject GE to significant new regulatory requirements if clarification is not provided in the final rule. Many suppliers provide two-part coatings and other paints, accompanied by Manufacturing Safety Data Sheets (MSDS) that direct the user to mix Part A and Part B in the proportion needed to meet the specifications particular to that application.

For example, General Electric Power Systems (GEPS) conducts the following activities. Several sites mix commercial products that are shipped in two parts. Among commercial products mixed are Carboline 890 part A & B. These parts are mixed and the resulting product is applied to turbine inlet plenums to give them smoother surfaces to increase laminar flow. This material is also applied to stator frames and rotors for the same reason. Several sites also use C.A. Reeve 4010 NS-HB High Build Zinc Rich Primer Component A & B. This coating is applied to exterior surfaces of equipment we manufacture for its corrosion resistance. Sites also mix Carbo Zinc 11 base and zinc dust (special zinc filler).

Custom products are also made by vendors specifically for GEPS and are shipped in two parts that are then mixed on the manufacturing site. These mixtures include combining organic or inorganic chemicals with binders and additives. In one case, core plate enamel is mixed with kerosene, which is then applied to stator punches as insulating enamel. Sites that build and service generators use a variety of custom products in different applications. These are generally epoxy resins and hardeners that are used surface coatings, electrical insulators, and adhesives. In one case epoxy parts A&B are mixed, mica tape is soaked in the mixture, and the tape is applied to the ends of generator bars. This is done to increase electrical insulation of the bar ends. In another case, epoxy parts A&B are mixed with Cabosil (dry power) in a 1 gallon can and shaken for 15 minutes. The resulting mix is used to fill nomex end caps, which are applied to the ends of generator bars. The material is used for its insulation and adhesive properties. When the material dries, a similar but slightly different A&B mix is applied to fill voids and smooth surfaces.

GE Lighting (GEL) also mixes batches of Part A and B materials received as commercial products to meet end-use specifications. In the course of manufacturing fluorescent lamps, GEL uses phosphor coatings that are shipped in 55-gallon drums to the manufacturing plants. Before using the coatings, deionized water and possibly ammonia or other binders, are added to bring the coating up to the right viscosity and quality specifications. GEL also makes monogram ink to which solvents are added periodically to keep the concentration correct after evaporation and usage

Other GE businesses, including GE Appliances and GE Aircraft Engines also conduct activities that could be interpreted to meet the description of paint manufacture if it is described solely as mixing organic or inorganic chemicals with binders in batch processes to achieve precise specifications for coating GE manufactured products in those businesses.

If the preamble discussion quoted above accurately reflects EPA's view of paint manufacturing, many industries not studied prior to the listing, and unaware of potentially impending regulation could be covered in addition to one or more of the GE activities discussed above that, in our view, do not involve paint manufacturing. If this is the case, sufficient notice has not been provided potentially affected parties. If, as GE believes is the case, such a reading is broader than EPA intended, GE urges the Agency to clarify this situation by including the SIC and NAICS numbers in the final regulatory definition of paint manufacturing.

(PMLP L0002. GE, pp.2-4)

If a hazardous waste listing determination goes forward over NPCA objections, NPCA believes that it is very important that EPA clearly define what facilities would be considered "paint manufacturing facilities" under any final rule. NPCA is concerned that distribution warehouses and research and development (R&D) facilities may be inadvertently subject to the rulemaking. R&D facilities may produce paints, but would be limited to small-scale operations specifically for research and development purposes. R&D facilities should not be subject to the listing.

EPA states that the term "paint manufacturing facility" does not include a facility that exclusively prepares paint products (such as adding pigments to a tinting base) for sale to end users. EPA should not limit the exclusion to facilities that just prepare paint products for sale, since facilities may adjust tint base, or blend/inter-mix prior to distribution and not just sale to end users. instead, NPCA recommends that EPA exclude any facility that does not manufacture paint, but may just prepare paint or paint products.

EPA lists some of the integral aspects of the paint manufacturing process in the "Technical Background Document."[75] These include, but are not limited to preassembly/premixing; grinding/milling/dispersion; product finishing/blending; and product filling/packaging. A true "paint manufacturing facility" would have aspects of all of these processes. NPCA recommends the definition of "paint manufacturing facility" incorporate all processes integral to paint production, excluding those facilities that may only be involved in one or some combination thereof.

75 "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination," Jan. 17, 2001, page 4-1.

(PMLP 00033. NPCA, page 45, 46 w/attachments)

EPA must clearly define what facilities would be considered "paint manufacturing facilities" under any final rule. ICI Paints is concerned that warehouses and research and development (R&D) facilities may be inadvertently subject to the rulemaking. R&D facilities may produce paints, but would be limited to small-scale operations specifically for research and development purposes. R&D facilities should not be subject to the listing.

EPA states that the term "paint manufacturing facility" does not include a facility that exclusively prepares paint products (such as adding pigments to a tinting base) for sale to end users. EPA should not limit the exclusion to facilities that just prepare paint products for sale since facilities may adjust tint base prior to distribution not sale to end users. EPA should change the definition to exclude any facility that does not manufacture paint.

(PMLP 00039. ICI Paints North America, page 5)

C. Off specification products and recycling issues

SUMMARY OF COMMENTS

The Agency received 15 comments, four from associations and 11 from industry on off-specification products and recycling issues. The associations and one industry commenter supported the Agency's proposal that off-specification paint products that retailers or users return to the manufacturer will not be considered hazardous waste. However, most industry commenters did not support the Agency's decision to include within the scope of the proposed listing unused product once a manufacturer obtains possession or takes control of them. Those commenters stated that paint products which can be sold should also not be considered a waste. Duron Paint & Wall Coverings stated that they should be able to resell the returned unused paint to other customers and they sell off-specification product as lower grade product. NPCA states that EPA must clarify that off-specification products are not covered under the scope of any waste listing determination unless and until a facility decides to discard the product. NPCA, as well as ICI Paints North America, further pointed out confusion over language in the preamble on this subject that conflicted with the rule language.

Most of the commenters stated that the proposed rule would limit the recycling of paint production wastes and will result in a significant increase in the amount of waste generated by the industry. Many commenters also stated that the preamble language implies that unused paint can be recycled without limitations but that used paint products (e.g., solvents and sludges) would be limited. Akzo Nobel also stated that the proposed rule does not make clear the management requirements for paint manufacturing residues, other than unused paint. NPCA states that the preamble addresses unused paint product returned to a paint production facility but does not address auxiliary facilities (e.g., distribution warehouses) owned by the same parent company that may receive unused paint products. Commenters requested that EPA clarify those potential recycle/reuse/resale situations where returned paint would not be considered a waste. P.D. George Co. requested clarification of liquid and solid, noting that the liquid off-specification material is not within the scope of the proposed listing. Several commenters have asked for clarification on the reuse of paint Byproducts from paint manufacturing.

VERBATIM COMMENTS

As noted above, many SOCMA members engage in batch and custom chemical manufacturing operations. Batch processing provides an efficient and frequently the only method to make small quantities of chemicals to meet specific needs and consumer demands for specialized products.

Batch processors must be able to respond quickly to new requirements from customers, fill small market niches and develop new products. This segment of the chemical industry retains a high degree of entrepreneurship and must retain the flexibility to meet ever-changing needs and new technological developments.

Many SOCMA members also engage in toll manufacturing. Toll manufacturing is a specific type of custom chemical manufacturing arrangement used in the specialty chemical industry to enable a company to arrange with a second company, i.e., a "toller," to engage in contractually specified production activities on behalf of the first company, i.e., the "toll contractor." Opportunities exist for secondary materials generated by tollers to be returned to and recycled by toll contractors. Companies presently forgo these opportunities due to the regulation of these materials as "solid waste" and "hazardous waste" under RCRA.

As a result, SOCMA supports EPA's proposal to structure the paint waste listings in a manner designed to minimize the impact of these waste listings on product take back and recycling programs:

> EPA wants to clarify the effect of today's proposed listing on "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, based on what it knows of the industry, 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. ... 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, we are proposing that the paint would then become an off-specification paint product waste that would need to be evaluated against the concentrations proposed in today's rulemaking, as well as the hazardous waste characteristics. (66 Fed. Reg. at 10068.)

EPA apparently has recognized that extending the hazardous waste listing to paint production materials managed by customers, retailers or municipalities would have a detrimental impact on the reuse and recycling of those materials. By taking this approach, EPA has increased the potential for these paints to be collected and put to productive use or otherwise channeled for recycling or proper waste management. This is consistent with the goal of resource conservation and recovery paint collection.[7]

The experience of SOCMA members confirms that the Subpart C regulations similarly create substantial barriers to recycling within the custom and specialty chemical manufacturing sector. Several years ago, information obtained from SOCMA members determined that many toll contractors:

- Cannot receive secondary materials back from their toll manufacturers because the toll contractors either do not have RCRA Part B permits or have Part B permits that prohibit receipt of wastes not identified in advance during the permit application process.

- Want to recover valuable constituents from RCRA spent materials and byproducts generated by their toll manufacturers but cannot do so because of the impact of the RCRA regulatory definition of "solid waste."

- Believe the definition of "solid waste" impedes toll manufacturing by imposing additional costs and also results in waste of otherwise recoverable natural resources.

Based on this information and continuing input from its members regarding the need for modification of the definition of solid waste, SOCMA welcomes EPA's further recognition of the value of promoting and facilitating materials recovery and reuse in the paint manufacturing industry. SOCMA urges the Agency to continue its efforts to promote environmentally sound recycling opportunities for other industry sectors through further modifications to the current hazardous waste regulations.

7 Furthermore, this regulatory strategy is consistent with the fundamental concept that a material that is not "discarded" but is instead destined for reuse is not a "waste" subject to regulation under Subtitle C of RCRA. See Association of Battery Recyclers v. EPA. 208 F.3d 1047 (D.C. Cir. 2000).

(PMLP 00012. SOCMA, page 9, 10)

API supports EPA's clarification 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 thus that the paint being returned is not a hazardous waste even if it exhibits a characteristic" (66 FR 10068). That clarification is consistent with EPA's historical view of the "reverse distribution" concept, where an off-specification product is not a waste when returned to the manufacturer; it would become a waste subsequent to the return only if the manufacturer decides that the product can no longer be used.

(PMLP 00015. API, page 4)

EPA is proposing to go beyond the consent decree requirements to include within the scope of the proposed listing returned, unused products once a manufacturer obtains possession or control of them. EPA believes that "returned," unused products could pose risks similar to those posed by unused products that never go off site. And, as discussed above, facilities would find it cumbersome to distinguish between returned products and "never sent" products. EPA refers to all of these unused products that will not be sold for their original, intended use as "off-specification" paint products. Our concern is that its clear that product never sent off-site is off-specification, but what about a pallet of paint that is over sold and is returned to one of our facilities. We believe that Duron Inc. should be able to resell the returned unused paint to other customers. Paint should not be considered off-specification just because a customer returned it. In addition, Duron, Inc. considers product that is not warrantable as originally intended off-specification. We successfully sell off-specification product as lower grade product. Any regulation of this process would be burdensome and unwarranted.

(PMLP 00018. Duron Paints & Wall Coverings, page 1, 2)

RESPONSE

*In the preamble to the proposed rule, EPA discussed its jurisdiction over paint products returned to manufacturers when listed or characteristic. In the final rule, upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing wastes proposed as K179 and K180. However, EPA believes that the position stated in the preamble regarding reverse distribution systems is still applicable to paint wastes exhibiting a characteristic. To clarify, EPA believes that downstream entities (e.g., retailers) can presume that unused paint products returned to a paint production facility or auxilliary receiving facility will be legitimately reused and, thus, will not be a solid waste, even if it exhibits a hazardous waste characteristic. Once in the hands of paints producer, the regulatory status of the material depends on whether the material will be recycled or disposed. If the material is legitimately recycled (e.g., reused, resold, used as an ingredient), it is not a solid waste. If disposed, the materials becomes a solid waste and, if characteristic, a hazardous waste subject to regulation under RCRA. This clarification applies to any unused paint product**,** whether described in the industry as "off-specification" or "lower grade" or other product type. Therefore, a returned product that is resold to another customer would be considered reused and would not be classified as a waste at that point.*

One of our goals is to minimize production costs by minimizing wastes during production. We cannot afford to throw away solvent. We have out of necessity found uses for solvent that has been used to clean paint manufacturing tanks. The process is as follows: Solvent is designated for the use of cleaning tanks. This solvent is used to clean tanks that vary in size from 100 gal to 300 gal tanks. This cleaning solvent is used over and over again to clean tanks. Once a tank is clean, 1/2 gal of virgin solvent is used to give the tank a final rinse. This 1/2 gal is added to solvent that has been designated for cleaning. This cleaning solvent is used as needed in the manufacture of three different products, Asphalt coatings, Coal tar epoxy, and marine primers. All three coatings do not have stringent color requirements and lend themselves easily to the use of cleaning solvent. We hope that you find this information useful. If you have any questions please do not hesitate to call.

(PMLP 00020. Continental Industrial Coatings, page 1)

Cintech Industrial Coatings is constantly trying to reduce our hazardous wastes. A large part of this program is recycling wastes which would eventually turn into hazardous wastes, into salable products. This new rule would severely restrict this.

(PMLP 00022. Cintech Industrial Coatings, page 1)

Recycling - Section II F. *3.Recycling Issues* states

> "EPA notes that off-specification paint production wastes can be recycled in ways that will not be regulated as hazardous waste management. Under current regulations defining "solid wastes," unused paint reused as a legitimate ingredient in the manufacture of other paint is not considered a "waste" and thus will not be subject to hazardous waste regulations. EPA notes that paint manufacturers commonly reuse unused products to make new paints. EPA also understands that paint formulations are fairly exacting, making it unlikely that a manufacturer could successfully rework paint containing significant quantities of constituents that are not useful paint ingredients. Typically, this type of reuse of a commercial product (when legitimate) is not regulated as waste management, even if it involves reclamation."

The regulation, if enacted as proposed, could be construed as allowing the recycling of unused paint without limitation, but not allowing the recycling of residues and sludges. By specifically limiting the discussion of recycling to unused paint, EPA implies that other forms of recycling are not allowed. Thus any paint manufacturer who uses tank cleaning residues (tank washes) in subsequent batches, a common practice, or a solvent recovery still or any other means of separation and processing could become a Hazardous Waste Treatment Storage and Disposal Facility (TSDF) at the whim of an overzealous state regulator. The facility will either have to accept the risk of receiving a Notice of Violation, along with its monetary penalty, litigation cost and adverse publicity or undergo a difficult and expensive permitting or abandon the activity and rely on disposal for materials which, for the last 20 years of RCRA, have been beneficially reused without causing harm to the environment. And finally, if the facility decides to pursue the permitting option, it is faced with the situation of all of the products in which these materials are used would be classified as hazardous waste by the Mixture Rule.

This approach is wrong because:

- Residues are compatible with products they are used in and contain the same ingredients
- Residues are substitutes for raw materials
- Reuse reduces the need for petroleum-based solvents
- Beneficial reuse is consistent with the goals of RCRA

- Reuse is consistent with U.S. Energy policy by minimizing petroleum use
- Not reusing increases hazardous waste generation
- Not reusing increases off-site hazardous waste transportation and disposal
- Not reusing increases greenhouse gases
- Not reusing increases costs unnecessarily

(PMLP 00023. Delta Laboratories Inc., page 2, 3)

1. The requirements for managing off-specification products. The language in the rule will interfere with the beneficial reuse of this material, which will result in a significant increase in the amount of waste generated by the industry.

2. The rule does not make clear the management requirements for paint manufacturing residues, other than unused paint. Again, the industry reuses a significant quantity of production residues (e.g. cleaning solvents, recovery distillates,...) and any interference with this practice will result in a significant increase in waste generation and disposal from the industry.

(PMLP 00024. Akzo Nobel, page 1, 2)

I am sending these comments as an owner and manager of a small paint manufacturing business concerned that the rule will have a potentially unnecessary impact on our operation, production and compliance costs.

I say “unnecessary impact” because the current set of regulations covering our industry’s use of hazardous materials and the disposal of their residues is, in my opinion, working well. The objective of minimizing the generation of wastes is supported by our industry’s responsible practices of re-using materials in a variety of beneficial ways. As I understand the proposed rule, I see cost, complexity and a limiting of options coming to a system which we believe is working well.

Most paint manufacturing residue contains the same ingredients as saleable finished goods paints, although usually in different proportions than the original product. From a hazardous materials standpoint, relative to worker exposure and environmental protection, these products are handled with the same care as the original raw materials. We consider these residual materials to be value adding, not wasted and lost. It is relatively simple to adjust future production to allow the reuse of residual materials. If this is done properly, it in no way reduces the legitimacy of the finished product. It certainly does not add to the stream of hazardous waste.

For those few times when this type of adjustment is not possible, there is an existing system that classifies the material as hazardous and requires prompt, safe and documented disposal.

(PMLP 00025. Davis Paint Company, page 1)

I say “unnecessary impact” because the current set of regulations covering the industry’s use of hazardous materials and the disposal of their residues is working well. The objective of minimizing the generation of wastes is supported by our industry’s responsible practices of re-using materials in a variety of beneficial ways. As I understand the proposed rule, I see cost, complexity and a limiting of options coming to a system which is working well as it is.

Most paint-manufacturing residue contains substantially the same ingredients as saleable paint products, although usually in different proportions than the original product. From a hazardous materials standpoint, relative to worker exposure and environmental protection, these products are handled with the same cautions as original raw Materials. We consider these residual materials to be value-adding, not wasted and lost. It is relatively simple to adjust future production to allow the reuse of residual materials. If this is done properly, it in no way reduces the legitimacy of the finished product. It certainly does not add to the stream of hazardous waste. For those few times when this type of adjustment is not possible, there is an existing system that classifies the material as hazardous and requires prompt, safe and documented disposal.

(PMLP 00027. Aexcel Corp., page 1)

EPA is not including paint products that are shipped back to the manufacturers by retailers or paint users in the scope of this rule:

> EPA thinks that downstream entities can presume that unused paint products returned to a paint production facility will be legitimately reused and, thus, will not be solid wastes, even if they exhibit a hazardous waste characteristic. 66 FR 10067 (February 13, 2001).

The Council supports that position and commends the Agency for a good product stewardship position. Thus, off-specification paint products that retailers or users decide to return to manufacturers will not be considered hazardous waste. However, EPA does propose to include within the scope of the listing:

> . . . returned, unused products once a manufacturer obtains possession or control of them. EPA believes that “returned” unused products could pose risks similar to those posed by unused products that never go off-site. 66 FR 10067 (February 13, 2001).

Further,

> . . . facilities would find it cumbersome to distinguish between returned products and ‘never sent’ products. EPA refers to all of these unused products that will not be sold for

> their original, intended use as 'off-specification' paint products. 66 FR 10067 (February 13, 2001).

While off-specification production wastes are proposed to be regulated as hazardous waste solids, K179, the Agency notes that off-specification paint production wastes can be recycled without triggering classification as a hazardous waste, as follows:

> . . . unused paint reused as a legitimate ingredient in the manufacture of other paint is not considered a 'waste' and thus will not be subject to the hazardous waste regulations. . . should the paint production facility determine it cannot or will not use the returned paint as an ingredient, we are proposing that the paint would then become an off-specification paint product waste that would need to be evaluated against the concentrations proposed in today's rulemaking, as well as the hazardous waste characteristics. 66 FR 10067-68 (February 13, 2001).

The Council agrees with the Agency's position that returned paint products which can be reused are not "waste" and therefore, cannot be considered hazardous waste under this proposal unless it is actually discarded. We also believe that returned paint products which can be sold *(i.e.,* off-specification paint for which a market exists) should also not be considered "waste," unless or until it is discarded. EPA should not impose a hazardous designation upon the returned paint if it has beneficial uses other than as an ingredient in the manufacture of other paint.

(PMLP 00030. ACC, page 11, 12)

RESPONSE

*In the preamble to the proposed rule, EPA discussed its jurisdiction over paint products returned to manufacturers when listed or characteristic. In the final rule, upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing wastes proposed as K179 and K180. However, EPA believes that the position stated in the preamble regarding reverse distribution systems is still applicable to paint wastes exhibiting a characteristic. To clarify, downstream entities (e.g., retailers) can presume that unused paint products returned to a paint production facility or auxilliary receiving facility will be legitimately reused and, thus, will not be a solid waste, even if it exhibits a hazardous waste characteristic. Once in the hands of paints producer, the regulatory status of the material depends on whether the material will be recycled or disposed. If the material is legitimately recycled (e.g., reused, resold, used as an ingredient), it is not a solid waste. If disposed, the materials becomes a solid waste and, if characteristic, a hazardous waste subject to regulation under RCRA. This clarification applies to any unused paint product***,** *whether described in the industry as "off-specification" or "lower grade" or other product type. Therefore, a returned product that is resold to another customer or used as an ingredient to produce a new product would not be classified as a waste at that point.*

EPA is not including paint products that are shipped back to the manufacturers by retailers or paint users in the scope of this rule (66 FR 10067). Eastman supports that position and commends the Agency for a good product stewardship position. Thus, off-specification paint products that retailers or users decide to return to manufacturers will not be considered hazardous waste. However, EPA appears to suggest that once the manufacturer receives the paint sent back by the retailer or user, it becomes a hazardous waste unless it is recycled back into the paint manufacturing process as an ingredient. Eastman believes that is too restrictive. Surely if the paint manufacturer (or its warehouse or other legitimate "agent" who may receive the returned paint on behalf of the manufacturer) finds another market for the off-specification paint material, that also means the material is not a "waste," is not "discarded" and therefore cannot be considered captured as K179.

EPA should clarify those potential recycle/reuse/resale situations whereby the returned paint would not be considered hazardous waste.

(PMLP 00032. Eastman Chemical Co., page 12)

RESPONSE

*In the preamble to the proposed rule, EPA discussed its jurisdiction over paint products returned to manufacturers when listed or characteristic. In the final rule, upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing wastes proposed as K179 and K180. However, EPA believes that the position stated in the preamble regarding reverse distribution systems is still applicable to paint wastes exhibiting a characteristic. To clarify, EPA believes that downstream entities (e.g., retailers) can presume that unused paint products returned to a paint production facility or auxiliary receiving facility will be legitimately reused and, thus, will not be a solid waste, even if it exhibits a hazardous waste characteristic. Once in the hands of paints producer, the regulatory status of the material depends on whether the material will be recycled or disposed. If the material is legitimately recycled (e.g., reused, resold, used as an ingredient), it is not a solid waste. If disposed, the materials becomes a solid waste and, if characteristic, a hazardous waste subject to regulation under RCRA. This clarification applies to any unused paint product***,*** *whether described in the industry as "off-specification" or "lower grade" or other product type. Therefore, a returned product that is resold to another customer would be considered reused and would not be classified as a waste at that point.*

Beneficial product reuse is consistent with the goals of RCRA and with U.S. Energy policy. In fact, the legislative history on Hazardous and Solid Waste Amendments (HSWA) of 1984 states that the Committee "believes that recovery of materials and energy from solid waste that would otherwise be discarded are vital alternatives to land disposal and should be given equal emphasis in solid and hazardous waste planning and management at the national, state, and local levels."[76] Not reusing increases hazardous waste transportation and disposal costs, increases greenhouse gases, and increases the burden on industry to the detriment of the environment. Not recycling, reclaiming and reusing roduct increases the amount of wastes being land disposed. Should a listing determination go forward against NPCA's objections, EPA must make it clear that current industry recycling, reclamation and reuse practices will not be curtailed.

NPCA applauds EPA's decision to allow retailers, customers and other downstream entities to return unused paints and coatings to a manufacturer under the presumption that it will be legitimately recycled.[77] This decision fully supports product stewardship activities currently being practiced within the industry and is consistent with the goals of Section 1003 of the HSWA and the Pollution Prevention Act of 1990. NPCA agrees that paint manufacturers are normally in the best position to determine whether unused paints and coatings can be legitimately used (e.g., sold), reused, reclaimed or discarded. Nonetheless, to ensure implementation of this "presumptive policy" consistent with EPA's intent, NPCA believes several issues require clarification.

EPA's language in the preamble of the Proposed Rule regarding off-specification product is confusing and will lead to conflicting and inappropriate implementation should a listing determination go forward over NPCA objection. NPCA supports EPA's decision to appropriately limit the scope of any listing to exclude off-specification paint products that have been shipped out to retailers or paint users.[78] In addition, NPCA supports EPA's intent to limit the scope of any listing to exclude off-specification paint products returned to the manufacturer that can be resold, reused, or recycled. In the preamble to the Proposed Rule, EPA states it is "proposing. . . to include within the scope of today's proposed listing returned, unused products once a manufacturer obtains possession or control of them".[79] NPCA believes that the EPA's intended meaning was that only returned, unused products that a manufacturer decides to discard (after obtaining possession) would be affected by EPA's proposal, provided the off-specification product exceeds any of the proposed concentration-based listing levels. Unused products that are returned for legitimate use, reuse or reclamation are currently not solid wastes per 40 CFR 261 .2(c)(3) and (e). EPA stated that this was their intent at a meeting at Duron, Inc. on April 5, 2001, between Duron, NPCA, OMB and EPA.

However, language in the preamble to the Proposed Rule can be read as contradictory. Specifically, EPA states that returned, unused products would be covered by the Proposed Rule once a manufacturer obtains possession or control of them.[80] EPA goes on to state that "facilities would find it cumbersome to distinguish between returned products and "never sent" products."[81] This statement is arbitrary and would lead one to believe that current manufacturers have little or no inventory controls. Not only would this be patently contrary to sound business practices from an economic standpoint, current regulations mandate strict inventory control procedures, making this statement even more absurd. For example, current labeling requirements under the National AIM Rule mandate date coding, note only providing an inventory control option for use by manufacturers, but providing a method for product tracking as well.

Should the hazardous waste listing determination move forward despite NPCA objections, off-specification paint products returned to paint production facilities should be presumed non-hazardous in support of legitimate use/reuse practices. This presumption should be extended to cover off-specification paint products returned to auxiliary facilities as well. Accumulation and storage prior to legitimate use/reuse should also fall into this presumption. These products do not pose any risk and their legitimate use/reuse significantly reduces the amount of waste that would otherwise have to be disposed. EPA's own bounding analysis for on-site tanks supports the conclusion that these products would not pose any risk. Just as with "never sent" products, returned products are stored in closed containers, appropriately managed until reused in a like batch, resold as irregular product, or reworked into a new product.

EPA must clarify its intention with regard to off-specification products clear. Off-specification products are not covered under the scope of any waste listing determination unless and until a facility decides to discard the product. This is consistent with EPA guidance letters of 1991 and 1993.[82] Then, and only then, would off-specification product be considered a waste and subject to RCRA waste characterization and management practices.

In addition, in the preamble to the Proposed Rule, EPA states "that downstream entities can presume that unused paint products returned to a paint production facility will be legitimately recycled. . . . "[83] NPCA is concerned that EPA enforcement officials, state regulatory agencies and the regulated community may inadvertently interpret this statement as limiting returns of unused paint products directly to "paint production facilities." This would result in a serious disruption of industries' product stewardship programs, as "paint production facilities" do not normally serve as points of direct interface with our customers. Rather, most companies operate numerous distribution warehouses and regional service centers that serve as points of distribution and technical support for our products. More often than not, these facilities, and not the manufacturing facilities, are a more logical place for these materials to be returned. That said, NPCA requests that EPA provide clarification in the final rule such that auxiliary facilities owned by the same parent company are included within the scope of the intent to exclude recycling practices.

In addition, in the preamble to the proposed rule, EPA states it "believes,. . .that a retailer or customer returning paint to a paint manufacturer can presume that the paint will be legitimately used as an ingredient. . ."[84] NPCA is concerned that EPA enforcement officials, state regulatory agencies and the regulated community may inadvertently interpret this statement as limiting legitimate recycling to use of returned, unused products as an ingredient. NPCA does not believe that this is what EPA intended. Rather, we believe EPA intended it as an example of a type of legitimate recycling that could occur. For instance, NPCA believes sale of the returned material and recovery of a usable or saleable product from the paint (i.e., solvent or concentration of pigments) would also be examples of the types of legitimate recycling that could occur.

Also, NPCA believes EPA should clarify that the accumulation and storage of returned, unused paint is not subject to regulation prior to legitimate recycling or a determination to discard is made. Unused paint is a commercial chemical product being returned to the manufacturer under the intent that it will be legitimately recycled. As such, unless and until a determination is made to discard of the unused paint, it is not a solid waste per 40 CFR 261 .2(c)(3). Further, this approach is consistent with the results of the conservative bounding analysis EPA conducted for the on-site tank scenario, which determined that the risk of paint manufacturing liquid waste management in on-site tanks is insignificant for all constituents of concern.[85]

Lastly, NPCA believes that EPA should also clarify that its stated position regarding retailers and customers returning unused paint in no way relieves paint manufacturers of their burden to demonstrate that legitimate recycling is actually occurring. In other words, a reverse distribution system cannot be used as a waste management service to customers and retailers without the applicable regulatory controls being in place. In such instances, management of unused products as universal wastes under 40 CFR 273 probably provides a more appropriate level of regulatory control versus management in compliance with full RCRA regulatory requirements.

In light of the above, NPCA respectfully requests that EPA provide for direct and definitive clarification of these issues in the final rule.

NPCA is also concerned that the Proposed Rule does not address paint residues (e.g. clean-up residues and solvents, tank and drum bottoms, distillates and bottoms from solvent distillation). The Proposed Rule allows reuse of unused paint, but is silent with regard to other residues. Legitimate recycling includes reclamation (i.e. recovery of solvent is not a solid waste because it is non-listed commercial chemical product being reclaimed). There are a variety of reasons why this rulemaking should not interfere with current and future efforts of the industry to recycle and reuse paint residues. Namely, residues, like unused pure product are compatible with products they are used in and contain the same ingredients, they are used as substitutes for raw materials, and they reduce the need for petroleum-based solvents. In addition, recovery of these materials and subsequent reuse is not limited to substitution of an ingredient. For example, reclamation allows for the legitimate sale of recovered solvent for use in other manufacturing processes.

NPCA asked EPA about the reuse/reclaimed materials issue at two meetings (on January 12, 2001 with 0MB and on March 14, 2001). EPA's responded that recycling practices would remain unchanged, as EPA would continue to rely on the definitions and exclusions currently governing solid and hazardous wastes. Should the listing move forward over NPCA's objections, NPCA is concerned that the rule would not be interpreted at the state level with the same intent and therefore, urges EPA to make it clear that the recycling or beneficial reuse of paint production wastes can continue under the current regulatory definition of solid waste and its exclusions.

76 HR Rep. No. 98-198, 98th Cong., 2nd Sess., pt. 1, at 24 (1984).
77 66 Fed. Reg.10067-8 (Feb. 13, 2001).
78 Id at 10067.
79 Id
80 66 Fed. Reg.10067 (Feb. 13, 2001).
81 Id

82	See “Letter to Mark J. Schulz of Pharmaceutical Services, Inc. from Sylvia K. Lowrance of EPA,” May 16, 1991 and “Letter to N.G. Kaul of New York State Department of Environmental Conservation from Sylvia K. Lowrance of EPA,” Feb. 23, 1993.
83	66 Fed. Reg. 10067 (Feb. 13, 2001).
84	66 Fed. Reg. 10089 (Feb. 13, 2001).
85	Id at 10068.

(PMLP 00033. NPCA, page 46, 47, 48, 49 w/attachments)

RESPONSE

In the preamble to the proposed rule, EPA discussed its jurisdiction over paint products returned to manufacturers when listed or characteristic. In the final rule, upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing wastes proposed as K179 and K180. However, EPA believes that the position stated in the preamble regarding reverse distribution systems is still applicable to paint wastes exhibiting a characteristic. To clarify, EPA believes that downstream entities (e.g., retailers) can presume that unused paint products returned to a paint production facility or auxiliary receiving facility will be legitimately reused and, thus, will not be a solid waste, even if it exhibits a hazardous waste characteristic. Once in the hands of the paints producer, the regulatory status of the material depends on whether the material will be recycled or disposed. If the material is legitimately recycled (e.g., reused, resold, used as an ingredient), it is not a solid waste. If disposed, the material becomes a solid waste and, if characteristic, a hazardous waste subject to regulation under RCRA. This clarification applies to any unused paint product, ***,*** *whether described in the industry as "off-specification" or "lower grade" or other product type. Therefore, a returned product that is resold to another customer would be considered reused and would not be classified as a waste at that point.*

The Agency would like to clarify that under the current federal RCRA regulations, unused paint products are classified as commercial chemical products. Under that program Byproducts and sludges that exhibit hazardous waste characteristics are not considered solid wastes when legitimately reclaimed and reused to make paint products. (See 40 CFR 261.2) The final rule does not make changes to the current RCRA program as it relates to paint production wastes.

EPA’s language in the preamble of the Proposed Rule regarding off-specification product is confusing and will lead to conflicting and inappropriate implementation should a listing determination go forward as is. ICI Paints supports EPA’s decision to appropriately limit the scope of any listing to exclude off-specification paint products that have been shipped out to retailers or paint users. This decision would also exclude off-specification paint products returned to the manufacturer that can be resold, reused, or recycled. However, language in the preamble to the Proposed Rule can be read as contradictory. Specifically, EPA states that returned, unused products would be covered by the Proposed Rule once a manufacturer obtains possession or control of them.. EPA goes on to state that "facilities would find it cumbersome to distinguish between returned products and "never sent" products." This statement is arbitrary and would lead one to believe that current manufacturers have little or no inventory controls. Not only would this be contrary to sound business practices from an economic standpoint, current regulations mandate strict inventory control procedures. EPA must make a clear definition that off-specification paint products returned to paint production facilities should be presumed non-hazardous in support of legitimate use/reuse practices. This presumption should be extended to cover off-specification paint products returned to auxiliary facilities as well. Accumulation and storage prior to legitimate use/reuse should also fall into this presumption. These products do not pose any risk and their legitimate use/reuse significantly reduces the amount of waste that would have to be disposed of.

The Proposed Rule does not address paint residues (e.g. clean-up residues and solvents, tank and drum bottoms, distillates and bottoms from solvent distillation). The Proposed Rule allows reuse of unused paint, but does not address the reuse of residues. There are a variety of reasons why this rulemaking should not interfere with current and future efforts of the industry to recycle and reuse paint residues. Namely, residues, like unused pure product are compatible with products they are used in and contain the same ingredients, they are used as substitutes for raw materials, and they reduce the need for petroleum-based solvents. In addition, recovery of these materials and subsequent reuse is not limited to substitution of an ingredient. For example, reclamation allows for the legitimate sale of recovered solvent for use in other manufacturing processes.

In order to eliminate any confusion ICI Paints recommends that EPA make it clear in the final rule that the recycling or beneficial reuse of paint production wastes can continue under the current regulatory definition of solid waste and its exclusions.

(PMLP 00039. ICI Paints North America, page 5)

RESPONSE

In the preamble to the proposed rule, EPA discussed its jurisdiction over paint products returned to manufacturers when listed or characteristic. In the final rule, upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing wastes proposed as K179 and K180. However, EPA believes that the position stated in the preamble regarding reverse distribution systems is still applicable to paint wastes exhibiting a characteristic. To clarify, EPA believes that downstream entities (e.g., retailers) can presume that unused paint products returned to a paint production facility or auxiliary receiving facility will be legitimately reused and, thus, will not be a solid waste, even if it exhibits a hazardous waste characteristic. Once in the hands of the paints producer, the regulatory status of the material depends on whether the material will be recycled or disposed. If the material is legitimately recycled (e.g., reused, resold, used as an ingredient), it is not a solid waste. If disposed, the material becomes a solid waste and, if characteristic, a hazardous waste subject to regulation under RCRA. This clarification applies to any unused paint product, *whether described in the industry as "off-specification" or "lower grade" or other product type. Therefore, a returned product that is resold to another customer would be considered reused and would not be classified as a waste at that point.*

The Agency would like to clarify that under the current federal RCRA regulations, unused paint products are classified as commercial chemical products. Under that program byproducts and sludges that exhibit hazardous waste characteristics are not considered solid wastes when legitimately reclaimed and reused to make paint products. (See 40 CFR 261.2) The final rule does not make changes to the current RCRA program as it relates to paint production wastes.

The P. D. George Co. agrees with the NPCA comment that EPA's language in the preamble of the Proposed Rule regarding off-specification is confusing. Clarification is needed to determine when return material and other off-specification material would be affected by the Proposed Rule. Liquid off-specification material in not within the scope of the Proposed Rule; however, solid off-specification material is. The definition of solid and liquid needs to be clarified. It is possible to have off-specification product that is semi-solid. According to the Proposed Rule it would be difficult to know when semi-solid return material, for example, is affected by the rule.

(PMLP 00040. P.D. George Co., page 1, 2)

RESPONSE

Because the Agency is not moving forward with a listing for paint production waste, the distinction between liquid, solid and semi-solid becomes irrelevant to application of the current RCRA requirements. In the preamble to the proposed rule, EPA discussed its jurisdiction over paint products returned to manufacturers when listed or characteristic. In the final rule, upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing wastes proposed as K179 and K180. However, EPA believes that the position stated in the preamble regarding reverse distribution systems is still applicable to paint wastes exhibiting a characteristic. To clarify, EPA believes that downstream entities (e.g., retailers) can presume that unused paint products returned to a paint production facility or auxiliary receiving facility will be legitimately reused and, thus, will not be a solid waste, even if it exhibits a hazardous waste characteristic. Once in the hands of the paints producer, the regulatory status of the material depends on whether the material will be recycled or disposed. If the material is legitimately recycled (e.g., reused, resold, used as an ingredient), it is not a solid waste. If disposed, the material becomes a solid waste and, if characteristic, a hazardous waste subject to regulation under RCRA. This clarification applies to any unused paint product, *whether described in the industry as "off-specification" or "lower grade" or other product type. Therefore, a returned product that is resold to another customer would be considered reused and would not be classified as a waste at that point.*

DuPont applauds the Agency's decision to allow retailers, customers and other downstream entities to return unused paints and coatings to a manufacturer under the presumption that it will be legitimately recycled. 66 FR 10067-8 (Feb. 13, 2001). This decision fully supports product stewardship activities currently being practiced within the industry and is consistent with the goals of Section 1003 of the Hazardous and Solid Waste Amendments and the Pollution Prevention Act of 1990. DuPont agrees that paint manufacturers are normally in the best position to determine whether unused paints and coatings can be legitimately used (e.g., sold), reused, reclaimed or discarded.

Nonetheless, to ensure implementation of this "presumptive policy" consistent with the Agency's intent, DuPont believes several issues require clarification. First, in the preamble to the proposed rule, the Agency states it is "proposing.. .to include within the scope of today's proposed listing returned, unused products once a manufacturer obtains possession or control of them". 66 FR 10067 (Feb. 13, 2001). DuPont believes that the EPA's intended meaning was that only returned, unused products that a manufacturer decides to discard (after obtaining possession) would be affected by EPA's proposal, provided the off-specification product exceeds any of the proposed concentration-based listing levels. Unused products that are returned for legitimate use, reuse or reclamation are currently not solid wastes per 40 CFR 261.2(c)(3) and (e).

Second, in the preamble to the proposed rule, the Agency states "that downstream entities can presume that unused paint products returned to a *paint production facility* (emphasis added) will be legitimately recycled...". 66 FR 10067 (Feb. 13, 2001). DuPont is concerned that EPA enforcement officials, state regulatory agencies and the regulated community may inadvertently interpret this statement as limiting returns of unused paint products directly to "paint production facilities". This would result in a serious disruption of DuPont's product stewardship program, as our "paint production facilities" do not normally serve as points of direct interface with our customers. Rather, DuPont operates numerous warehouses and regional service centers that serve as points of distribution and technical support for our products. More often than not, these facilities, and not the manufacturing facilities, are a more logical place for these materials to be returned. That said, DuPont requests that the Agency provide clarification in the final rule such that auxiliary facilities owned by the same parent company are included within the scope of this reverse distribution system.

Third, in the preamble to the proposed rule, the Agency states it "believes,.. .that a retailer or customer returning paint to a paint manufacturer can presume that the paint will be legitimately used as an ingredient...". 66 FR 10068 (Feb. 13, 2001). Again, DuPont is concerned that EPA enforcement officials, state regulatory agencies and the regulated community may inadvertently interpret this statement as limiting legitimate recycling to use of returned, unused products as an ingredient. DuPont does not believe that this is what the Agency intended. Rather, we believe the Agency intended it as an example of a type of legitimate recycling that could occur. For instance, DuPont believes sale of the returned material and recovery of a usable or saleable product from the paint *(i.e.,* solvent or concentration of pigments) would also be examples of the types of legitimate recycling that could occur.

Fourth, DuPont believes the Agency should clarify that the accumulation and storage of returned, unused paint is not subject to regulation prior to legitimate recycling or a determination to discard is made. Unused paint is a commercial chemical product being returned to the manufacturer under the intent that it will be legitimately recycled. As such, unless and until a determination is made to discard of the unused paint, it is not a solid waste per 40 CFR 261.2(c)(3). Further, this approach is consistent with the results of the conservative bounding analysis the Agency conducted for the on-site tank scenario, which determined that the risk of paint manufacturing liquid waste management in on-site tanks is insignificant for all constituents of concern. 66 FR 10089 (Feb. 13,2001).

Lastly, DuPont believes that the Agency should also clarify that its stated position regarding retailers and customers returning unused paint in no way relieves paint manufacturers of their burden to-demonstrate that legitimate recycling is actually occurring. In other words, a reverse distribution system cannot be used as a waste management service to customers and retailers without the applicable regulatory controls being in place. In such instances, management of unused products as universal wastes under 40 CFR 273 probably provides a more appropriate level of regulatory control versus management in compliance with full RCRA regulatory requirements.

In light of the above, DuPont respectfully requests that the Agency provide for direct and definitive clarification of these issues in the final rule.

(PMLP 00041. DuPont, page 36, 37, w/attachments)

RESPONSE

*In the preamble to the proposed rule, EPA discussed its jurisdiction over paint products returned to manufacturers when listed or characteristic. In the final rule, upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing wastes proposed as K179 and K180. However, EPA believes that the position stated in the preamble regarding reverse distribution systems is still applicable to paint wastes exhibiting a characteristic. To clarify, EPA believes that downstream entities (e.g., retailers) can presume that unused paint products returned to a paint production facility will be legitimately reused and, thus, will not be a solid waste, even if it exhibits a hazardous waste characteristic. The Agency agrees with the commenter's second point and clarifies that this policy applies to production facilities as well as auxiliary receiving facilities. Once in the hands of the paints producer or auxiliary receiving facility, the regulatory status of the material depends on whether the material will be recycled or disposed. If the material is legitimately recycled, it is not a solid waste. The commenter is correct in stating that legitimate recycling includes materials used as an ingredient, as well as reuse, or resale. If disposed, the material becomes a solid waste and, if characteristic, a hazardous waste subject to regulation under RCRA. This clarification applies to any unused paint product***,** *whether described in the industry as "off-specification" or "lower grade" or other product type. Therefore, a returned product* *that is resold to another customer would be considered reused and would not be classified as a waste at that point.*

The Agency would like to clarify that under the current RCRA regulations, unused paint products are classified as commercial chemical products. Residues and sludges may be classified as by-products or sludges and, like commercial chemical products, are not considered solid wastes when legitimately recycled. The final rule does not make changes to the current RCRA program as it relates to paint production wastes.

GE supports EPA's interpretation of the status of unused paint, and encourages EPA to include used paints as a universal waste. EPA interprets off-specification paint production wastes and unused paint returned to the manufacturer by a retailer or other customer not to be hazardous wastes, even if they exhibit a hazardous waste characteristic, since there is a reasonable expectation that they can be reused or incorporated as ingredients in other paints. 66 Fed. Reg. 10067. This approach is consistent with the Agency's longstanding interpretation of the status of unused pharmaceutical products returned to the manufacturer. It also promotes RCRA's waste minimization goals and produces a common sense result. Unused paints are in no way more dangerous when being returned to the manufacturer than when being shipped by the manufacturer, and applicable controls should be the same. With respect to used paints, GE encourages EPA to designate used paints as Universal Wastes rule in order to improve current collection and disposal practices for used paints that fail a hazardous waste characteristic.

III. INFORMATION USED FOR THE RULEMAKING

EPA received several comments from the industry on the RCRA 3007 survey design and methodology, the survey data obtained and used, and the lack of waste sampling data for the proposed rulemaking. In the subsections below concerning the various issues raised, we provide a summary of comments followed by our response to comments and then the verbatim comments received.

Since we have determined not to list waste liquids or solids from paint production (as discussed in Section IV of the final determination), we are not addressing comments specific to waste sampling and related implementation issues.

A. RCRA Section 3007 survey design and methodology

1. Capturing wastes of concern

SUMMARY OF COMMENTS

The Agency received three industry comments from manufacturers of printing ink varnish. They all stated that printing ink varnish production facilities were not included in the 3007 survey.

RESPONSE

The commenters are correct. We did not include printing ink varnish production facilities within the scope of our 3007 survey and did not intend to cover these wastes within the scope of this rule.

VERBATIM COMMENTS

There is no indication that EPA analyzed or in any way surveyed printing ink varnish production facilities before preparing the Proposed Rule.

(PMLP 00001. Magruder, page 11)

There is no indication that EPA analyzed or in any way surveyed printing ink varnish production facilities before preparing the Proposed Rule.

(PMLP 00004. BF Goodrich Hilton Davis, Inc., page 10)

There is no indication that EPA analyzed or in any way surveyed printing ink varnish production facilities before preparing the Proposed Rule.

(PMLP 00005. CDR Pigments & Dispersions, page 10)

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2. Use of the Dun and Bradstreet database

SUMMARY OF COMMENT

The Agency received one comment from NPCA stating that EPA relied on outdated and unverified commercial corporate information instead of actual facility specific information for the statistical sampling survey. The commenter also stated that EPA's statistical maneuvers are confusing and difficult to interpret.

RESPONSE

As explained in the proposed rule (at 66 FR 10070), we used the Dun and Bradstreet database for developing our survey scheme because it provided the most thorough listing of paint manufacturers in the United States. Specifically, we used the following information contained in the Dun and Bradstreet database for developing the survey scheme: facility names and addresses, contact names and telephone numbers, annual sales volume data, and SIC codes for the types of paint or paint-related products manufactured. The commenter argued that EPA arbitrarily relied on outdated and unverified commercial corporate information instead of actual facility specific information. However, the commenter submitted no evidence supporting its claims that the Dun and Bradstreet data was outdated or unverified. The commenter also did not describe in their comments any alternative source of "actual facility specific information" readily available to us before conducting the survey. Nor did they identify an alternative source when directly asked.

Our only alternative to relying on this existing database would have been to collect the pre-survey information of interest (e.g., facility size, paint types, etc.) from the entire universe of paint manufacturers for sample frame design and stratification. In light of the large number of potential paint manufacturers (1,764 listed under SIC Code 2851 in the July 1999 Dun and Bradstreet database), this was impractical. Under the Paperwork Reduction Act, Federal agencies are required to submit an Information Collection Request (ICR) to and receive approval from the Office of Management and Budget (OMB) prior to collecting substantially similar information from ten or more respondents in any 12 month period. Collecting pre-survey information would have required separate ICR approval and additional time to gather the information; but such time was not available to us under the consent decree. In the absence of "actual facility specific information" or pre-survey information of interest for all the facilities in the paint manufacturing facilities universe, we believe the Dun and Bradstreet database provided the best source of information for our survey, and we are continuing to use this database for the final determination today.

As described in the proposed rule (at 66 FR 10069), it was necessary for the Agency to conduct a sampling survey, rather than a census, due to the size of the paint manufacturing industry and in consideration of our time and resource constraints. We used accepted statistical sampling methods to design a statistical stratified random-sampling scheme and determine a sample size for the survey (such that the survey would adequately cover the industry and achieve a 90% probability of finding a waste management activity utilized by at least one in 20 paint manufacturing facilities within the various categories of generators). As discussed in detail in Sections III.A.4 And III.B.2, it was also necessary to apply a common statistical weighting procedure to produce unbiased estimates from survey data (i.e., by extrapolation to the paint manufacturing universe). The commenter, however, did not describe which parts of our statistical analyses were confusing to them and difficult to interpret.

VERBATIM COMMENT

Instead of using readily available information, EPA conducted a statistically designed survey of paint manufacturers to create a hazardous and non-hazardous paint waste database in support of a listing determination under RCRA. EPA chose to conduct a statistical survey, rather than a census, in order to reduce their burden, meet project deadlines, and to minimize costs. EPA's convoluted statistical maneuvers are confusing and difficult to interpret. EPA arbitrarily relied on outdated and unverified commercial corporate information instead of actual facility specific information.

(PMLP 00033. NPCA, page 12 w/attachments)

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3. Stratified sampling

SUMMARY OF COMMENT

The Agency received one comment from NPCA stating that EPA used information from the survey to characterize 705 facilities that could not be stratified for the survey. The commenter contended that this improper use of unverified data very likely mischaracterized the universe of paint manufacturers and led to an overestimation of waste quantities.

RESPONSE

For our RCRA Section 3007 survey of paint manufacturers (see 66 FR 10069 - 10072 on how the Agency designed the statistical, stratified random-sampling survey), we derived a sampling population of 884 facilities from the Dun and Bradstreet database purchased in July 1999. (The July 1999 Dun and Bradstreet database we initially purchased for preliminary analysis contained no sales volume data. In December 1999, we purchased another version containing sales volume data as a supplement for sampling stratification.) This database contained a total of 1,764 facilities identified under SIC Code 2851. See "Paint Manufacturing Hazardous Waste

Listing Determination Support: Sampling Population Determination Final Report" available in the public docket for details.

We first screened the July 1999 database and removed the 880 facilities that fell into one of the following categories: apparent non-paint manufacturers, duplicates, no longer in the December 1999 database, outside of the scope of this listing determination, or found impossible to fully classify for facility stratification. We then classified the remaining 884 facilities into 12 strata based on three categorization criteria: paint types (architectural/special purpose, and OEM), sales volume (less than five million, five to twenty million, and greater than twenty million), and TRI status (whether the facility reported under TRI in 1997). The strata were intended to group those facilities we believed would have somewhat similar characteristics, for example, similar waste amounts and types of waste generated and similar waste management practices.

Of the 880 facilities removed, 705 had insufficient information on the type of paint products manufactured to be fully classified into the various strata. We did not include them in the sampling population for two key reasons. First, we could not distinguish paint and coatings manufacturers from manufacturers of products outside the scope of the listing determination. Second, we also could not distinguish architectural/special purpose paints from original equipment manufacturing (OEM) paint types, and believed that this could be significant (based on survey data, we later decided not to distinguish between these). In the Dun and Bradstreet database used to establish our stratification scheme, the 705 facilities were listed under a general Dun and Bradstreet SIC code, 2851 0000[1]*, for undefined paint and allied paint products, some of which are not subject to this listing determination. In contrast, among the defined groups, we could distinguish between architectural/special purpose paint types (under code 2851 0100 through 0109) and OEM paint types (under code 2851 0200 through 0213), and remove those not of concern (e.g., 2851 0104 - paint driers; 2851 0300 through 0302 - putty, wood fillers and sealers; 2851 04 through 0403 - removers and cleaners). Since there was a greater degree of uncertainty in the group of 705 undefined facilities (about whether they might be subject to this listing determination) than these defined groups, and since we could not stratify these 705 facilities into the desired architectural/special purpose and OEM categories, we decided not to sample them. Nevertheless, as already indicated, we did include the 705 facilities when extrapolating waste quantities for the entire paint universe. We did this by assuming that*

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[1] Each entry in the Dun and Bradstreet database is identified by an 8-digit code, the first four being the same as SIC's and the next four being proprietary to Dun and Bradstreet that represent segregation of the paints, varnishes, lacquers, enamels, allied products, etc. in more detail. For example, code 2851 0000 refers to paints, varnishes, lacquers, enamels, and allied products; code 2851 0100 refers to paint and paint additives; code 2851 0104 refers to paint driers; code 2851 0200 refers to lacquers, varnishes, enamels, and other coatings; code 2851 0208 refers to polyurethane coatings; code 2851 0300 refers to putty, wood fillers and sealers; code 2851 0400 refers to removers and cleaners. For more details, see the Listing Background Document for Paint Manufacturing Listing Determination available in the public docket.

the characteristics of the 705 facilities were proportionate to the characteristics of the sampling population. We used these quantities to estimate the economic impact of the proposed rule on paint manufacturing and our waste treatment and management capacity analysis.

In short, we excluded the 705 entries from the sampling frame to increase the chances of obtaining useful data (e.g., waste management practices by in-scope paint manufacturers) for this listing determination. Nevertheless, these 705 facilities were still assumed to be represented by the sampling population of 884 facilities and thus were not excluded from the evaluation of paint manufacturing wastes. To relate the data collected from the surveyed facilities to the entire paint universe including the 705, we extrapolated statistically by using the percentages of facilities in the Dun and Bradstreet database that are represented by the surveyed facilities (66 FR 10072). We used the extrapolated waste quantity estimates for characterizing the entire paint manufacturers universe, and for our economic impact analysis and waste treatment and management capacity analyses. For risk modeling purposes, we estimated a national waste quantity distribution for the 884 facilities included in the sampling frame. For the purposes of the risk assessment, we assumed the 884 facilities were proportionally the same as the 705 facilities[2]. Since the risk assessment would not be impacted by the number of facilities but only by the shape and nature of the distribution, this proportional handling of the 705 facilities had no impact on the results of the risk assessment.

However, we performed post-survey adjustments to statistical weights in part to improve our extrapolation from survey data to the 705 facilities and thus the paint manufacturers universe, following the accepted statistical practice of post-survey stratification of surveyed facilities. As discussed below in Section III.B.2, we reexamined the group of 705 facilities and included the possible in-scope paint manufacturers for post-stratification and re-weighting to make the sample distribution more representative of the entire paint manufacturing population. These adjustments improve our extrapolation from survey data to the paint universe, and hence improve our estimates of industry waste quantities.

VERBATIM COMMENT

With the information gained from the RCRA 3007 ICR, EPA calculated a distribution for approximately 705 facilities that had insufficient data from a Dunn & Bradstreet (D&B) database EPA purchased to assess the paint industry universe. EPA's approach assumed that the characteristics of the facilities included in the sampling population were representative of the of those [705] facilities that lacked sufficient data with which to be defined in the D&B database.[11]

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[2] We assumed that the 705 facilities could be stratified in the same manner as the 884 facilities, such that both groups of facilities would have the same distribution of statistical weights and associated waste quantities, characteristics and management practices. In other words, the same distributions of waste stream data and waste volume percentiles could be developed from both sets for risk assessment.

This was an improper use of unverified data to supplant EPA's lack of actual facility information and very likely mischaracterized the universe of paint manufacturers. This, in turn, was yet another error leading to the ultimate overestimation of waste volumes.

11 "Regulatory Flexibility Screening Analysis for the Proposed Concentration-Based Listing of Wastewaters and Nonwastewaters from the Production of Paints and Coatings," January 19, 2001, page 3-13.

(PMLP 00033. NPCA, page 12 w/attachments)

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4. Extrapolating from survey data (including weighting)

SUMMARY OF COMMENT

The Agency received one comment from NPCA on extrapolating from survey data. NPCA states EPA's weighting factors are arbitrary and resulted in an overstatement of the total waste generated by the industry. NPCA argued that EPA should use a simpler extrapolation tool such as a pound or gallon of waste per pound or gallon of product produced.

RESPONSE

Our facility-specific weighting factors for extrapolating from survey data, ranging from 1.0 to 8.8571, were not arbitrary. As described in the proposed rule (66 FR 10071), we applied a statistical weighting and bias correction procedure to produce unbiased estimates from our survey data. This was necessary because we had sampling rates that were not proportional to the facility population sizes within each strata.

The commenter, however, did not provide any specifics or necessary information on how to apply its suggested approach. Therefore, we could not evaluate their approach. In addition, from our survey we learned that approximately 27% of paint manufacturers did not generate or dispose of any of the waste residuals of interest because they recycled or reused all paint residuals as feedstock in the manufacturing processes. Using the commenter's suggested "simpler" approach would flatly discount this 100% reuse/recycling scenario resulting in an overestimation of waste quantities and an inaccurate account of waste quantity distributions.

VERBATIM COMMENT

EPA only conducted a statistical survey from which it attempted to extrapolate the results to all paint plants by weighting the results of each category based on the number of questionnaires sent from the sampling frame in that category.[6] EPA stratified paint manufacturing facilities into 12 categories based on three categorization criteria: paint types, sales volume (less than five million dollars, five to twenty million dollars, and greater than twenty million dollars, based on Census Bureau's figures), and TRI status (whether the facility reported under TM in 1997).[7] Weighting factors range from 1 to 8.8571. In general, weighting factors are much greater for the small non-TM categories and range from 3.6290 to 8.8571.

While there are obviously going to be differences in the amount of these wastes generated at different sites, most paint manufacturing sites use the same equipment, same pollution control devices, have similar formulas and have similar manufacturing processes. On average, one would expect similar waste generation rates per unit produced. EPA's weighting factors of 4 to 8 is arbitrary and has resulted in an extreme overstatement of the total waste generated by the industry. EPA should have used a realistic, simpler extrapolation tool, such as pound or gallon of waste for gallon of product produced.

[6] "Listing Background Document For Paint Manufacturing Listing Determination," Dec. *15,* 2000, page 2-8.

[7] 66 Fed. Reg. 10070 (Feb. 13, 2001)

(PMLP 00033. NPCA, pages 8 and 9)

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5. Combination of waste streams

SUMMARY OF COMMENT

NPCA raised an issue concerning modeling each solid waste stream separately versus combining the waste volumes for all waste solids. NPCA states that by combining paint production waste liquids and paint production waste solids EPA inflated the imposed risks and that the specific waste streams would not have warranted listing when evaluated separately.

RESPONSE

We disagree with this contention. We combined in one risk assessment only those waste volumes for different solid waste streams that were reported in the 3007 survey being sent to municipal or industrial nonhazardous Subtitle D landfills. Each waste stream reported separately as going to a unique facility was considered as a separate waste volume in the distribution used in the risk assessment. We only added together waste volumes that were actually sent to the same physical location and type of waste management unit.

A number of facilities reported that they collect and store different types of waste solids (or waste liquids) in the same containers, as they are generated from a batch production process, *and then dispose of all the waste in a single waste management unit. Whether managed and transported separately by a paint manufacturer or combined before transport to a disposal facility, the vast majority of nonhazardous waste solids are managed in nonhazardous landfills, including 99 percent of emission control dust; 97 percent of wastewater treatment sludge; 86 percent of wash water sludge and 56 percent of off specification paint. We believe combining waste distributions from all these solid waste streams is most appropriate, because it is a more accurate representation of the waste management practices reported in the survey and of potential risks. It would only be appropriate to model each solid waste stream separately if each waste stream was being sent to a distinctive type of waste management practice, or if the waste characteristics for individual paint manufacturing solid waste streams are unique.*

As discussed above, modeling combined waste solids is an accurate representation of waste management practices reported in the 3007 survey and the most accurate representation of ground water risks associated with this disposal practice. We found that many generators tended to combine waste solids for disposal and that the vast majority of waste solids are disposed in nonhazardous landfills. Thus it is plausible to consider the combined solids as a class of waste for potential listing and combined solids results are more representative of the waste category we proposed to list. However, as noted previously, we are not finalizing a listing for this category because we believe that the risks from waste solids do not warrant listing.

VERBATIM COMMENT

By combining waste streams in the Proposed Rule (paint production waste liquids and paint production waste solids), EPA artificially and arbitrarily inflated the risks imposed. While the specific waste streams would not have warranted listing when evaluated separately, EPA arbitrarily combined volumes thereby inflating any potential risk associated with those wastes. Realistically, when collecting, storing and disposing of the specific waste streams, manufacturing sites would handle each stream separately and likely dispose of them separately. This is especially true if one waste stream or a portion of that waste stream presented a hazard under RCRA.

NPCA believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes and should have returned to the original waste streams and run these separately in the model.

(PMLP 00033. NPCA, page 7 and 8)

B. Changes to RCRA Section 3007 survey data

1. Waste volumes

SUMMARY OF COMMENT

NPCA indicated that two surveyed facilities inadvertently reported inaccurate waste volumes in the survey. One of these involved a solid wastestream, and the facility (survey identification number TXV345) submitted new information to reduce the amount of nonhazardous wastewater treatment sludge sent to a landfill from 500 to 250 tons per year. The other facility, survey identification number ILB249, removed nonhazardous wash liquids of 32,034 gallons from its questionnaire response.

RESPONSE

We have made this correction for nonhazardous wastewater treatment sludge and used the new waste quantity (500 tons) in our revised risk analysis.

We did not use the corrected wash liquid quantity as the commenter indicated because, as discussed in Section VIII, the risks from waste liquids do not warrant listing based on other factors.

VERBATIM COMMENT

In addition, two facilities - TXD345 and ILB249 - inadvertently reported wastewater sludges (250 tons) and washwaters (26,634 gallons) respectively, from resin manufacturing operations. These facilities sent letters to EPA requesting the data is changed in the RCRA 3007 ICR database.

(PMLP 00033. NPCA, page 9)

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2. Facility weighting

SUMMARY OF COMMENT

The Agency received one comment from NPCA arguing that the Agency mischaracterized some large facilities as small and some TRI facilities as non-TRI facilities, and that those facilities were assigned incorrect weighting factors. The commenter cited specific errors in EPA's facility categorization and the weighting factors assigned to four facilities generating large waste quantities, indicating that the waste quantity distributions used for our risk assessment of waste solids were improperly driven by the incorrect weighting factors for the cited facilities. The commenter stated that the weights for such miscategorized facilities should be corrected by moving these facilities to the correct strata. They also stated that the use of correct waste distributions would result in much higher risk based concentrations and many of the constituents would be dropped.

Of the two facilities that NPCA cited as mischaracterized as "small," one (survey identification number NCA016) pointed out that EPA miscategorized its facility as small with sales less than

$5 million based on the Dun and Bradstreet database when their 1998 sales volume was actually $109.1 million; the other commenter (survey identification number TNV346) similarly said that its 1998 sales were actually $30 million, not the $7 million reported in the Dun and Bradstreet database.

RESPONSE

We do not agree with the commenter that miscategorized facilities should be corrected by moving these facilities to the correct strata as the commenter suggested, as discussed below. But, we do accept the commenters information as to the two miscategorized small facilities as correct.

The sales volume data in the Dun and Bradstreet database contained a number of "zero" entries for a significant number of facilities. It was possible that some facilities did not sell any paints during the reporting period, or did not report their sales volume, or reported zero sales for other reasons. However, for the reasons discussed above, it was impracticable for us to contact every individual facility shown with a zero or missing sales volume. Because most facilities in the paint industry are relatively small, we believe it was reasonable to have classified those facilities with zero sales as "small."

Relative to the TRI status of certain facilities, we wish to clarify that the facilities classified in our TRI categories for the survey reflect those TRI generators that reported chemical releases in 1997 to land-based waste management units (landfills, surface impoundments, waste piles, etc.) of concern to this listing determination. Consequently, some surveyed facilities that reported only non-land-based releases (e.g., air emissions, energy recovery) in 1997 were not included in the TRI categories for survey sampling. Moreover, some facilities in the sampling population that might have reported TRI chemical releases to land-based management units in the years before and/or after 1997 were not included in the TRI categories either. Concerning the three facilities that one commenter argued should have been classified into TRI instead of non-TRI categories, they did not report any chemical releases to land-based management units in 1997. For this reason, we did not reclassify them into TRI categories.

Next, the claim that the sampling or statistical weights resulting from the stratification are incorrect because some facilities were not classified into the appropriate strata reflects a misunderstanding of what weighting represents in probability sampling. The statistical weights assigned to facilities in the various sampling strata reflect or indicate the probability of a facility being sampled from the population in a stratum, depending on how the facilities were categorized for sample selection, not on their true status. For example, if 100 facilities were placed in one stratum and 10 facilities were randomly sampled, each sampled facility would have a weight of 10. Misclassification or miscategorization of some facilities does not make the weights incorrect. In particular, the two misclassified large facilities cited by the commenters may be representative of other large facilities potentially misclassified in the same manner. However, we recognize miscategorization could result in increased uncertainty because facility *characteristics within the stratum, in this case waste generation rates, have a much broader range of values than anticipated. As such, the variability of estimates from survey data could be large. Our plan for post-survey adjustments to facility stratification and sampling weights, as described below, essentially treats the two large facilities that were misclassified in the "small" facility strata as representative of other large facilities that could have been similarly miscategorized in the same database. This approach reduces the variability of survey estimates.*

Although our stratified random-sampling survey was designed in a manner to ensure the best possible coverage, we acknowledged in the proposed rule (66 FR 10072) that, as in any other survey, there was uncertainty in our survey due to potential data source and sampling errors. Post-survey adjustment of sampling weights (i.e., re-weighting) to correct miscategorization and improve the certainty in the results involves a process called post-stratification and it is a common and appropriate statistical practice to help reduce the uncertainty associated with estimates from sampling survey. There are well known statistical techniques (e.g., Cochran, W. G. 1977[3]) that can be used for post-stratification and are widely employed in U.S. national surveys. Therefore, we developed post-survey adjustments to the survey weights to address the issues raised by the commenter concerning the miscategorization of facilities and the inappropriate extrapolation to the additional 705 facilities (discussed above in Section III.A.3) that were not included in the sampling population. We did not simply reclassify the strata of the two miscategorized facilities (due to incorrect sales volume information in the Dun and Bradstreet database) identified by the commenters. Their strata status cannot be simply changed by moving them into another stratum because that would violate the underlying probability structure of the survey. Some other surveyed facilities may be similarly mischaracterized in the same database, especially in regards to the facilities that had zero sales or missing data listed in the Dun and Bradstreet database. Unless accurate sales data can also be obtained for all the other facilities in the target population, it is inappropriate to just partially reclassify the two facilities with verified data.

Following review and consideration of the comments, and following the accepted statistical practice of post-survey stratification of surveyed facilities, we modified the facility stratification approach and adjusted the statistical weighting procedure to make the sample distribution more representative of the entire paint manufacturing population. These adjustments improve our extrapolation from survey data to the paint universe, and hence improve our estimates of waste quantity.

Post-Survey Adjustments to Weights

As explained above and in more detail in the Addendum to Risk Assessment Background

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[3] Cochran, W. G. 1977. Sampling Techniques, 3rd edition, John Wiley & Sons, New York, 428 pp.

Document for the Paint and Coatings Hazardous Waste Listing Determination available in the public docket, we performed post-survey stratification (or post-stratification) and re-weighting to improve our extrapolation from the survey data to the 705 facilities, and to make the sample distribution more representative of the sampling population of 884 facilities and the universe of paint manufacturers. We did this by using the following steps:

> *(i) Post-stratify the "small" facility categories based on the "number of employees" data in the Dun and Bradstreet database.*
> *(ii) Adjust statistical weights to compensate for the seven facilities that did not respond to the survey.*
> *(iii) Collapse two sets of statistical weights resulting from the two rounds of sampling.*
> *(iv) Examine the list of 705 facilities previously excluded from the sampling stratification, and include potentially in-scope paint manufacturers for the development of statistical weights for the paint universe.*

We discuss these steps in more detail below.

> <u>*Post-stratify the "small" facility categories based on the number of employees data in the Dun and Bradstreet Database*</u>

We agree with the commenters that the two facilities miscategorized as "small" due to incorrect sales volume information in the database should have been placed in other categories. Since accurate sales data could not be obtained for some other surveyed facilities that may be similarly mischaracterized in the same database, we did not partially reclassify the strata of those two miscategorized facilities because that would violate the underlying probability structure of the survey.

We reexamined the Dun and Bradstreet database used to assess whether the Agency mischaracterized some surveyed facilities. We found that the two facilities cited by the commenters (as miscategorized "small") had zero sales; one facility had 300 employees and the other facility 125 employees in the Dun and Bradstreet database. Moreover, we found numerous zero sales figures. Based on our analyses, many of these zero sales figures were aggregated and reported under a corporate or headquarters office such that sales volume figures for their multiple individual facilities showed zero. For instance, thirteen facilities with the same company name but different addresses and different facility identification numbers carried the same headquarters identification number; one of these facilities had a large sales volume while twelve had zero sales volume. We interpret this scenario as the headquarters reporting the aggregated sales volume under the headquarters address. For the other zero sales figures, we surmise they could be due to a variety of reasons: there were no sales in the reporting period, sales data were not released to Dun and Bradstreet; or there were reporting or entry errors in the database. All the facilities with zero sales in the sampling population were in the "small" categories (e.g., Small, non-TRI, SIC 2851-01; Small, non-TRI, SIC 2851-02; Small, TRI, SIC 2851-01; Small, TRI, SIC 2851-02), with the majority in the "Small, non-TRI" strata. Based on *this, we decided to use the "number of employees" data for post-stratification of the facilities originally classified in the "Small, non-TRI" categories since employee data in the database were essentially complete and would offer a reasonable measure of facility size (for more detail see "Addendum to the Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination" which is available in the docket for today's final determination).*

On the other hand, we maintained the "Large" and "Medium" categories as originally stratified as there is no compelling reason to discount the sales volume data for those large and medium facilities.

Adjust statistical weights to compensate for the seven nonresponding facilities that did not respond to the survey

Out of the 299 facilities surveyed, seven facilities did not respond to the questionnaires. Using survey data from the respondents inevitably caused some bias, though insignificant in this case, in data extrapolation to the sampling population of 884 facilities (and in turn to the paint universe). That is, without accounting for the seven nonresponding facilities, the total waste generation might have been slightly underestimated. None of the commenters raised this issue. We, nevertheless, took this step to improve the statistical validity of our methodology. We adjusted the statistical weights to compensate for the nonresponse among the six surveyed facilities that we were able to contact or track. These were determined to be eligible for the survey because they were in business in 1998. (Eligibility only refers to whether the facility was in business and could respond to the survey, not whether the facility was a paint manufacturer.) This allows the respondents to represent the nonrespondents.

Collapse two sets of statistical weights resulting from the two rounds of sampling

As described in the listing background document available in the public docket for the proposed rule, the Agency conducted two rounds of sampling in February and March 2000. That is, we initially sent out questionnaires to 250 facilities, after which we discovered that only facilities located in States from Alabama through Ohio (alphabetically) were sampled. In order to correct this error, we sent out additional questionnaires to 49 facilities located in states after Ohio (alphabetically), which were randomly selected using the same statistical methodology. This resulted in two sets of facilities with differing sampling weights. While using the two sets of weights for population extrapolation was statistically valid, we decided to collapse the "through Ohio" stratum with the "after Ohio" stratum to reduce sampling variances and unequal weighting effects. We believe that the alphabetical position of the states within strata bears no relationship to the survey outcomes, and thus collapsing the "through Ohio" stratum with the "after Ohio" stratum would not introduce bias. As demonstrated in the "Addendum to the Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination" available in the public docket, collapsing the two sets of weights reduced the variability in the sampling weights and improved the precision of the survey estimates.

Examine the list of 705 facilities previously excluded from the sampling stratification, and include potentially in-scope paint manufacturers for the development of statistical weights for the paint universe

To address the comment that the Agency improperly assumed that the facilities in the sampling population of 884 facilities were representative of those in the group of 705 undefined facilities previously excluded from the sampling stratification, we reexamined the Dun and Bradstreet database to determine which of the 705 previously excluded facilities also could be in-scope paint manufacturers. We eliminated 45 duplicates and added the remaining 660 possible in-scope paint manufacturers to the sampling population of 884 to become the full list of 1,544 facilities (hereafter referred to as the full target population) potentially subject to the listing. We included these 660 possible in-scope facilities in our post-survey analyses, for comparison of the results based on the full target population with those based on the sampling population (i.e., assessing the impact of analysis with or without including the 660 facilities). However, we note that we still could not tell which and how many of these 660 facilities might be associated with the paint types of interest to this listing determination, and thus the uncertainty in the group of 705 undefined facilities persists and carries over to the full target population of 1,544 facilities.

Moreover, as discussed above, we could not distinguish the types of paint production for the group of 660 undefined facilities to classify them into architectural/special purpose and OEM categories. By the same token, after combining the 660 and 884 facilities into the full target population of 1,544 facilities, we could no longer stratify all the facilities into architectural and OEM categories. Since paint type was not a relevant factor in our analyses (i.e., from the survey we found no significant difference between the two types of paint production in terms of waste types and amounts generated, waste characteristics and constituents, and waste management practices), this did not affect the validity of the categorization.

Taking steps (i) to (iii), as outlined above, we developed post-strata and adjusted weights for the sampling population of 884 facilities. Likewise, taking steps (i) to (iv), as outlined above, we developed another set of post-strata and adjusted weights for the paint universe using the target population of 1,544 facilities. Table III-1 shows the resulting post-strata.

TABLE III-1
Post-strata for the Sampling Population (884) and the Full Target Population (1,544)

Original Facility Size Categories	TRI Status	Paint Types	Sales	No. of Employees for Small, non-TRI Strata	Sampling Population of 884		Target Population of 1,544	
					Sample Size	No. of Facilities	Sample Size	No of Facilities
Large (> 20 Million)	TRI	2851-01	See Note 1 below		2	2	2	6
		2851-02	See Note 1 below		0	0		
	non-TRI	2851-01	See Note 1 below		26	32	46	71
		2851-02	See Note 1 below		20	21		
Medium ($5 Million to $20 Million	TRI	2851-01	See Note 1 below		1	1	1	2
		2851-02	See Note 1 below		0	0		
	non-TRI	2851-01	See Note 1 below		50	64	86	159
		2851-02	See Note 1 below		36	50		
Small (< 5 Million)	TRI	2851-01	See Note 1 below		5	5	12	37
		2851-02	See Note 1 below		7	7		
	non-TRI	2851-01 and 2851-02 Combined	Zero	0 - 6	21	100	21	235
				7 and up	22	108	22	265
			> Zero	0 - 4	37	185	37	311
				5 - 9	30	133	30	201
				10 and up	42	177	42	257
				TOTAL:	299	884	299	1,544

NOTES:

1. "Large," "Medium," and "Small, TRI" categories were not re-stratified according to employee counts, while "Small, non-TRI" categories were re-stratified based on employee counts in place of sales figures.

As a result of the aforementioned post-stratification and re-weighting, the statistical weighting factors assigned to the surveyed facilities changed somewhat, as expected. Details about post-stratification and re-weighting, the statistical techniques used, and the resulting adjusted weights for the sampling population of 884 and the target population of 1,544 facilities, may be found in the Addendum to Risk Assessment Background Document for the Paint and Coatings Hazardous Waste Listing Determination available in the public docket.

Adjusted Statistical Analyses of RCRA Section 3007 Survey Data

We conducted three adjusted statistical analyses to derive the waste quantity distributions as inputs to the risk modeling, including:

- *one bounding analysis, using the revised weights suggested by one commenter for the two facilities miscategorized as small, without making any other weight adjustments;*
- *one analysis using adjusted weights for the sampling population of 884 facilities per post-survey adjustment and re-weighting (but not the two revised weights suggested by the commenter); and*
- *one analysis using adjusted weights for the entire paint universe per post-survey adjustment and re-weighting (but not the two revised weights suggested by the commenter).*

To assess the impact of changing weights for the two facilities mischaracterized as small, we initially conducted a bounding analysis using the revised weights (one changed from 4.0476 to 1, and the other from 7.6154 to 1) suggested by one commenter. We note that these two facilities generated relatively higher quantities of nonhazardous waste solids among the various quantities modeled for the landfill disposal scenario. Changing their statistical weights would affect the waste quantity distributions and could conceivably result in somewhat different risk assessment results. As we noted above, we consider simply changing these two weights to be statistically incorrect. Nevertheless, we conducted this bounding analysis for two key target constituents, acrylamide and antimony. The results indicate that the changes made to the waste quantity distributions do not appear to have a significant impact on the proposed listing levels for waste solids, i.e., making these changes would increase the listing levels by about a factor of 1.7 for the two constituents (see Table III-2).

TABLE III-2
Risk Concentration Levels for Combined Waste Solids (mg/Kg)[1]

Constituent of Concern	Original Level from Proposal (* indicates correction for shower model error)	Level Resulting from Bounding Analysis[2]	Level Resulting from Adjusted Weights-- Population of 884 Facilities	Level Resulting from Adjusted Weights -- Population of 1,544 Facilities
Acrylamide	470	810	370	250
Acrylonitrile	60 [440]*	Not Analyzed[3]	340	220
Antimony	3,200	5,300	2,600	1,700
Methyl Isobutyl Ketone	120,000	Not Analyzed[3]	>1,000,000	> 1,000,000
Methyl Methacrylate	41,000	Not Analyzed[3]	>1,000,000	> 1,000,000

NOTES:

[1] Revised results from adjusted weights also reflect the corrections for error in the shower model.
[2] Moving two misclassified facilities per comments.
[3] It was already known that an error in the shower model would increase this level.

Using the corrected waste solid quantity (as discussed above in Section III.B.1) as well as the adjusted statistical weights for both the sampling population of 884 and the full target population of 1,544 facilities resulted in a modified distribution of nonhazardous waste solids going to nonhazardous landfills. We note that adjusting the weights did not change the distribution significantly. Specifically, the percentile[4] quantities from the resulting waste quantity distributions, which generally represent the characteristics of the paint universe's nonhazardous waste solids that are landfilled, essentially remain as originally estimated with slight variations. See Table III-3, and the Addendum to Risk Assessment Background Document for the Paint and Coatings Hazardous Waste Listing Determination for details.

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[4] A percentile of a distribution represents a value below which a specified percentage of the data lie. For example, the 50th percentile is the value that 50% of the data lie below.

TABLE III-3
Waste Quantity Distributions
Combined Nonhazardous Waste Solid Quantities Used for the Risk Assessment

Percentile	Waste Quantity Distribution (gallons/year)		
	Resulting from Original Weights for the Sampling Population of 884 Facilities	Resulting from Adjusted Weights for the Sampling Population of 884 Facilities	Resulting from Adjusted Weights for the Full Target Population of 1,544 Facilities
10th	40	45	55
20th	75	100	126
30th	172	214	269
40th	300	300	330
50th (Median)	374	374	450
60th	550	600	917
70th	1,100	1,560	2,067
80th	4,039	4,077	7,650
90th	43,266	43,266	43,266

We realize that there is a greater degree of uncertainty in the adjusted weights and statistical analysis for the full target population of 1,544 facilities than the sampling population of 884 facilities, because it is likely that more of the 660 (out of 705) facilities are producing products outside the scope of the rulemaking. Therefore, we maintain our conclusion that the waste quantity distributions (whether adjusted or not) for the sampling population of 884 facilities should be more representative of the paint universe than those for the full target population of 1,544 facilities. As such, we performed an adjusted statistical analysis of nonhazardous waste solids going to *nonhazardous landfills for the sampling population of 884 facilities. Nonetheless, we also performed a similar adjusted statistical analysis for the full target population of 1,544 facilities for comparison. The final results revealed that neither of these two adjusted statistical analyses would significantly impact the risk assessment results.*

Results of the final risk assessment using revised/adjusted statistical weights in conjunction with a correction to the shower model inhalation exposure for non-carcinogens (addressed in Section VIII) are summarized in Table III-2. For details, see Addendum to Risk Assessment Technical Background Document for the Paint Production Listing Determination available in the public docket. Using the adjusted weights for the sampling population of 884 facilities and the corrected waste solid quantity in response to comments, the final risk assessment for combined waste solids resulted in decreased risk concentration levels for three constituents of concern by about a factor of 1.3. Even at these lower levels, we do not believe listing paint waste solids is warranted; see detailed discussions in Section VIII.

Finally, we estimated the paint manufacturing universe by extrapolation using the adjusted weights. We found that the estimated total number of paint manufacturing facilities has increased from 566 (66 FR 10072) to 615 for the sampling population, but decreased from 972 (66 FR 10072) to 847 for the paint universe based on the full target population. In addition, the adjusted weights have resulted in a moderate increase in the total industry waste quantity from original estimates, from approximately 107,000 to approximately 121,000 metric tons. See Table III-4 for revised industry hazardous and nonhazardous waste quantities.

TABLE III-4

Estimated Total Industry Waste Quantities by Liquid/Solid Matrices

Paint Manufacturing Waste Liquids and Solids	Total Industry Waste Quantities (in metric tons)		
	Hazardous	Nonhazardous	Hazardous and Nonhazardous
Total Waste Liquids			
Original Estimate	25,990	53,417	79,407
New Estimate Based on Adjusted Weights *	28,341	56,516	84,857
Total Waste Solids:			
Original Estimate	12,859	14,495	27,354
New Estimate Based on Adjusted Weights *	16,222	19,856	36,078
TOTAL Solids and Liquids:			
Original Estimate	38,849	67,912	106,761
New Estimate Based on Adjusted Weights *	44,563	76,372	120,935

NOTE:

* *For the full target population of 1,544 facilities*

VERBATIM COMMENT

The EPA's waste volume distributions inaccurately and arbitrarily characterize the waste volumes of the industry thereby greatly inflating any hypothetical risk projections that are derived from EPA's theoretical modeling of these wastes. The EPA developed substantially overblown waste volume estimates as input parameters for its theoretical risk assessment model. Based on the RCRA 3007 ICR responses of waste volumes produced by the paint manufacturing industry, EPA provided a discrete distribution of waste volumes for liquid waste, emission control dust, and combined solids, along with weighting factors (Appendix S)[5] that are erroneous.

The distribution tables in Appendix S show that two facilities reported much larger liquid, emission control dust and combined solids waste volumes than the rest of the surveyed facilities. For example, for combined solids the largest reported volume is 426,738 gallons per year. After this, the data points drop off significantly (greater than 70% reduction and 84% reduction for the next two data points respectively). This trend is also consistent for the liquid and emission control dust waste distributions.[8]

Importantly, EPA used very large weighting factors for some of the largest emission control dust and combined solids waste data points. As an example, the second largest emission control dust waste data point has a percent weight of 14.94%, nearly double any of the other reported data. The same is true for combined solids, where the "Crystal Ball" results for emission control wastes drop off significantly after the first two largest reported volume data points. This distorting error is repeated for the third and fourth largest combined solids waste data points, in which the reported percent weights are 5.74% and 3.07% respectively.[9]

5 "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination," Jan. 17, 2001, page 4-5.

8 "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination," Jan. 17, 2001, Appendix S, pages S-4 through S-8.

9 Id at Appendix S, pages S-9 through S-13.

While there are obviously going to be differences in the amount of these wastes generated at different sites, most paint manufacturing sites use the same equipment, same pollution control devices, have similar formulas and have similar manufacturing processes. On average, one would expect similar waste generation rates per unit produced. EPA's weighting factors of 4 to 8 is arbitrary and has resulted in an extreme overstatement of the total waste generated by the industry. EPA should have used a realistic, simpler extrapolation tool, such as pound or gallon of waste for gallon of product produced.

Because of these discrepancies in waste distributions, NPCA further reviewed the data and found significant errors in EPA's categorization of and, ultimately, the weighting factors assigned to the top five facilities. EPA mischaracterized some large manufacturing facilities as small, and some TRI facilities as non-TRI facilities and pursuant to these categorizations assigned the incorrect weighting factor when making the waste volume distributions. A summary of the key problems is as follows:

Facility ID#	EPA Category	EPA Weighting Factor	Correct Category	Correct Weighting Factor
NCAO16	Small Non-TRI	4.0476	Large TRI	1
TNV346	Small Non-TM	7.6154	Large	1
1LP084	Non-TRI	1.1951	TRI	1
LAB217	Non-TRI	1.2143	TRI	1

NPCA has attached letters from Akzo Nobel and Valspar Corporation, which detail the true size of their North Carolina and Tennessee facilities. The NPCA has also attached TRI reports for each of the three facilities referenced above.

The following table lists examples of EPA's incorrectly extrapolated weighted volumes, and NPCA corrected volumes for the above referenced facilities. This table clearly indicates that these incorrect extrapolations result in a significant overestimation of waste volumes for the paint manufacturing industry.

Waste Type	Facility ID#	EPA Volumes	Correct Volumes
Dust (m^3/yr.)	TNV346	355.8	297.7
	1LP084	1,681.5	220.8
Subtotal		2,037.3	518.5
Total Overestimation	***1,518.8*** **(68% Reduction in dust disposed in either a municipal waste landfill or a Subtitle D landfill that totaled 2,222.8 metric tons[1])**		
Combined solids (m^3/yr.)	NCA016	663	163.8
	TNV346	1,931.3	253.6
	1LP084	579.7	485.1
	TXL345*	1,615.4	1,459.6
Subtotal		4,789.4	2,362,1
Total Overestimation	***2,427.3*** **(44% Reduction in combined solids disposed in either a municipal waste landfill or a Subtitle D landfill that totaled**		

	5,492.8 metric tons[2])		
Aqueous waste (m^3/yr.)	LAB217	479.1	394.5
	1LB249*	104.6	0
Subtotal		583.7	394.5
Total Overestimation	***189.18*** **(3% Reduction in liquids disposed in WWTFs that totaled 6,407 metric tons[3])**		

* Changes to RCRA 3007 ICR database.

[1] Percent Reduction from EPA's estimated volumes listed in Table 4-9, page 4-25 of the Paint Manufacturing Listing Determination Background Document.

[2] Percent reduction from EPA's estimated volumes listed in Table III.D-3 on page 10077 of Proposed Rule.

[3] Percent reduction from EPA's estimated volumes listed in Table III.D-4 on page 10080 of Proposed Rule.

EPA's distributions of waste stream data, based on incorrect information, are summarized below:[10]

Waste Type	Min	10%	50%	90%	Max
Dust (m^3/yr.)	0.15	0.38	2.44	220.8	297.7
Combined solids (m^3/yr.)	0.02	0.15	1.42	163.8	1,615.4
Aqueous waste (m^3/yr.)	0.57	1.14	45.42	101.3	394.5

With the corrected category information, weighting factors, and corrected information for facilities TXD345 and 1LB249, NPCA believes that the true distributions of waste stream data would be as follows:

Waste type	Min	10%	50%	90%	Max
Dust (m^3/yr.)	0.15	0.38	***1.7***	***12.16***	297.7
Combined solids (m^3/yr.)	0.02	0.15	1.42	***27.18***	***1,459.6***
Aqueous waste (m^3/yr.)	0.57	1.14	45.42	***78.78***	394.5

Note - changes from EPA's estimates are in bold and italic.

It is clear from the corrected waste distributions above that the waste volumes used by EPA to model were improperly driven by the weighting factors for a few facilities. As a result of the corrections the weighting factors and associated distribution weight percents for the top waste volume facilities are much less than originally estimated. EPA used the waste volumes in the 50th to 90th percentile in the risk models, which are one of the most important input variables. The above table shows that the 90th percentile waste volume for emission control dust and combined solids were overestimated by an order of magnitude!

The use of the correct waste distributions would result in much higher risk based concentrations, thereby many of the constituents would be dropped, eliminating the basis for a hazardous waste listing determination.

10 Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination" Jan. 17, 2001, pages 4-6.

(PMLP 00033. NPCA, pages 8, 9, 10, 11 w/attachments)

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C. Lack of waste sampling data

SUMMARY OF COMMENT

The Agency received one comment from NPCA on the lack of waste sampling data. The NPCA supports a concentration-based listing approach but only if the approach is based on supportable assumptions. The methodology followed in the risk assessment led to many chemicals being added without cause because risks were inflated. They stated that EPA did not collect and analyze any representative samples from our industry and were therefore forced to rely on false assumptions as to paint waste characteristics and constituent concentrations. In addition, the commenter indicated that the industry can not reliably analyze for the constituents of concern, making the implementation of the Proposed Rule questionable.

RESPONSE

We did not artificially and arbitrarily characterize the industry's waste streams and constituents. As described in the proposal (66 FR 10069 and 10083), it was not practical for EPA to collect and analyze representative samples from the paint production industry due to the enormous size of the industry, the wide variety of paint products manufactured, the blending nature of the paint manufacturing processes, the wide variety of paint manufacturing wastestreams generated, and thus the potentially high variability in the waste characteristics. Using a concentration-based listing approach as an alternative, we relied on publically available sources of information and environmental databases to characterize the constituents likely to be present in paint manufacturing wastes. We then verified and supplemented these public sources with the constituent information *provided by the RCRA 3007 survey respondents. We maintain our belief that this approach for the proposed action was reasonable.*

Furthermore, as discussed in detail in section VIII, we also reviewed public comments and reconsidered the available information for making final decisions. For example, we agree with commenters that the use of acrylamide in binders appears to be relatively rare; our use of the 1000 ppm concentration of monomers in paint binders from the MSDS represents an implausible case; the use of surface impoundments for treatment of paint manufacturing waste liquids appears to be even less frequent than we estimated at the proposal. We have now concluded that the proposed listings for paint waste solids and liquids are not warranted.

Relative to the comment that the industry can not reliably analyze for certain constituents of concern, we are not addressing the comments on the proposed implementation provisions for paint wastes at this time because the Agency has determined not to list any of the paint production wastes as proposed. See further discussion in section IX.

VERBATIM COMMENT

EPA proposed a concentration-based listing under this rulemaking. NPCA supports a concentration-based approach for listing determinations, provided that the concentration-based approach was based on supportable assumptions. In addition, any concentration-based approach should also be specific to the waste management practices shown to pose an actual risk. The material EPA has currently proposed is incomplete as to its assumptions and incorrect as to waste management practices and, therefore, does not permit a full analysis.

After a review of the information provided by EPA, NPCA believes that the risk assessment methodology EPA used to determine which chemicals to list caused many chemicals to be added that either are not present at concentrations of concern or do not present a substantial risk. In addition, problems with the ICR lead to inclusion of the monomers. In addition, as discussed supra, industry can not reliably analyze for these constituents, making the implementation of the Proposed Rule questionable.

With respect to EPA's risk assessment, EPA continuously adjusted the theoretical concentration of the constituents in the volumes until a point was reached where the constituents caused an unacceptable risk. By doing this EPA artificially and arbitrarily characterized the industry's waste streams and on that basis concluded that the constituents and associated waste streams of this industry are in fact hazardous without a realistic assessment of the actual concentrations of constituents in those waste streams. In other words, EPA arbitrarily inflated the risk posed by wastes by failing to make accurate assumptions concerning the actual concentration of constituents. This methodology allowed EPA to complete their risk assessment in a short period of time, but it allowed EPA to avoid the necessary task for a sound decision of gauging the actual constituent concentrations that are actually found in paint production waste residuals. In fact, EPA did not collect and analyze any representative samples from our industry.

(PMLP 00033. NPCA, page 26 w/attachments)

IV. CONCENTRATION-BASED APPROACH TO THIS LISTING

As discussed in Section IV. B. of the final determination, we have determined not to finalize a hazardous waste listing for paint manufacturing wastes. Therefore, we are not addressing comments specific to these concerns.

SUMMARY OF COMMENTS

The Agency received three favorable comments, one from an association and two from industry, on the listing-based approach. SOCMA agreed that the batch nature of the paint manufacturing industry lends itself to such a listing approach, if a listing is required. The industry commentors agreed with the Agency that this approach would reduce the burden on the industry and encourage manufacturers to reduce hazardous constituents in their waste streams leading to a reduction in the volume of hazardous waste generated.

VERBATIM COMMENTS

In the preamble to the Proposed Rule, EPA indicates that the batch nature of paint production operations typically can lead to highly variable waste streams and acknowledges that the variable nature of these waste streams was a factor in EPA's use of a concentration-based approach to the listings set out in the Proposed Rule. 66 Fed. Reg. at 10068. SOCMA is pleased that EPA has thus acknowledged one of the key differences between batch and continuous manufacturing operations and supports the Agency's decision to develop a regulatory approach that takes these differences into consideration.[1] SOCMA hopes that recognition in the Proposed Rule of the unique attributes of batch operations will set a precedent for other aspects of the hazardous waste regulatory program.

As noted above, many SOCMA members engage in batch and custom chemical manufacturing operations. Often, these operations are disadvantaged by environmental regulations that are crafted with one paradigm in mind, that of a continuous manufacturing process. However, batch and custom chemical manufacturing operations, like those of paint manufacturing, differ from the constant, single-product chemical operations in a number of ways. Batch processing provides an efficient and frequently the only method to make small quantities of chemicals to meet specific needs and consumer demands for specialized products. Batch processors must be able to respond quickly to new requirements from customers, fill small market niches and develop new products. This segment of the chemical industry retains a high degree of entrepreneurship and must retain the flexibility to meet ever-changing needs and new technological developments.

Batch processes are distinct from continuous operations in that a continuous operation has a constant raw material feed to each unit operation and continual product withdrawal from each unit operation. A batch process has an intermittent introduction of frequently changing raw materials into the process and varying process conditions imposed on the process within the same vessel. As a result, the waste streams generated by a single batch-processing facility can vary substantially over time, particularly as compared with the waste streams generated by a continuously operating process.

There are two other differences between custom and commodity chemical manufacturing that are worth noting. Batch and custom chemical manufacturers may use the same equipment to make small quantities of 10, 20 or even more different products, whereas continuous manufacturers may use dedicated equipment to produce large quantities of the same product. In addition, batch or custom chemicals are often manufactured in a brief production campaign for a focused time period whereas continuous products are normally made year round. Thus, batch-manufacturing operations are often the generators of numerous waste streams that reflect the changing product mix characteristic of this manufacturing sector.

Routine compliance with testing, notification and recordkeeping requirements can often be comparatively more burdensome for these facilities due to the fluctuating nature of waste streams and frequent shifts in production. In addition, a number of options for minimizing the impact of the hazardous waste listings - such as delisting petitions - are both practically and economically of little value to this industry sector due to the relatively smaller volumes and variable types of wastes generated. In the case of smaller companies and smaller facilities, this disproportionate regulatory burden can have a particularly significant impact.

Given that these various attributes of batch specialty chemical manufacturing can present unique challenges in the context of environmental regulations, SOCMA is pleased that EPA is now taking the nature of batch manufacturing operations into account as it develops new regulations under Subtitle C of RCRA. SOCMA hopes that EPA will take the logical next step and consider how it might modify existing hazardous waste regulations to provide relief to other batch manufacturing sectors.

1 EPA also gave some consideration to the nature of batch manufacturing operations in its development of proposed listings for the dye and pigment industries. 64 Fed. Reg. 40192 (July 23, 1999). SOCMA submitted comments expressing support for several aspects of that proposal. See SOCMA Comments re "Proposed Rule for Hazardous Waste Listing for the Dyes and Pigments Industries," Docket No. F-1999-DPIP-FFFFF, dated October 20, 1999.

(PMLP 00012. SOCMA, page 3, 4)

Eastman feels strongly that a concentration-based approach is a common-sense approach to listing that reduces the overall burden on the regulated community. It also allows the responsible allocation of resources to the management of only truly hazardous waste. In addition, facilities are encouraged to minimize the constituent levels in a given waste stream, such that those streams do not require management as hazardous waste. Thus, Eastman commends the Agency for the concentration-based approach used in this proposal.

(PMLP 00032. Eastman Chemical Co., page 10)

DuPont commends the Agency for having recognized the benefits of moving toward a performance-based listing system by proposing a concentration-based listing for paint manufacturing wastes. We agree that such an approach has several distinct advantages over a traditional listing. Specifically, we agree with the following points the Agency raises in the proposed rule:

- A concentration-based approach allows facilities to evaluate variable wastes individually for hazard. This approach reduces the volume of wastes to be managed under Subtitle C to those that are truly hazardous.
- A concentration-based approach may provide an incentive for facilities to modify their manufacturing processes or treat their wastes to reduce the constituent concentrations to below hazardous levels, encouraging waste minimization and reduced use of toxic constituents.

(PMLP 00041. DuPont, page 16, 17, w/attachments)

DuPont strongly encourages the Agency to adopt a concentration-based listing approach for paint manufacturing wastes if, in fact, it is determined that the proposed listing is warranted.

(PMLP 00041. DuPont, page 17, w/attachments)

V. USE OF RCRA SECTION 3007 SURVEY DATA TO CHOOSE PLAUSIBLE MANAGEMENT SCENARIOS

A. General survey information

Responses to each separate issue follow the list of verbatim comments.

SUMMARY OF COMMENT

The Agency received one comment from NPCA on the use of general survey information. They stated that EPA used artificially elevated volumes associated with powder coating production facilities and that EPA should have considered that these volumes are reduced in landfills as the density increases through compaction. Also, NPCA pointed out that wastes from powder coating manufacturers are much less dense that those from liquid paint manufacturers. Since the risk assessment model utilizes volume and not weight, the powder coating manufacturer data mistakenly drove the risk assessment.

NPCA also stated that EPA should not have modeled emission control dusts in the combined solids risk assessment since there are no reported emission control dusts containing any of the organic paint production solids constituents of concern. NPCA expressed their disagreement with the Agency in determining constituent concentrations for solid waste based on the emission dust risk assessment and not the combined solid waste assessment.

VERBATIM COMMENT

Again, by combining waste streams, EPA overestimated the volume of wastes being disposed of by the industry. Different solid waste streams have different densities at the point of generation and disposal. For example, powder coatings and powder off-specification paint waste have densities on the order of 3 to 4 pounds per gallon as shipped from a site. Other solid wastes can have densities as high as 10 pounds per gallon. The survey data for solids was collected in pounds. Once in a landfill, however, these lighter powders become more compact and dense. The risk model requires the input of these wastes by volume. In converting the amount of solids from pounds to volumes (m^3/yr), and combining the waste streams, EPA overstated the waste volumes.

Similarly, EPA has derived grossly unrepresentative emission control dust and combined solids information by improperly combining liquid paint and powder coatings survey information when, in fact, the wastes generated from these two distinct operations that are significantly different.

The EPA utilized volumes of wastes in its risk assessment model, and since powder coating emission control dust and powder off-specification product are much less dense (as much as five times) than liquid paint emission control dust and off-specification product, the risk assessment was driven by mistakenly derived large volumes of powder coating wastes. For example the third largest reported waste volume data point of combined solids and the second largest reported waste volume data point of emission control dust were from the Valspar - TNV346 facility. This facility only had two non-hazardous solid waste streams - emission control dust (175,000 lbs.) and off specification product (26,000 lbs.). The only reason why this facility had large volumes of solid waste was the fact that powder coatings emission control dust and powder off specification product are not dense - 3 lbs. per gallon vs. greater than 10 lbs. per gallon for liquids paint. This trend holds for TCI Powders - GAT 237 as well (third largest emission control dust volume data point). This is important since EPA's risk model used waste stream volumes, not waste stream weights. Because of this fact, the upper end of the paint production industry waste distribution for emission control dust and combined solids was artificially increased because the density characteristics of powder coatings. As a result the risks associated with emission control dust and combined solids were artificially and arbitrarily increased as well. It is also important to note that compaction that occurs in landfills greatly reduces the volumes of these waste streams, but EPA's risk model does not take this into account.

The EPA should not have used the artificially elevated volumes associated with powder coating production facilities. EPA should have also considered the fact that these volumes are reduced in the landfill. EPA's error substantially inflated its hypothetical modeled "risk" results.

(PMLP 00033. NPCA, page 11, 12 w/attachments)

The EPA developed concentration levels for solids based on emission control dust and combined solids managed in a landfill.[24] While, as stated previously, EPA was tasked with assessing five separate waste streams in this listing determination, due to EPA's lack of data and the artificially imposed time frame with which they drafted the rule, EPA chose to combine the waste streams. However, when it suited EPAs statistical risk conclusions, EPA modeled and then used results for one of the waste streams, specifically emission control dusts. The EPA assumed that emission control dust contained the proposed organic constituents of concern for paint production solids, i.e. Acrylamide, Acrylontrile, Methyl Isobutyl Ketone and Methyl Methacrylate. As the emission control dust concentration levels were lower than the concentration levels determined for the combined solids, EPA arbitrarily used the control dust levels in the Proposed Rule.[25]

Emission Control dusts are generated during the process of adding solid, powdered materials during the mixing or dispersion process of paint manufacturing. The air stream that picks up the dust will include solvent vapors (which pass through a dust collector to become air emissions) and inorganic pigment dusts. On rare occasions, powdered resins are used which the dust collector may collect, but liquid resins are predominately used. Since resins are used in a liquid form and solvents tend to pass through dust collectors, there is not a high incident of emission control dust residuals containing organic materials. Not surprisingly therefore, out of the 187 paint manufacturers survey, only one facility reported emission control dust residuals containing any of the proposed organic paint production solid waste constituents of concern.[26] This one facility reported an emission control dust residual containing Methyl Isobutyl Ketone. After further review of the data submitted under the RCRA 3007 ICR, however, the parent company of this facility confirmed that the reported Methyl Isobutyl Ketone was mistakenly identified and not in fact a constituent of their emission control dust residual waste.

At a March 14, 2001, meeting between EPA and NPCA, EPA stated that it did not base its decision to model emission control dust with organics solely on the one facility that mistakenly reported organics in its emission control dust residuals, but also relied on information gained from site visits. NPCA reviewed EPA site visit summaries, however, and found no additional evidence in the Administrative Record indicating that emission control dust residuals from the paint industry contain any of the organic constituents of concern.

Therefore, NPCA believes EPA should not have modeled emission control dusts nor should EPA include emission control dust in the combined solids risk assessment model for this listing determination, since there are no reported emission control dusts containing any of the organic paint production solids constituents of concern. EPA's decision to pull out emission control dust and model it separately from the combined solids waste stream was entirely arbitrary. EPA chose to model emission control dust separately because dust, by itself, had larger (10%, 50%, and 90%) percentile waste volumes, which, as it turns out, was actually caused by EPA's mischaracterization of the data. The only other basis EPA might have for modeling emission control dusts is the presence Antimony. If, EPA decides to list Antimony as a COC despite its lack of any reportable risks, as discussed below, EPA should appropriately limit their modeling risk assessment of emission control dusts to that constituent and accurately base their concentration levels on a risk assessment that appropriately characterized the wastes streams involved.

24 66 Fed. Reg. 10097 (Feb. 13, 2001).

25 Id at 10103.

26 "Listing Background Document For Paint Manufacturing Listing Determination," Dec. 15, 2000, page 4-26.

(PMLP 00033. NPCA, page 18, 19 w/attachments)

RESPONSE

One trade association claimed that we incorrectly estimated the waste volumes for one facility that reported two of the largest solid waste streams for emission control dust and off specification product, because we did not account for the appropriate waste density. In order to convert waste *amounts into volumes for input into the risk assessment models, we asked 3007 survey respondents to provide information on the amount of each waste stream they generate by weight in metric tons as well as the density of each waste stream. We used the density information to convert the weight of each waste stream into gallons. The commenter claimed that the two waste streams in question are from the production of powder coatings and have a low density of three to four pounds per gallon. The commenter argued that we used the wrong waste densities and, therefore, overestimated volumes of emission control dust and off specification paint from this facility. We have reviewed the data supplied by the facility in question and find that they specified a density of three pounds per gallon for each of these two waste streams, which were the densities used in calculating their waste volumes. Therefore, we did not overestimate the volume of these waste streams.*

The same commenter also argued that we arbitrarily used the risk assessment results from modeling emission control dust alone as the proposed listing concentration levels for combined solids because the concentrations were lower. We modeled emission control dust waste volumes separately to examine the potential risk from air releases from landfills, i.e., we assumed low moisture content in the emission control dust wastes and assessed risks from wind-blown releases. Our modeling showed that these low moisture wastes did not pose any significant risks via air releases; thus both the dust and combined solids results are driven by the groundwater pathway. In the proposal, we suggested using the listing levels for the dusts because the levels were slightly lower.

The differences in the proposed listing levels for dusts and combined solids were relatively small (combined solids levels were higher by about a factor of 1.5 for the constituents of concern). The slightly lower levels derived from the dust scenario are a result of the volume distribution for dust waste volumes. This is due to the fact that the individual emission control dust waste volumes generated from paint manufacturing tended to be larger. In the combined solids waste volumes, many reported sludge or off-specification paint waste volumes that were quite small. Therefore, even though the total volume of wastes for combined solids was higher, the dust volumes yielded somewhat lower listing levels.

As discussed in Section III.A., modeling combined waste solids is an accurate representation of waste management practices reported in the 3007 survey and the most accurate representation of ground water risks associated with this disposal practice. Therefore, we conclude that listing levels for waste solids are more appropriately derived from the combined solids modeling.

The same industry trade association also argued that we should not have modeled emission control dust in the combined solids assessment because the only constituent that would be a basis for listing emission control dust is antimony. They contend that we should not have modeled organic constituents in emission control dust because there is not a high incidence of emission control dust residual containing organic materials. The commenter noted that only one surveyed facility reported any of the proposed organic constituents of concern. That facility inaccurately reported methyl isobutyl ketone (MIBK) in their dust. The facility later submitted revised information to indicate that their dusts do not contain MIBK.

We continue to believe our rationale is appropriate for modeling all of the potential constituents of *concern in all waste streams for several reasons. First, we note that 32 surveyed facilities identified potential constituents of concern in their nonhazardous emission control dusts, including constituents such as cobalt, copper, barium, zinc, cadmium and chromium in addition to antimony. This also includes five different facilities reporting a total of eleven different organic constituents in their emission control dusts. In addition, we identified potential constituents of concern that are widely used raw materials in paint production, based on the available literature. The process for selecting these constituents is detailed in the proposal (pp. 10083 - 10087). Generally, these constituents are likely to occur in a number of different waste streams. We recognize that it is possible that a given constituent could occur in some solid waste streams and not in others, or at substantially different concentration levels. However, we did not have information available to indicate whether there were some constituents that would never occur in particular waste streams. We believe that modeling all constituents of concern for all similarly managed waste streams is a conservative approach to identify those that potentially pose unacceptable risk. In addition, under a concentration-based listing approach, if the constituents do not occur in one solid waste stream, like emission control dust, that waste stream could be managed separately as nonhazardous waste, provided the generator meets the applicable implementation requirements, e.g. certification that the waste does not contain the listing constituents.*

This comment raises the broader question of whether the constituents of concern are likely to occur in the waste. We agree that this is a key question in making the listing determination. In addition to risk assessment results, there are a number of additional factors that we considered in making the listing determination. These are discussed in Section IV.B.5 of the final determination as the basis for our final determination not to list paint production waste solids as hazardous waste.

B. Landfills

SUMMARY OF COMMENTS

The Agency received four comments from industry, three of which stated that they do not use the waste management scenario of unlined or uncovered landfills. DuPont noted that no survey respondents indicated that they were disposing of non-hazardous paint waste solids in unlined landfills. They also noted that the 36 states included in this modeling scenario all require landfills to be lined. DuPont recommended that EPA develop a concentration-based listing level using proportioned results of the risk assessment, or as an alternative, EPA could limit the scope of the listing to disposal of paint waste solids in unlined landfills. DuPont also stated that an unlined nonhazardous waste landfill is not an appropriate management scenario for all off-specification product wastes. They also state that inclusion of paints and coating that contain free liquid at the point of generation within the waste solids quantity distribution appears to more accurately represent quantities of treatment residuals, rather than the as-generated wastes. DuPont recommends that the Agency include as-generated off-specification liquid paints and coatings within the scope of the listing for proposed K180 or develop a conditional exemption for the proposed K179 listing.

VERBATIM COMMENTS

These wastes in general do not use the constituents identified in the Proposed Rule. Magruder does not use the waste management scenarios, including unlined or uncovered landfills, EPA describes as posing an unreasonable risk.

(PMLP 00001. Magruder, page 11)

These wastes in general do not use the constituents identified in the Proposed Rule. Hilton Davis does not use the waste management scenarios, including unlined or uncovered landfills, EPA describes as posing an unreasonable risk.

(PMLP 00004. BF Goodrich Hilton Davis, Inc., page 10)

These wastes in general do not use the constituents identified in the Proposed Rule. CDR does not use the waste management scenarios, including unlined or uncovered landfills, EPA describes as posing an unreasonable risk.

(PMLP 00005. CDR Pigments & Dispersions, page 11)

With respect to the landfill scenario, no survey respondents indicated that they were disposing of non-hazardous paint waste solids in unlined landfills. Out of the 36 states that the EPA included in its modeling of this scenario, the NPCA confirmed that all of these states require liners, either by regulation or on a case-by-case basis (i.e., the states evaluate the need for a liner via the permitting process). Based upon EPA background documents, of the approximately 54 facilities responding that they disposed of paint manufacturing waste solids in a Subtitle D municipal or industrial nonhazardous waste landfill, 70% of the volume was discarded in reported lined landfills. Further, more than one-third of the remaining 30% was reported to be disposed of in Subtitle D municipal landfills, suggesting that the volume of paint manufacturing waste solids currently managed in lined municipal and industrial nonhazardous waste landfills may be as high as 81%. At the very least, it would seem appropriate for the EPA to develop concentration-based listing levels using proportioned results of the risk assessment (e.g., weighting the results of an assessment of unlined and lined landfills similar to the manner in which the results of incompatible extract are combined under the TCLP). Alternatively, the EPA could also decide to limit the scope of the listing to disposal of paint waste solids in unlined landfills (provided disposal in lined landfills is protective, which DuPont expects to be the case). Such an approach would seem to encourage land disposal in the most protective manner and would reduce the overall burden of the Rule.

(PMLP 00041. DuPont, page 10, 11, w/attachments)

In developing the proposed concentration-based listing levels for paint waste solids, the Agency chose to model disposal of waste solids in an unlined nonhazardous waste landfill. 66 FR 10078 (Feb. 13, 2001). Off-specification product was included within the waste solids quantity distribution for the risk assessment. While this management scenario may be appropriate for some off-specification product wastes (i.e., powder coatings), DuPont does not believe that this is an appropriate management scenario for all off-specification product wastes (i.e., as-generated liquid paints and coatings). Moreover, specific to liquid paints and coatings (i.e., paints and coatings that contain free liquid at the point of generation), inclusion within the waste solids quantity distribution appears to more accurately represent quantities of treatment residuals, rather than as-generated wastes. Related to this, DuPont also questions, should the proposed listing move forward, whether "hard cured by drying or otherwise solidified prior to disposal" always constitutes legitimate treatment. 66 FR 10110 (Feb. 13, 2001).

DuPont believes that responses to the Agency's survey of the industry likely reflect that direct disposal of off-specification liquid paints and coatings (i.e., as-generated) in landfills occurs fairly infrequently, if at all. For example, according to Table 4-7 in the Listing Background Document, approximately 45% of all nonhazardous off-specification products were discard in either an incinerator, cement kiln, BIF or by fuel blending. [DuPont notes a discrepancy between Table 4-7 in the Listing Background Document and the amount presented in Table III.D-3 in the preamble regarding the amount of off-specification product disposed of in an incinerator]. If the EPA were to examine this data more closely, DuPont believes that the Agency would find that off-specification liquid paints and coatings (i.e., as-generated) are disposed of predominately in non-land based units.

Therefore, prior to the proposed listing moving forward, DuPont recommends that the Agency either include as-generated off-specification liquid paints and coatings within the scope of the listing for paint manufacturing waste liquids (e.g., K180) or develop a conditional exemption from the proposed K179 listing for as-generated off-specification liquid paints and coatings disposed of in non-land based units, such as via combustion. It would appear that either of these alternatives, based upon how the proposed rule has been crafted, would also encourage effective treatment of wastes over land disposal, consistent with the Agency's own waste management hierarchy.

(PMLP 00041. DuPont, page 13, w/attachments)

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RESPONSE

As discussed in Section IV.B of the final determination, we have determined not to list waste solids from paint production as proposed (K179). Therefore, we are not addressing comments specific to various options, such as certain types of landfills, at this time. We are also not responding to comments related to the effect liners may have on risks from landfills at this time. We agree that liners would decrease releases to some extent, although we believe that the long-term effect of liner systems is uncertain. If we had factored liner systems into our modeling this may have resulted in some reduction in risks (i.e., higher concentration-based listing levels). Thus, given our decision not to list paint waste solids based on our modeling of unlined landfills, any consideration of liners would not materially effect our decision. We also note that responses provided by paint facilities to the RCRA Section 3007 survey do not indicate that all paint waste solids are managed in lined landfills. Based on the survey responses, 22 out of the 58 landfills that are accepting nonhazardous paint solids are equipped with various types of liners, but it is unclear as to whether any of the remaining 36 landfills have liners (i.e., the respondents either answered "unknown" or did not answer this question). We are also not responding to comments as to the appropriate management scenario for off-specification products.

C. Surface impoundments

SUMMARY OF COMMENTS

The Agency received five comments, four from industry and one from an association on the surface impoundment management scenario. Three industry commenters stated that they do no use onsite or offsite surface impoundment treatment as a waste management methods and would not be using it in the future. The Methacrylate Producers Association stated that since EPA did not identify a single instance where management in an unlined surface impoundment occurs and that they are unaware of any use of unlined surface impoundments by the paint industry or paint waste disposal facilities that the paint waste liquids should be removed from the scope of the proposed rule. DuPont recommended that EPA should revise its approach to the risk assessment by modeling releases from no more than two lined surface impoundments.

VERBATIM COMMENTS

Magruder does not use onsite or offsite surface impoundment treatment as a waste management method nor is it realistic to assume that Magruder would use such methods in the future. Wastewater management systems at our facilities utilize tank treatment and discharge to POTW's. It is simply not likely or even plausible that Magruder would use surface impoundments as wastewater treatment in the future.

Even if Magruder were to consider surface impoundments an option, space restrictions, capital costs, maintenance, decommissioning and liability considerations would combine to pose insurmountable limitations on construction of a surface impoundment. While EPA indicates that only 26 states had prohibitions on unlined surface impoundments, it is our understanding that none of the states where Magruder has production facilities would issue required wastewater permits for an unlined impoundment. 66 Fed. Reg. 10108. Therefore, based on current and plausible management methods we believe strongly that EPA should not list paint liquids and in particular should not list waste waters generated in the production of varnish or printing ink varnish.

(PMLP 00001. Magruder, page 6, 7)

Hilton Davis does not use onsite or offsite surface impoundment treatment as a waste management method nor is it realistic to assume that Hilton Davis would use such methods in the future. Wastewater management systems at our facilities utilize tank treatment and discharge to POTW's. It is simply not likely or even plausible that Hilton Davis would use surface impoundments as wastewater treatment in the future.

Even if Hilton Davis were to consider surface impoundments an option, space restrictions, capital costs, maintenance, decommissioning and liability considerations would combine to pose insurmountable limitations on construction of a surface impoundment. While EPA indicates that only 26 states had prohibitions on unlined surface impoundments, it is our understanding that Ohio would not issue required wastewater permits for an unlined impoundment. 66 Fed. Reg. 10108. Therefore, based on current and plausible management methods, we believe strongly that EPA should not list paint liquids and in particular should not list waste waters generated in the production of varnish or printing ink varnish.

(PMLP 00004. BF Goodrich Hilton Davis, Inc., page 6, 7)

CDR does not use onsite or offsite surface impoundment treatment as a waste management method nor is it realistic to assume that CDR would use such methods in the future. Waste Wastewater management systems at our facilities utilize tank treatment and permitted discharge or discharge to POTW's. CDR has decommissioned our only pigment facility which utilized surface impoundment treatment. It is simply not likely or even plausible that CDR would use surface impoundments as wastewater treatment in the future.

Even if CDR were to consider surface impoundments an option, space restrictions, capital costs, maintenance, decommissioning and liability considerations would combine to pose insurmountable limitations on construction of a surface impoundment. While EPA indicates that only 26 states had prohibitions on unlined surface impoundments, it is our understanding that none of the states where CDR has production facilities would issue required wastewater permits for an unlined impoundment. 66 Fed. Reg. 10108. Therefore, based on current and plausible management methods we believe strongly that EPA should not list paint liquids and in particular should not list waste waters generated in the production of varnish or printing ink varnish.

(PMLP 00005. CDR Pigments & Dispersions, page 6, 7)

First, the assumptions made in the current model regarding the groundwater impacts of paint wastes managed in unlined surface impoundments are highly speculative and unsupported even by EPA's own documents in the record. EPA chose to model liquid paint waste managed in unlined surface impoundments as a "plausible management scenario." However, as the record amply demonstrates, EPA did not identify a single instance where this management scenario actually occurs. EPA explains that it identified one wastewater treatment facility that stores liquid paint waste in a *double lined* surface impoundment. Based on this finding alone, EPA concluded that it "cannot, at this time, rule out the possibility that some quantities of liquid paint manufacturing wastes may be managed in an unlined impoundment (66 Fed. Reg. at 10079). At the same time, however, EPA clearly acknowledges in the preamble to the Proposed Rule that there are serious "uncertainties" in the current model in this regard, and states that "our assessment of an unlined surface impoundment may overestimate potential risks from this disposal option" (66 Fed. Reg. at 10108).

MPA is unaware of any use of unlined surface impoundments by the paint industry or by paint waste disposal facilities. All of the states for which EPA conducted modeling have regulations requiring liners in all surface impoundments (See Comments of the National Paint & Coatings Association, Inc.). EPA itself did not identify a single instance where this management practice actually occurs. As such, the inclusion of this management scenario in the model is arbitrary and unrealistic, and as a result, the model greatly overstates the actual risks posed by liquid paint wastes. MPA therefore urges EPA to remove this management scenario from the model, and reconsider the Proposed Rule in light of the results of the corrected model. A more accurate risk assessment will demonstrate that the risk posed by MMA in liquid paint wastes are so low that MMA does not merit listing in the Proposed Rule. Such a revised model will also show that paint waste liquids in general do not pose a significant regulatory risk, MPA therefore endorses EPA's suggested alternative proposal to remove paint waste liquids in general from the scope of the Proposed Rule.

(PMLP 00016. MPA, page 9, 10, 11 w/attachments)

In response to the Agency's survey of the industry, only one double-lined surface impoundment was reported out of the 24 off-site wastewater treatment facilities used. Based upon the random contacts EPA completed in response to the survey and contacts made by the NPCA during the comment period, none of the remaining 23 off-site wastewater treatment facilities which continue to operate use surface impoundments. DuPont also believes it highly unlikely that any paint manufacturing facilities use unlined impoundments to manage paint waste liquids. As such, at the very least, the Agency should revise its approach to the risk assessment by modeling releases from no more than two lined surface impoundments. Moreover, regardless of whether the Agency chooses to model releases from lined or unlined surface impoundments, we support the Agency's notion to limit the scope of the listing to this management scenario (assuming results of the revised assessment indicate a potential risk to human health), given that the other management scenarios for paint waste liquids are adequately protective.

(PMLP 00041. DuPont, page 10, w/attachments)

RESPONSE

As discussed in Section IV.A of the final determination, we have determined not to list liquid wastes from paint production as proposed (K180). After reviewing the information in the comments and reconsidering the available information, we agree with the commenters that the use of surface impoundments for treatment of paint manufacturing waste liquids appears to be even more infrequent than we estimated at the proposal. Our data for the surveyed facilities show that one off-site CWT facility used surface impoundments to treat paint manufacturing wastes, and probably no more than two such facilities are likely to exist nationwide that accept liquid wastes from paint manufacturers. The one facility that we found to use impoundments has only lined impoundments, and we have no indication that off-site unlined impoundments are used for this waste (the 3007 Survey data also did not show any facilities using on-site surface impoundments for paint manufacturing wastes). Therefore, we concur that the management scenario we modeled, an unlined surface impoundment, does not appear plausible. As noted in the proposed rule, we also believe that the level of protection afforded by a liner system could be significant for a surface *impoundment, which will contain liquid wastes only during its operating life (66 FR 10108). If the lined impoundment leaks during its operating life, it can be drained and repaired before continued use.*

VI. HUMAN HEALTH RISK ASSESSMENT

EPA received a number of comments on various areas of the risk assessment for the proposed paint production waste listing determinations. The summarys of comments and verbatim comments received on the various areas of concern are provided below. The Agency is not addressing the comments on the proposed risk assessment for paint production wastes at this time. Instead, the Agency has prepared an addendum to the risk assessment (see docket for document entitled "Addendum to Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination"), which describes two additional analyses that were done following publication of the proposed paint production waste listing determinations. These analyses included 1) a correction to an error we found in the model the Agency used to predict risks from showering with contaminated water, and 2) a reevaluation of the statistical analysis used to assign weights to waste quantity data from individual paint manufacturing facilities following review and consideration of comments received on the RCRA Section 3007 survey (see Section III of this document). After evaluating the results from these analyses as well as other pertinent information, the Agency made the decision not to list paint production wastes as hazardous. The comments received on the risk assessment, which generally seek to convince the Agency that it had overestimated risks from the paint production wastes, would only reinforce the Agency's decision not to list the paint production wastes. Therefore, the Agency is not addressing the comments on the proposed human health risk assessment for paint production wastes at this time.

A. Probabilistic risk assessment

SUMMARY OF COMMENT

The Agency received one comment from DuPont supporting the use of the probabilistic approach to performing the risk assessment and the use of bounding analysis as a screening tool.

VERBATIM COMMENT

In this proposal, EPA primarily uses a probabilistic approach to performing the risk assessment. DuPont is fully supportive of this approach and concurs with the Agency that a probabilistic risk assessment (PRA) is "ideal" for this risk assessment because of the large number of paint and coating facilities in widely varying settings in the US. The use of PRA allows for the accounting of the variability in both waste management practices associated with different plant operations as well as differences in environmental setting and potential receptor exposures. Also, in the context of this rule, the use of bounding analysis as a screening tool is appropriate.

(PMLP 00041. DuPont, page 7, w/attachments)

B. Characteristics of WMUs

1. General unit characteristics

SUMMARY OF COMMENTS

The Agency received two comments, from NPCA and DuPont, on the landfill and surface impoundment characteristics used in the risk assessment. They stated that EPA should use more current information than the outdated 1985 data. NPCA stated that many of the landfills and surface impoundments modeled were very small and not representative of those being used by the paint manufacturers today. Inclusion of the small management units leads to an overestimation of the potential risks. DuPont stated that most states have requirements for disposal of non-hazardous wastes, including liners, run-off controls and leachate collection systems.

VERBATIM COMMENTS

NPCA is alarmed that such a significant rule's risk assessment model is predicated on landfill and surface impoundment characteristics based on data from 1985. It is highly likely that many of these facilities (unlined landfills and unlined surface impoundments in particular) from 16 years ago have been closed, retrofitted, or relocated based on the ensuing years of federal and state regulations.

In addition, many of the landfills and surface impoundments used by the EPA in its modeling were very small. Modeling undersized landfills and small surface impoundment units arbitrarily increased any potential risk associated with paint manufacturing waste. Smaller landfill and surface impoundment facilities necessarily have a greater average fraction of paint manufacturing waste which in turn leads to a gross overestimation of the potential risks that may be imposed by such waste management. In fact, EPA admitted that this was one of the uncertainties in their modeling.[27]

EPA used the characteristics of 68 landfills to model the risks associated with paint manufacturing waste solids.[28] Of these 68 landfills, six (nearly 10% of the landfills modeled) were much less than one acre in size (0.5, 0.23, 0.17, 0.17, .08, and 0.005 acres respectively). In fact, the smallest landfill used by the EPA had a surface area of 217 square feet, which is smaller than an average one-car garage! Clearly these six landfills are not representative of commercial and publicly owned landfills that are tens and hundreds of acres in size. The NPCA believes that the EPA should not use any landfills in its model that are less than one acre in size, since these landfills are not typical, and grossly overestimate the risk associated with paint manufacturing wastes.

The EPA used the characteristics of 200 surface impoundments to model the risks associated with paint manufacturing waste liquids. Of these 200 surface impoundments, 37 (nearly 20% of the surface impoundments modeled) were much less than one acre in size (0.57 (7 in total), 0.33 (9), 0.06 (5), 0.02 (10), 0.005 (4) and 0.0025 (2) acres respectively). In fact, the smallest two surface impoundments used by EPA had surface areas of only 108 square feet, which is smaller than the average backyard above-ground swimming pool (12 foot diameter)! Clearly, these 37 surface impoundments are not representative of commercial surface impoundments, which in order to accurately address any potential risks associated with the Proposed Rule, should have been modeled. In fact, the only surface impoundment that was used by the paint manufacturing industry - McKittrick Waste - has three surface impoundments that are each greater than an acre in size (1.2, 1.8, and 2.3 acres respectively). EPA should not have modeled any surface impoundments that are less than one acre in size, as any smaller units are not are not typical and grossly overestimate any potential risk associated with paint manufacturing wastes.

EPA should have used current information with which to model surface impoundments, instead of the outdated 1985 data. One company in particular - Environmental Information, Inc. (http://www.envirobiz.com) provides online access to a database of municipal and non-hazardous industrial waste facilities. For example, this database identifies landfills with and without liners. Environmental Information, Inc. also has data on surface impoundments. As EPA failed to accurately assess the current status of landfills in their modeling for the Proposed Rule, NPCA is currently considering purchasing the Environmental Information database in order to do so. This task could not be accomplished in the 60-day period given for comments, and as EPA denied our request for an extension, NPCA hereby reserves the right to supplement these comments with any relevant information in this regard, as that information becomes available.

27 66FedReg. 10109 (Feb. 13, 2001).

28 "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination," Jan. 17, 2001, Table 4-17, page 4-39.

(PMLP 00033. NPCA, page 19, 20 w/attachments)

DuPont is particularly concerned with the use of data that is more than 15 years old in developing waste management and ultimately the exposure scenarios. DuPont contends that these data no longer reflect present WMUs or current waste management practices. Since 1985, many of the facilities evaluated by USEPA may have closed or updated their waste management systems. A study conducted by ICF Incorporated (1991) also indicates that the majority of states have requirements for the disposal of non-hazardous wastes. For example, 68 percent of all states require liners, 96 percent require run-on/run-off controls, 94 percent require use of a cover, and 80 percent require leachate collection (ICF, 1991). In more industrialized states, requirements for nonhazardous waste disposal are generally more stringent than in less industrialized areas, further ensuring that states that generate and dispose of the majority of industrial waste have greater protections already in place (ICF, 1991).

(PMLP 00041. DuPont, page 10, w/attachments (from 7E))

C. Exposure scenarios and pathways (receptors)

SUMMARY OF COMMENT

The Agency received one comment from DuPont stating that they supported the use of different time frames in modeling aboveground and groundwater pathways.

VERBATIM COMMENT

In modeling the aboveground and groundwater pathways, EPA used different time frames for modeling. DuPont concurs that this is appropriate.

(PMLP 00041. DuPont, page 8, w/attachments)

D. Chemical properities (fate and transport)

1. Biodegradation

SUMMARY OF COMMENTS

The Agency received seven comments, six from associations and one from industry on biodegradation. All the commenters were concerned that EPA did not model biodegradation in groundwater which results in an overestimation of the risk estimates from exposure to groundwater that drives the risk for human receptors. The Methacrylate Producers Association stated that MMA degrades quickly and does not bioaccumulate in the environment. The Styrene Information and Research Center states that styrene is biodegradable and they further state that its degradation products do not warrant concern. NPCA noted that many ethylbenzene, toluene, and xylene (TEX) plumes degrade and NAPPA stated that EPA underestimated the degradation of acrylamide. The following commenters, EPC, NPCA, NAPPA, DuPont, indicated that including groundwater biodegradation in the model, at the most conservative levels, would have eliminated all COCs from further consideration. DuPont included the results of its own modeling, using the same Monte Carlo approach but with biodegradation, showing the concentration of COCs being reduced to zero or near zero. NPCA pointed out that EPA had possibly used the wrong units for biodegradation data, resulting in longer half-lives for the COCs in the environment.

VERBATIM COMMENTS

In addition, MMA degrades quickly and does not bioaccumulate in the environment (See, e.g., Environmental Degradation Rates. Howard. P.H., 1991, and the EU Risk Assessment, dated April 4, 2001). The EU Risk Assessment, for example, concluded that NINIA is "readily biodegradable" based on tests including the Closed-Bottle-Test (OECD GL 301 D) which indicated 88% degradation after 28 days, and the MITI-I-Test (OECD GL 301) that showed 94% degradation in 14 days. With regard to bioaccumulation, the EU Risk Assessment concluded that based on its measured logPow of 0.7 to 1.38, MMA "does not indicate a potential for bioaccumulation." Therefore, any trace amounts of MMA initially in paint wastes would rapidly biodegrade, further reducing the residual levels that might be present in the environment.

(PMLP 00016. MPA, page 5, 6 w/attachments)

Second, EPA should expand its consideration of biodegradation. In Appendix B, EPC has provided detailed technical comments on the fate and transport model used by EPA. Of greatest concern, is the fact that EPA chose not to include a groundwater biodegradation factor in its model. This decision by EPA grossly overestimates the risk estimates for it is the exposure from groundwater that drives the risk for human receptors.

EPA attempts to justify excluding groundwater biodegradation by suggesting that groundwater biodegradation is a site-specific phenomena and therefore cannot be modeled. While groundwater environments are highly variable, biodegradation in all of the other environmental media also vary.

EPA's decision to exclude biodegradation is also puzzling since the reference book that the Agency relied on for the biodegradation values in surface water, sediment and soils (*i.e.,* Howard 1989 and Howard *et al.* 1991) also contains biodegradation values for groundwater.

EPC appreciates that EPA provided a copy of the EPACMTP model for evaluation. While there was limited time to review the model, the evaluation shows that the use of even the most conservative values for groundwater biodegradation produces concentrations of residuals in the well water receptors that are essentially zero. Thus, EPC believes it is wholly inappropriate for EPA to simply dismiss any consideration of groundwater biodegradation from its fate and transport model.

EPC is convinced that if EPA were to include in its model, either reasonable estimates for hydrolysis, or if the Agency were to incorporate groundwater biodegradation, the model would readily show that there is simply no basis for concern with any of the chemical constituents targeted by the Agency.

As noted by one of EPA's peer reviewers,

> *The authors have taken a purely predictive approach to the fate and transport modeling, using no empirical measurements of contaminant concentrations in the environment. Their work would be strengthened by confirming the Monte-Carlo results with direct evidence.*[1]

1 "Use of acrylamide and acrylonitrile containing constituents in paint formulations," memorandum from Dave Carver to Paul Denault, September 6, 2000, p. 1.

(PMLP 00017. EPC, page 7, 8, w/attachments)

A variety of data confirms that styrene is biodegradable. Styrene readily biodegrades under aerobic conditions in soils and waters.[2] Surface soil provides adequate conditions for degradation of styrene with half-lives on the order of days.[3] For example, between 97 and 87% of styrene added to landfill and sandy loam soils was converted to carbon dioxide in 16 weeks.[4] On the basis of these studies, it is evident that styrene is rapidly degraded in all environmental media with the exception of anaerobic aquifers.[5] While the possibility exists for extensive but slow destruction of styrene in anaerobic environments based on laboratory cultures, limited data on environmental samples precludes broader generalizations.[6]

Microorganisms that destroy styrene may act on it as a consequence of their using the organic molecule as a source of carbon to sustain their multiplication. When aerobic microorganisms use an organic chemical as a carbon source of growth, usually the compound is converted almost entirely to carbon dioxide. This appears to be the case with styrene and, therefore, its degradation products do not warrant concern.[7]

Another factor that may result in persistence is associated with biodegradation thresholds. At low concentrations, microorganisms may not get sufficient energy to multiply or possibly even survive. There is no evidence of a threshold for styrene in soil.[8] If a threshold exists for the biodegradation of styrene in water, it is well below the treatment level in the proposed rule.[9]

2 Alexander, M. Environmental Fate and Effects of Styrene, Cert. Rev, in Env. Science andTechnology, 1997, 27, p. 383-4 10 (Reprinted in the SIRC Review), Vol. 6, No. 1 (September1998)(hereinafter “Alexander 1997”); Alexander, M. Environmental Fate of Styrene, SIRC Review, (April 1990) (hereinafter “Alexander 1990”).

3 Alexander 1997 and Alexander 1990.

4 Alexander 1997.

5 Id.

6 Id.

7 Id.

8 Fu, M.H. and Aiexander, M., Biodegradation of styrene in samples of natural environments, Environ. Sci. Technol., vol. 26, 1540-1544 (1992).

9 Alexander 1997.

(PMLP 00029. SIRC, page 2, 3)

A concentration-based listing requires that a risk assessment be conducted to determine what level of a constituent in the paint manufacturing waste poses a not unacceptable risk to human and ecological receptors following EPA’s assumption of “plausible mismanagement” of the waste. NPCA believes that the plausible mismanagement assumption here has no basis. A concentration-based listing also requires generators of waste to determine (either by measurement or knowledge) that a waste is or is not a hazardous material based on the “listing levels” determined by EPA in their risk assessment. EPA used a modified version of their 3MRA model (Multimedia, Multipathway, Multireceptor Risk Assessment model) which involves evaluation of exposure to humans via air, water (drinking and bathing), food and other pathways and to ecological receptors via air, water and food chain transfer.

There are 33 chemical-specific environmental fate parameters listed by EPA risk assessment for each constituent of concern.[22] An additional 14 chemical-specific fate parameters are listed in Appendix O (Groundwater modeling). There are undoubtedly dozens, if not hundreds, of other parameters in the overall modeling effort. Some of these parameters can have a large influence on the outcome of the risk assessment and therefore must be accurate to within reasonable limits of scientific uncertainty and natural variability. EPA relied on publications by Howard (1989) and Howard et al. (1991) to provide values for biodegradation rate constants in various media. For the final listing, only two chemicals relied on data from Howard (1989)--acrylamide and vinyl acetate--whereas all other organic chemicals relied on Howard et al. 1991. The values quoted in these publications are appropriate for use in this modeling effort. Arbitrarily, EPA chose not to use the groundwater biodegradation values, and may have inappropriately used the hydrolysis data. Metals were considered to not biodegrade, even though microbially mediated transformation processes are very important for determining the fate of metals in the environment.

The first issue with the biodegradation data presented in Appendix D is that the units (years) do not match the published units (days). For example, for Acrylonitnle, the Appendix D rate constant for surface water biodegradation is cited as 3.01 x 10^{-2}/yr, which corresponds to a half-life of 23 years. In Howard et al. (1991), the high-end estimate of half-life in surface water is given as 23 days (and the low-end estimate is 1.25 days). Clearly, if in fact EPA modeled the biodegradation as if the half-life were 23 years, then it would effectively eliminate biodegradation as a dissipation mechanism in the risk assessment. This discrepancy could be a "typo" in the Appendix D data table. However, this typo was repeated throughout the appendix.

NPCA is concerned that EPA arbitrarily did not model groundwater biodegradation, especially considering the fact that the EPA did model biodegradation in soils, surface water and sediment. It is very clear from the modeling efforts we have been able to complete in the short time frame we have had access to the model (less than three weeks) that most, if not all, of the COCs are biodegraded in groundwater. This causes the risk-based levels to exceed 1E6 mg/l (100%), thereby eliminating the need for a hazardous waste listing. Had EPA appropriately accounted for losses due to groundwater biodegradation in their risk modeling, a no-list determination would have been made.

Another issue with biodegradation is the inconsistent and indeed total lack of application of biodegradation as a dissipation pathway in the risk assessment. As stated, biodegradation is modeled in soil (in the unsaturated zone), but not in groundwater. It is the exposure from groundwater that drives the risk assessment for human receptors. Therefore, EPA's neglect of biodegradation in groundwater has the potential to greatly influence the outcome of the risk assessment. The EPA explains this by stating, ". . .many other types of transformation processes, such as biodegradation, are much more site-specific and can be highly variable and therefore much more difficult to simulate using a generic model such as EPACMTP. EPA is therefore using a conservative assumption that these processes do not occur; that is, biodegradation is not accounted for."[23] Although groundwater environments are indeed highly variable, it can be stated with equal confidence that all of the other environmental media in this risk assessment are "highly variable." Does EPA contend that surface waters, sediments and soils are significantly less variable than groundwater environments? EPA has decided, arbitrarily, that biodegradation can be modeled in surface waters, sediments and soils, but not in groundwater. EPA relied on Howard et al. (1991) for biodegradation values in surface water, sediment and soils. EPA explicitly ignored the data also published in Howard et al. (1991) on biodegradation in groundwater. The contention that variability blocks the EPA's ability to model biodegradation in groundwater is false.

EPA contends that, because of great variability in groundwater environments, biodegradation cannot be modeled in this environment. Variability can be incorporated into the risk assessment using a probabilistic approach. Indeed, EPA relied on a probabilistic risk assessment to set the listing levels. Potential variability in biodegradation rate values can be incorporated into the risk assessment by selecting an appropriate distribution of values. Biodegradation data in Howard et al. (1991) is presented as a "High" estimate and a "Low" estimate for each parameter. This information can be used to construct a distribution for each biodegradation parameter. EPA chose to use a single value for the surface water, sediment and soil biodegradation rates, the "High" values in Howard et al. (1991) and therefore could also model biodegradation in groundwater as well.

22 "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination," Jan. 17, 2001, Appendix D.

23 "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination," Jan. 17, 2001, Section 5, page 43.

(PMLP 00033. NPCA, page 14, 15, 16 w/attachments)

Our member companies and the consultant were also able to effectively demonstrate the effects of incorporating biodegradation of organic COC in groundwater. As indicated in our April 16, 2001 comments, incorporating biodegradation in groundwater is an integral part of this risk assessment effort. Specifically, in this case, accounting for biodegradation in groundwater indicates that the risk-based concentrations of the organic constituents of concern would be nearly 100%, eliminating the need for a listing determination for these COC.

(PMLP L0001. NPCA, page 2)

In performing the environmental fate modeling for these materials, EPA ignored the biodegradation potential of these materials, even though this is well documented. In addition to laboratory studies that show the potential for biodegradation, field studies have presented statistical data indicating that many TEX plumes degrade and are less than 250 feet long (Rice et al., 1995; Mace et al., 1997). Based on the IPCS conclusion, NPCA believes that if the environmental fate of these materials (as well as other similar solvents) were appropriately modeled (i.e., including degradation in the groundwater), these materials would never reach receptors. The closest receptor was defined as 75 m (225 feet) with a median of 300 m (900 feet). As such, exposures would not be expected under the scenarios projected for these wastes and the materials should not be included in the listing.

(PMLP 00033. NPCA, page 19 w/attachments)

NAPPA has had limited opportunity to review EPA's fate and transport model, however, the review to date shows that EPA has grossly underestimated the degradation of acrylamide in the environment.

First, NAPPA believes that there is simply no basis to outrightly exclude from the fate and transport model any consideration of groundwater biodegradation. As the Agency is well aware, exposure through groundwater is the primary source of risk identified by EPA. As such, EPA's decision to exclude a groundwater biodegradation variable from the model, will significantly overestimate the risk estimates. To exclude any consideration of groundwater biodegradation simply because biodegradation will vary based on site-specific conditions, is simply inexcusable.

Second, where EPA has considered environmental breakdown, such as hydrolysis, the values EPA relies on significantly underestimate the expected half-lives.

NAPPA is convinced that if EPA were to use even worst-case assumptions for groundwater biodegradation, as well as more realistic estimates of hydrolysis, the Agency would readily conclude that there is simply no basis of concern over essentially any residual level of acrylamide in the environment.

(PMLP 00034. NAPPA, page 6, 7 w/attachments)

DuPont, however, finds significant flaws in the implementation of the effort such that results that are derived from the exercise leads to unwarranted regulation. Of primary concern is the Agency's dismissal of biodegradation in groundwater. Most of the materials identified for the listing do biodegrade in groundwater. In ignoring this mitigation process, EPA developed concentration-based values for materials that are not generally considered toxic and would otherwise have risk-based limits above the 106 ppm limit under appropriate waste management and exposure scenarios.

(PMLP 00041. DuPont, page 7, w/attachments)

The groundwater pathway drives the results of this assessment for every chemical identified for the listing. Therefore, it becomes vitally important that modeling of this pathway be appropriate.

Numerous authors have documented the phenomenon known as biodegradation in both field and laboratory studies for the following chemical constituents noted in the proposed rule. For surface impoundments, the chemicals include acrylamide, acrylonitrile, methyl methacrylate, methylene chloride, ethylbenzene, xylene (mixed isomers), formaldehyde, methyl isobutyl ketone, n-bLityl alcohol, styrene, and toluene. From the landfill source, the constituents considered include acrylamide, acrylonitrile, methyl methacrylate, and methyl isobutyl ketone. For these constituents, biodegradation may occur via several pathways including aerobic and anaerobic degradation. Both processes were modeled based on the specific constituent and applicable biodegradation pathway. Biodegradation for such constituents is a reality and there is a high level of certainty that virtually all of the constituents noted will undergo biological degradation in the ambient environment. This has been well documented in the literature (see Howard 1989 and Howard 1991, Suarez and Rifai 1999, and Aronson and Howard 1997, Syracuse Research Corp. Database, 2001).

DuPont performed additional EPACMTP modeling runs utilizing peer reviewed literature values for biodegradation rates or rates from EPA's own database (USEPA Master Chemical Integrator EMCI Database-OPPT,1994). Where possible, field-determined biodegradation rates were used. This modeling was accomplished using Monte-Carlo simulations for each constituent of interest in both unsaturated zone (aerobic) and saturated zone (anaerobic) scenarios and simulating a maximum exposure time of 10,000 years for each constituent. The model calculated values represent the constituent concentrations for a hypothetical receptor at a specified distance from edge of the waste unit.

The results from these model runs (provided in Attachment A) were compelling to say the least. The model predicted each chemical constituent would be attenuated to such a degree that the predicted concentration at the hypothetical receptor well would be essentially zero. It is clear from the literature and these modeling results that biodegradation plays a significant factor in the attenuation of these constituents in both the unsaturated and saturated zone beneath and downgradient from a waste source area. Thus, the biodegradation of many of these constituents is well known to occur. In addition to biodegradation, several of the constituents are also known to degrade abiotically. The failure to include biodegradation in the original USEPA modeling demonstrates that the original results are not representative and are overly conservative when calculating risk based on the groundwater pathway.

DuPont's further modeling evaluation leads to the conclusion that these materials would not be identified as hazardous and that the listing is unnecessary. DuPont strongly urges the Agency to re-consider its decision to ignore biodegradation in the groundwater pathway. Field as well as laboratory studies indicate that these materials do naturally attentuate, in some cases (e.g., 250 feet for toluene, ethylbenzene and xylene plumes, Rice 1995, Mace 1997) well within the range of projected receptors.

(PMLP 00041. DuPont, page 9, 10, w/attachments)

ATTACHMENT A

BIODEGRADATION RATES AND RESULTS OF MODELLING RUNS

GEOTRANS, INC.
46050 MANEKIN PLAZA, SUITE 100
STERLING, VA 20166

MEMORANDUM

TO: Mr. David Spanfelner, Dupont

FROM: Jeffrey Benegar and James Mercer

DATE: April 11, 2001

SUBJECT: Results of EPACMTP Modeling Including Biodegradation for EPA's Proposed Paint Rule Listing

USEPA is proposing to amend the regulations for hazardous waste management under the Resource Conservation and Recovery Act (RCRA) by listing as hazardous certain wastes generated from the manufacture of paint. The listing of these certain chemical constituents as hazardous is based on a risk to a human receptor through a groundwater pathway from releases from both a landfill and surface impoundment source. The groundwater pathway was modeled to determine the residential drinking water well concentrations resulting from a release of waste constituents from a source area. The original modeling did not consider biodegradation as an attenuation mechanism in groundwater. This memo summarizes the results of modeling performed to assess the effects of biodegradation of these constituents in the groundwater pathway.

Chemical Constituents of Interest

The following chemical constituents were modeled, based on their waste source. For surface impoundments, the chemicals include acrylamide, acrylonitrile, methyl methacrylate, methylene chloride, ethylbenzene, xylene (mixed isomers), formaldehyde, methyl isobutyl ketone, n-butyl alcohol, styrene, and toluene. From the landfill source, the constituents considered include acrylamide, acrylonitrile, methyl methacrylate, and methyl isobutyl ketone. USEPA based the modeling of these organic constituents on the modeling of surrogate chemical groups instead of individual chemical constituents. This same approach is followed here for the modeling of these constituents with biodegradation. Table 1 lists the organic constituent surrogate groups. Chemicals listed in bold are the constituents that were modeled for the groundwater pathway. For example, methylene chloride is included in the acrylonitrile surrogate group. It was modeled using the data input file for acrylonitrile, with the exception that the biodegradation rates for methylene chloride were used rather than the rates for acrylonitrile. The other constituents were modeled similarly.

Groundwater Modeling with Biodegradation

The transport of leachate from the source areas through the unsaturated and saturated zones was modeled using EPACMTP (U.S. EPA, 1997). EPACMTP simulates the flow and transport of constituents in the unsaturated and saturated zone beneath a waste disposal area to predict the concentration at a specified receptor well location.

Monte Carlo simulations were performed using EPACMTP for each of the constituents of concern with the appropriate biodegradation rates included. Both unsaturated zone (aerobic) and saturated zone (anaerobic) biodegradation rates were included. Where minimum, maximum and average rates were available, these were used in EPACMTP and a normal distribution of rates was used. The rates were obtained from a number of references. The rates used in the modeling are shown in Table 2.

A maximum exposure time period of 10,000 years was simulated for each constituent. There was a total of 10,000 realizations of the Monte Carlo simulations for each chemical, resulting in a distribution of model-calculated concentrations. These model-calculated concentrations represent the concentrations at a hypothetical residential drinking water well located at a specified distance from the downgradient edge of the waste source area.

Table 1. Organic Constituent Surrogate Groups.

Constituent
Ethylene glycol
Formaldehyde
n-Butyl alcohol
Methyl isobutyl ketone (mibk)
Acrylamide
Acrylonitrile
Methyl methacrylate
Dichloromethane (Methylene Chloride)
Tetrachloroethylene
Toluene
Styrene
Ethylbenzene
Xylene (mixed isomers)

Note: The constituents in bold are the chemicals that were modeled for the groundwater pathway

For comparison with EPACMTP model results where no biodegradation was considered, the 90th percentile dilution-attenuation factor (DAF) was calculated for each constituent modeled with the appropriate biodegradation rates. The dilution-attenuation factor (DAF) was calculated as follows:

$$DAF=C_0/C_{avg}$$

where C_0 is the unit (initial) leachate concentration, and Cavg is the average model-calculated concentration at the downgradient receptor well.

The model results for both the surface impoundment and landfill source are shown in Table 3. The model predicted that each chemical constituent would be attenuated to such a degree that the predicted concentration at the receptor well would be zero or practically zero. It is clear from these results that biodegradation plays a significant factor in the attenuation of organic constituents of concern in both the unsaturated and saturated zone beneath and downgradient of a waste source area. The biodegradation of many of these constituents is well known to occur. Where possible, field-determined degradation rates were used in Table 2. In addition to biodegradation, several of the constituents are known to degrade abiotically. The failure to include biodegradation in the original USEPA modeling demonstrates that the original results are not representative and are overly-conservative when calculating risk based on the groundwater pathway.

Table 2. Summary of Biodegradation Rates Used in EPACMTP Modeling.

Constituent	**Biodegradation rates (per year)**			**Reference**
	min.	**avg.**	**max**	
First Order Anaerobic rate				
Acrylamide				
Acrylonitrile	5.5	53.72	101.93	Howard et al. 1991
Chloroform	0.146		10.95	Aronson,D and PH Howard 1997
Methylene Chloride	.02336		2.336	Aronson,D and PH Howard 1997
Ethylbenzene	0	79.57	2207.52	Suarez, MP & HS Rifai, 1999
Formaldehyde	0		252.945	SRC Chemfate data base; Chou et al. 1979; Kitchens, JF et al. 1976
Methyl isobutyl ketone	18.05	72.03	126	Howard et al. 1991
Methyl methacrylate	4.52	11.29	18.05	Howard et al. 1991
n-Butyl alcohol			101.178	Calcd from USEPA, 1994, OPPT
m-xylene	0	11.315	116.8	Suarez, MP & HS Rifai, 1999
o-xylene	0	6.935	78.11	Suarez, MP & HS Rifai, 1999
p-xylene	0	4.745	29.565	Suarez, MP & HS Rifai, 1999
Xylene (average)	0	7.665	74.83	
Styrene	0.215	1.914	5.84	Fu, MH et al. 1992
Toluene	0	86.51	1576.8	Suarez, MP & HS Rifai, 1999
First Order Aerobic Rate				
Acrylamide	42.158		252.945	Calcd from USEPA, 1994, OPPT

Constituent	Biodegradation rates (per year)			Reference
	min.	avg.	max	
Acrylonitrile	25.29	60.63	84.315	Calcd from USEPA, 1994, OPPT
Chloroform	0	46.6	210.788	SRC Chemfate database; Flathman, PE et al. 1982; Bouwer, EJ et al. 1981
				Zoetman, BCJ et al. 1980; Zoeteman BCJ et al. 1980
Methylene Chloride	7.125			SRC Chemfate database; Zoeteman BCJ et al. 1980
Ethylbenzene	0	3.65	28.47	Suarez, MP & HS Rifai, 1999
Formaldehyde			404.712	SRC Chemfate database; Kitchens, JF et al. 1976
Methyl isobutyl ketone	36.1	146.4	256.7	Howard et al. 1991
Methyl methacrylate	25.29		607.07	Calcd from USEPA, 1994, OPPT
n-Butyl alcohol	63.236		588.24	Calcd from USEPA, 1994, OPPT
m-xylene	2.92	59.495	156.95	Suarez, MP & HS Rifai, 1999
o-xylene	2.92	31.39	138.7	Suarez, MP & HS Rifai, 1999
p-xylene	2.92	75.555	156.95	Suarez, MP & HS Rifai, 1999
Xylene (average)	2.92	55.48	150.87	
Styrene	42.16		81.595	Calcd from USEPA, 1994, OPPT
Toluene	36.5	85.045	146	Suarez, MP & HS Rifai, 1999

Table 3. Comparison of DAFs With and Without Biodegradation.

Constituent	DAF[1]	
	No biodegradation	With biodegradation
EPACMTP Results for Surface_Impoundment		
Acrylamide	3.61	N/A*
Acrylonitrile	3.24	N/A*
Methyl methacrylate	3.24	N/A*
Methylene chloride	3.24	1.8×10^6
Formaldehyde	3.19	N/A*
n-Butyt alcohol	3.19	N/A*
Methyl isobutyl ketone	3.19	N/A*
Toluene	3.54	N/A*
Styrene	3.54	N/A*
Ethylbenzene	6.11	N/A*
Xylene (mixed isomers)	6.11	N/A*
EPACMTP Results for Landfill		
Acrylamide	2.82	N/A*
Acrylonitrile	3.74	N/A*
Methyl methacrylate	3.74	N/A*
Methyl isobutyl ketone	4.35	N/A*

[1] 90th percentile dilution-attenuation factor

* Predicted concentration at receptor well is zero

References

Howard, P. H., R. S. Boethling, W. F. Jarvis, W. M. Meylan, E. M. Michalenko, 1991. Handbook of Environmental Degradation Rates. Lewis Publishers.

U.S. EPA, 1997. EPA's Composite Model for Leachate Migration with Transformation Products (EPACMTP) User's Guide. Office of Solid Waste, Washington, D.C.

(PMLP 00041. DuPont, Attachment A)

2. Hydrolysis

SUMMARY OF COMMENTS

The Agency received two comments, one from NPCA and one from DuPont on hydrolysis. NPCA states that there is uncertainty in how the hydrolysis data was use in the modeling and that the rate used for acrylamide does not agree with published data. NPCA also pointed out that hydrolysis rates are pH dependent, a fact not taken into consideration by the Agency. Because the groundwater pathway is so important, DuPont states that each chemical must be modeled with specific fate parameters, not using representative values for surrogate chemical groups.

VERBATIM COMMENTS

The rate of hydrolysis of acrylamide in landfills and surface impoundments was cited in Appendix D as 1.43 x 10^{-5} /yr and 2.78 x 10^{-5} /yr, respectively, citing a 1997 EPA guidance document. These rate constants correspond to hydrolysis half-lives of 48,472 days and 24,933 days, respectively (assuming that the 1/yr units were a typo in the table). Howard (1989) states, "Acrylamide was found to degrade over a period of 1-2 months at room temperature when stored in the dark in distilled water." (p. 16). Based on this citation, even a conservative estimate of the hydrolysis half-life of acrylamide would not exceed 6 months and certainly is far less than the value of 48,000 days cited by EPA. There is uncertainty in how EPA used the hydrolysis data in the fate modeling. Typically, hydrolysis rates are dependent upon pH, and therefore, hydrolysis rate constants can either be expressed for each specific pH, or the rate constant can be expressed as a second order rate constant that requires knowledge of the hydrogen or hydroxyl ion concentration to arrive at a "hydrolysis rate." The equation for surface water dissipation (Table M-3.9) shows that the hydrolysis rate is taken directly from Appendix D and there is apparently NO adjustment for the hydrogen or hydroxyl ion concentration. Therefore, it would appear that EPA modeled the hydrolysis as if it were occurring at a single fixed pH of 7. This is inaccurate in that pH varies widely in the environment, and can be considerably different from neutrality especially in sediments and soils.

The approach used by EPA is further biased by data presented in Appendix O on groundwater modeling. In Table 4 of Appendix O, EPA lists second order hydrolysis rate constants (AHYDR(I) and BHYDR(I) with units of 1/yr, and they list the same units for the derived rate constants UCLAM(I) "chemical decay rate", RLAM(I) dissolved hydrolysis rate, and RLAM2(I) sorbed hydrolysis rate, all 1/yr. In Appendix D they list hydrolysis rate constants in landfills and surface impoundments with units of 1/yr. Second order hydrolysis rate constants have units of l/mol[H]/time or 1/mol[OH]/time. Hydrolysis "rates" are dependent upon the pH in the system. If you assume the values cited are indeed rates used in the risk assessment, then the rates cited in Appendix D and Appendix O are extremely slow and effectively zero, contrary to published data (Howard, 1989; Howard et al. 1991).

(PMLP 00033. NPCA, page 16 w/attachments)

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USEPA states in Appendix O of the Technical Guidance Document that individual chemical constituents WERE NOT modeled using chemical-specific data. Rather, surrogate chemical groups were constructed and "representative" values for K_{oc} and lambda (the EPACMTP-derived hydrolysis rate) were assigned to each group. This approach ignores the significant and important differences in physico-chemical properties and environmental fate of each of the chemicals of concern. The USEPA claims that this was necessary to "reduce the number of model runs". This explanation is inadequate given the primary importance that the groundwater pathway plays in the setting of the listing levels. Each chemical must be modeled with specific fate parameters precisely because the groundwater pathway is so important. The effort needed to include these specific parameters is inconsequential in comparison to the total number of input variables in the risk assessment. Also, it would appear that even USEPA explicitly considers this surrogate approach to be inadequate for certain chemicals such as the phthalates, ethylbenzene, and xylene (note footnote "L" in Table III.E-2 and the comments in Appendix O). DuPont was unable to complete a full assessment of the impacts of using chemical-specific data on the results of the risk assessment by the close of the comment period. As such, DuPont hereby reserves the right to supplement these comments with any relevant information in this regard, as that information may become available.

(PMLP 00041. DuPont, page 12, 13, w/attachments)

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E. Ground water model

SUMMARY OF COMMENTS

The Agency received two comments from associations, the NPCA and the Methacrylate Producers Association, on the ground water model. The Methacrylate Producers Association stated that the results of the model have not been corroborated with empirical data on actual field conditions and that this and other concerns undermine the validity of the risk assessment. NPCA incorporates by reference comments on the EPACMTP model developed by various organizations and specifically cites a comment of the RCRA Modeling Review Consortium which states that the model utilizes an incorrect assumption in generating infiltration rates for surface impoundments.

VERBATIM COMMENTS

Fourth, EPA failed to corroborate the results of the model with empirical data on actual field conditions. EPA's own peer reviewers noted this problem and recommended changes. One reviewer stated that the model takes "a purely predictive approach ... using no empirical measurements of contaminant concentrations," and recommended "confirming the ... results with direct evidence" from field measured concentrations (Review by C. Harvey of MIT, p.1, Appendix C, Peer Review Document for the EPA's Risk Assessment, docket no. PMLP-S0389). Particularly in light of the numerous substantive defects described above, EPA's failure to verify its results with "real world" data further undermines the validity and credibility of the model. If EPA had collected such empirical data on paint wastes, the data would reveal that the model does not reflect actual conditions and does not support the EPA's position on paint waste risks as expressed in the Proposed Rule.

In sum, the various problems with EPA's model are serious enough to undermine the validity the risk assessment and preclude the public from being able to fully comment on the Proposed Rule. Left uncorrected, these problems will result in EPA's promulgation of a regulation based on an inaccurate and unvalidated model. The model must be corrected to ensure that it generates reliable and accurate data on the real risks posed by paint waste constituents.

(PMLP 00016. MPA, page 12 w/attachments)

EPA states in Appendix O of the Technical Guidance Document that individual chemical constituents were not modeled using chemical-specific data. Rather, surrogate chemical groups were constructed and "representative" values for Koc and lambda (the EPACMTP-derived hydrolysis rate) were assigned to each group. This approach ignores the significant and important differences in physicochemical properties and environmental fate of each of the chemicals of concern. The EPA claims that this was necessary to "reduce the number of model runs". This explanation is inadequate given the primary importance that the groundwater pathway plays in the setting of the listing levels. Each chemical must be modeled with specific fate parameters precisely because the groundwater pathway is so important. The effort needed to include these specific parameters is inconsequential in comparison to the total number of input variables in the risk assessment. Also, it would appear that even EPA explicitly considers this surrogate approach to be inadequate for certain chemicals such as the Phthalates, Ethylbenzene, and Xylene (note footnote "L" in Table III.E-2 and the comments in Appendix O).

(PMLP 00033. NPCA, page 17, w/attachments)

Attached herewith and incorporated by reference is a copy of comments developed by the RCRA Modeling Review Consortium, which were recently submitted as part of the development of the "USEPA Guide For Industrial Non-Hazardous Waste Management." The Consortium commented on the EPACMTP model - the same model used to model risks associated with paint manufacturing wastes. They determined that the model utilizes an incorrect assumption in generating infiltration rates for surface impoundments and other problems pertaining to the evaluation of well locations and percent organic matter. The NPCA endorses these comments as they apply to the proposed paint production waste listing.

The American Coal Association, American Forest and Paper Association, Council of Industrial Boilers Owners, Utilities Solid Waste Activities Group, Lead Industries Association and the National Mining Association also developed comments on the EPACMTP model (attached herewith and incorporated by reference). Specifically these comments address key concerns with the EPACMTP that lead to an overestimation of metal concentrations in groundwater. The NPCA endorses these comments and provides specific details from these comments as they apply to the proposed paint production waste listing.

(PMLP 00033. NPCA, page 17 w/attachments)

NPCA was unable to run the EPACMTP model as our operating system was incompatible with the model's requirements. NPCA member companies, as well as a consultant, therefore undertook the task. Our member companies and the consultant were able to validate EPA's groundwater modeling results based upon EPA input parameters, however, these parameters were fundamentally flawed. As outlined in our April 16, 2001 comments, there were numerous errors in EPA's input parameters, such as the degradation rates of Constituents of Concern (COC), overestimation of waste volumes, and inflation of weighting factors. Unfortunately, neither our member companies nor the consultant were able to accurately make the corrections to the input parameters and rerun the groundwater model with adjustments. This adversely affected our ability to effectively comment on the Proposed Rule in this regard. As the risk assessment results form the basis for the Proposed Rule as stated in our initial comments, NPCA believes that rerunning the groundwater model with corrected input parameters must be done. Without these corrections and subsequent reevaluation of the groundwater pathway, a no-list determination is warranted, as a credible, defensible listing determination cannot be made.

(PMLP - L0001. NPCA, pp. 1-2)

F. Human health toxicity of constituents of concern

1. General

VERBATIM COMMENTS

One of the fundamental premises of toxicology is that all materials are potentially considered toxic and there is a dose-response relationship. However, actual toxicity is determined by the dose that is received which is defined by the level of exposure. In making the decision to include certain solvents that only exhibit systemic effects (that is they are not carcinogenic, mutagenic or teratogenic), EPA improperly incorporated these materials into the hazardous waste system based on toxicity where this is unwarranted.

For example, Ethylbenzene, Toluene and Xylenes (TEX) exhibit only systemic effects that result in relative high toxicity benchmarks (e.g., RfDs range from 0.1 to 2 mg/kg-day). These materials do not bio-accumulate and are not persistent in the environment but indeed degrade fairly easily. In fact, the International Programme on Chemical Safety (IPCS, 1996) concluded that Ethyl Benzene (which has the lowest RfD of the three) "has low toxicity" and should not be expected to be of environmental concern (including to ecological receptors), except in the instances of spills or point-source emissions.

(PMLP 00033. NPCA, page 19 w/attachments)

Moreover, EPA has acknowledged on prior occasions that it is legally required to consider other scientific information, in addition to what is contained in the IRIS database.

In a directive on the use of IRIS values in Superfund risk assessments, EPA's Office of Solid Waste and Emergency Response stated that:

> The Agency must respond substantively to any comments raised during the public comment period on the proposed plan that question the use of an IRIS value; see 55 R 8711 (March 8, 1990). In responding to such comments, Agency staff should keep in mind that the entry of a value in IRIS is not a rulemaking. Thus, the entry of the value on IRIS does not make the number legally binding (i.e., the value is not entitled to conclusive weight) for the purposes of Superfund risk assessments. When a toxicological value is questioned in a comment on the proposed plan, a written explanation for the value ultimately selected (whether it is the IRIS value or another number) must be included in the administrative record.[9]

Similarly, in its guidance on the use of IRIS values in rulemakings under the Clean Air Act, EPA's Office of Air Quality and Planning Standards stated that:

> It is also important to remember that IRIS is not a comprehensive toxicological database. There may be more recent, credible and relevant information available than is contained in IRIS. Moreover, the act of including a value in IRIS is not subject to notice and comment rulemaking, and may not necessarily have been subjected to external peer review. Accordingly, IRIS values are not entitled to conclusive weight and shall not be made legally

binding in the context of any other rulemaking action. In addition, EPA or any State agency that uses IRIS should not rely exclusively on IRIS values but should consider all credible and relevant information that is submitted in any particular rulemaking.

If an outside party questions IRIS values during the course of an EPA proceeding. . ., EPA will consider all credible and relevant information before it in that proceeding.[10]

Thus, in order to meet minimum legal requirements, and to avoid making inappropriate risk management decisions which undermine the fundamental purposes of the paint and coatings listing determination, EPA cannot simply accept the IRIS values, but must reevaluate those values when presented with more recent scientific data. In the case of antimony trioxide, the assessment of potential hazards from exposure to antimony trioxide should be based on the recently published, peer-reviewed 90-day oral study in rats.

5 See previous footnote for citation.

6 Significantly, recent studies and analyses have shown that the Schroeder *et al.* (1970) study is uninterpretable and inappropriate for characterization of the toxicity of antimony potassium tartrate itself. *See* Lynch, B.S., C.C. Capen, E.R. Nestmann, G. Veenstra and J.A. Deyo. 1999. Review of Subchromc/Chronic Toxicity of Antimony Potassium Tartrate. Reg. Toxicol. & Pharmacol. *30:* 9-17; *see also* Attachment A.

7 Hext. P.M., P.J. Pinto, and B.A. Rimmel. 1999. Subchronic Feeding Study Of Antimony Trioxide In Rats. J. Appl. Toxicol. 19(3): 205-209.

8 See Toxicological Risks of Selected Flame-Retardant Chemicals. Antimony Trioxide, pp. 229-261. National Academy Press, Washington. D.C., United States of America. 2000.

9 US EPA, OSWER Directive No. 9285.7-16. (December 21. 1993).

10 US EPA, Office of Air Quality Planning and Standards, *Guidance on the Use of Integrated Risk Information System (IRIS),* (August 26, 1994).

(PMLP 00021. AOIA, page 5, 6 w/attachments)

2. MIBK

SUMMARY OF COMMENT

The Agency received one comment from the American Chemistry Council Ketones Panel on the human health toxicity of MIBK. ACC states that the benchmarks for MIBK are taken from the HEAST tables, which they believe are outdated, resulting in listing concentrations for MIBK that are far lower than necessary to protect human health and the environment.

VERBATIM COMMENT

EPA identifies the benchmarks it intends to use to derive concentration-based listing levels for MIBK in a background document entitled "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination." (Background Document). The benchmarks for MIBK are found in Table 7-1 and are taken from the HEAST tables. As discussed below, the Panel believes that these benchmarks for MIBK are outdated and have resulted in listing concentrations for MIBK that are far lower than is necessary to protect human health or the environment.

The Panel appreciates the Agency's need to rely on readily available scientific databases such as IRIS and HEAST when evaluating specific chemicals. However, in the end, the rulemaking will only be as good as the underlying assumptions and chemical-specific data on which the Agency relies. If EPA continues to rely on the IRIS and HEAST databases, it is imperative that the Agency keep those databases current and technically sound. As discussed below, EPA withdrew the IRIS values for MIBK several years ago, after finding that the information was outdated. EPA currently is preparing an IRIS update for MIBK, and a draft should be available shortly. In identifying health benchmarks for the paint and coatings listing determination, however, the Agency did not rely on the information being considered as part of the IRIS update, and instead EPA turned to the HEAST tables to identify human health benchmarks for MIBK. Yet the HEAST tables are even more outdated than IRIS and values taken from the HEAST tables are identical to the ones which EPA previously withdrew from IRIS.

Due to these shortcomings in the IRIS and HEAST databases, the Panel asks that EPA carefully consider the comments on MJBK presented below.[4] EPA has acknowledged that it is required to consider other information in addition to the IRIS (or HEAST) databases. In its OSWER directive No. 9285.7-16 on the use of IRIS values in Superfund risk assessments, EPA noted that:

> The Agency must respond substantively to any comments raised during the public comment period on the proposed plan that question the use of an IRIS value; see 55 FR 8711 (March 8, 1990). In responding to such comments, Agency staff should keep in mind that the entry of a value in IRIS is not a rulemaking. Thus, the entry of the value on IRIS does not make the number legally binding (i.e., the value is not entitled to conclusive weight) for the purposes of Superfund risk assessments. When a toxicological value is questioned in a comment on the proposed plan, a written explanation for the value ultimately selected (whether it is the IRIS value or another number) must be included in the administrative record.[5]

Similarly, in its guidance on the use of IRIS for purposes of developing values under the early reduction program of the Clean Air Act, EPA noted that:

> It is also important to remember that IRIS is not a comprehensive toxicological database. There may be more recent, credible and relevant information available than is contained in IRIS. Moreover, the act of including a value in IRIS is not subject to notice and comment rulemaking, and may not necessarily have been subjected to external peer review...

> Accordingly, IRIS values are not entitled to conclusive weight and shall not be made legally binding in the context of any other rulemaking action. In addition, EPA or any State agency that uses IRIS should not rely exclusively on IRIS values but should consider all credible and relevant information that is submitted in any particular rulemaking. If an outside party questions IRIS values during the course of an EPA proceeding..., EPA will consider all credible and relevant information before it in that proceeding.[6]

Thus, in order to avoid making inappropriate risk management decisions which undermine the fundamental purposes of the paint and coatings listing determination, EPA should include the most up-to-date information available for all chemicals, including MIBK. By re-evaluating the human health benchmarks in light of the comments presented here, EPA will help ensure that the benchmarks, and ultimately the concentration-based listing levels, accurately reflect the potential hazard associated with each chemical. The Agency should consider these comments and should include a justification in the administrative record for each toxicological value ultimately selected (whether it is derived from IRIS, the HEAST tables, or some other source).

The Panel believes that the RfCs and RfDs selected for MIBK from the HEAST tables, which are based on outdated data and assumptions, will result in listing concentrations for MIBK that are far lower than is necessary to protect human health or the environment. Since the listing concentrations will be lower than necessary, use of these outdated values will result in exactly the type of over-regulation that EPA's risk assessment approach to listing was designed to avoid - that is, many wastes that pose minimal risks to human health and the environment will nonetheless be subject to Subtitle C regulation. EPA should not use the HEAST values and instead should rely on the most current information developed by the Agency as part of the MIBK IRIS listing update.

Table 7-1 of the Background Document identifies an RfD of 0.08 mg/kg/day and an RfC of 0.08 mg/m^3. Both of these values appear in the HEAST tables; the RfD previously was withdrawn from the IRIS database and the RfC was never included in IRIS. The Panel believes that these values are outdated and should not be considered by the Agency when deriving exemption levels for MIBK. Indeed, the Agency is presently in the process of developing an IRIS entry for MIBK. The new draft IRIS entry is currently undergoing internal peer review and a draft is expected to be available for public comment shortly.

The Panel understands from informal communications with the Agency that EPA is likely to base the RfC on a study by Tyl et al. (1987). This developmental toxicity study in mice and rats was part of the testing program sponsored by the Panel under TSCA Section 4. Timed-pregnant CD-l mice and Fischer 344 rats were exposed to MIBK vapors by inhalation on gestational days 6 through 15 at concentrations of 0, 300, 1,000 or 3,000 ppm. The animals were sacrificed on gestational day 21 (rats) or 18 (mice), and live fetuses were examined for external, visceral and skeletal alterations. In mice, exposure to 3,000 ppm resulted in maternal toxicity (apparent exposure-related increases in deaths (12.0%) and clinical signs), increased absolute and relative liver weight, and fetotoxicity (increased incidence of dead fetuses, reduced fetal body weight per litter and reductions in skeletal ossification). No treatment-related embryotoxicity was seen. No treatment-related increases in fetal malformations were seen at any exposure concentration tested. There was no evidence of treatment-related maternal, embryo, or fetal toxicity (including malformations) at 300 or 1,000 ppm.

In rats, exposure to 3,000 ppm resulted in maternal toxicity (clinical signs, decreased food consumption, and decreased body weight and body weight gain), increased relative kidney weight and fetotoxicity (reduced fetal body weight per litter and reductions in skeletal ossification). No increase in fetal malformations was observed in any exposure group relative to controls. At 300 and 1,000 ppm there was no maternal, embryo, or fetal toxicity (including malformations). Reduced fetal body weight was observed in rats at 300 ppm, but, as explained below, this apparent finding was confounded by litter size and should not be considered treatment-related.

The reduction in fetal body weights seen in the rat at 300 ppm is an artifact resulting from the fact that the litters in the 300 ppm group contained more fetuses than the controls. In 1985, the Agency evaluated these data and reached the same conclusion. Specifically, the Agency stated: "The data show that, in the rat and the mouse, MIBK causes significant developmental effects (fetal death, reduced fetal weight, delayed ossification) in the conceptus at the high dose tested only (3,000 ppm). No effects were noted at lower doses (1,000, 300, 0 ppm). The NOEL derived from the data is 1,000 ppm." (Letter of Ottley to Kariya, 1/18/85).

Although the Panel does not know exactly what EPA will propose as the new RfC, it is expected to be significantly higher than the RfC reported in HEAST.[7] The Panel urges the personnel responsible for the paints and coatings listing determination to contact Katherine Anitole in the Risk Assessment Division of the Office of Pollution Prevention and Toxics to obtain information about the most current Agency thinking on the appropriate RfC for MIBK.

The Panel understands that EPA has decided *not* to establish an RfD for MIBK. This decision apparently is based on the Agency's conclusion that there are no MIBK oral studies that are sufficiently robust to calculate an RfD. This is not to say that the MIBK database is in any way inadequate; MIBK has been extensively tested but most tests (particularly recent tests) have been conducted via inhalation because inhalation is the most relevant exposure route.[8] EPA therefore should model MIBK using only the inhalation RfC.[9] Use of the RfD from HEAST cannot be supported scientifically because the Agency specifically withdrew that value from IRIS after concluding that it was not scientifically supportable. Rather than reinstate that value (or reevaluate the study on which it was based), EPA instead has concluded that it will not calculate an RfD for MIBK. Accordingly, it would be particularly inappropriate for EPA to use the oral HEAST value for MIBK.

In summary, in modeling concentration-based listing levels for MIBK, EPA should not rely on the RfD and RfC currently in the HEAST database. Instead, the Agency should use the draft RfC currently being developed by the Agency.

4 *See Community Nutrition Institution v. Young*, 818 F.2d 943, 946 (D.C. Circuit 1987), McLouth Steel Products Corporation v. EPA, 838 F.2d 1317 (D.C. Circuit 1988).

5 US EPA, OSWER Directive No. 9285.7-16. (December 21, 1993.)

6 US EPA, Office of Air Quality Planning and Standards, Guidance on the Use of Integrated Risk Information System (IRIS), (August 26, 1994).

7 As noted above, HEAST reports (and EPA in this rulemaking used) an RfC of 0.08 mg/rn^3 (0.02 ppm). In contrast, the new RfC may be in the range of 1 to 10 ppm.

8 Because of MIBK's rapid biodegradation and volatilization in water (see Appendix A), it is

highly unlikely that humans will be exposed to significant amounts of MIBK in drinking water. In addition, given its lack of persistence and low bioaccurnulation potential (also described in Appendix A), MTBK is unlikely to concentrate in food sources. Finally, dermal absorption is likely to be insignificant compared to inhalation, both because dermal absorption is a less efficient exposure route to humans and because MJBK rapidly volatilizes. Thus, it is clear that inhalation is the only route of human exposure with potential significance.

9 Alternatively, EPA could treat MIBK like the 400+ chemicals present in paints for which EPA concluded that insufficient toxicological data were available, *i.e.,* EPA could remove MIBK entirely from the paint production waste listing rule.

(PMLP 00002. ACC Ketones Panel, page 2, 3, 4, 5 w/attachments)

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3. Phthlates

SUMMARY OF COMMENT

The Agency received one comment from the American Chemistry Council Phthalate Esters Panel on the human health toxicity of phthlates. ACC states that the benchmarks for phthalate esters, RfDs were obtained from IRIS, which ACC believes are excessively conservative. They further state that use of more recent and reliable studies would show that phthalate esters pose even less potentail risk than shown by the risk assessment models.

VERBATIM COMMENT

To model risks, EPA used chronic human health benchmarks. For the phthalate esters, EPA obtained reference doses (RfDs) from the Integrated Risk Information System (IRIS).[2] The Panel has previously submitted to EPA comments on a number of regulatory initiatives which relied on the RfDs for phthalate esters in the IRIS database.[3] Those comments have explained that the RfD values are excessively conservative.[4] If EPA were to use more recent and more reliable studies, the result would be an increase in the RfD values for phthalate esters. Thus, the potential risks posed by phthalate esters in paint production waste are likely yet lower than modeled by EPA. This further supports EPA's determination that the presence of phthalate esters in paint production waste does not pose potential risks of sufficient degree to warrant using phthalates to trigger RCRA listing of the paint production waste.

For DEHP, EPA also used a reference concentration (RfC) taken from a 1996 Superfund document, which in turn relied upon a short-term repeated inhalation toxicity study.[5] The Panel notes that the air concentration for DEHP is limited by DEHP's low vapor pressure –approximately 1 .0E-6 mm Hg.[6] Therefore, the likelihood of inhalation of significant concentrations of DEHP vapor from exposure to paint production waste is extremely low.

One of the documents in the record cites a 1979 study for statements that DEHP and DBP are persistent and bioaccumulative.[7] In fact, substantial information developed since that time indicates that phthalate esters are neither persistent nor of bioaccumulative concern.[8] For example, EPA listed all six phthalate esters reviewed under the Great Lakes Water Quality Initiative -- including DEHP, BBP, and DBP -- as chemicals that are not bioaccumulative chemicals of concern.[9] Detailed information regarding the low persistence and bioaccumulation potential of phthalates has been previously provided to the EPA Office of Solid Waste.[10]

In summary, the Panel believes that the science supports EPA's decision not to include phthalate esters in the list of constituent chemicals which may trigger RCRA listing of paint production waste. In fact, use of more recent and reliable studies would show that phthalate esters pose even less potential risk than indicated by the models used in developing the proposed regulations.

2 See 66 Fed. Reg. 10060, 10096 (Feb. 13, 2001); *see also* Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination, Docket No. F-200 1-PMLP-S0376 (Jan. 17, 2001) (hereafter "Risk Assessment TBD").

3 See, e.g., Comments of the Chemical Manufacturers Ass'n Phthalate Esters Panel on the Notice of Availability of Draft RCRA Waste Minimization PBT Chemical List, Docket No. F-98-MMLP-FFFFF, (Feb. 16, 1999) (hereafter "PBT Comments"). The Panel would be pleased to provide another copy of these comments, on request.

4 See id. at 37.

5. See Risk Assessment TBD, *supra* at 7-10 (referring to Klimisch et al. (1992). Di-(2-ethylhexyl)phthalate: a short-term repeated inhalation toxicity study including fertility assessment, Food Chem Toxicol30:915-919).

6 See Charles A. Staples et al. (1997). The environmental fate of phthalate esters: A literature review. *Chemosphere 35:667,* 673.

7 *See* Listing Background Document, Paint Manufacturing (undated), Docket No. F-2001-PMLP-S0373 *(citing* U.S. EPA, Water - Related Fate of 129 Priority Pollutants, EPA-440/4-79-0296 (1979) (2 volumes)).

8 *See* Staples et al., *supra* at 703 ("phthalate esters are not expected to be highly persistent in most environments") and 723 ("current bioaccumulation models developed for persistent organic chemicals that ignore biotransformation grossly exaggerate the bioaccumulation potential of phthalate esters"); *see also* PBT Comments, supra.

9 See 40 C.F.R. Part 132, Table 6.B.

10 See PBT Comments, *supra.*

(PMLP 00007. ACC Phthalate Esters Panel, page 1, 2, 3)

4. N-butyl alcohol

SUMMARY OF COMMENT

The Agency received one comment from the American Chemistry Council Oxo Process Pane; on the human health toxicity of n-butyl alcohol . ACC states that the benchmark for n-butanol is overly conservative and results in a listing concentration that is lower than necessary to protect human health and the environment.

VERBATIM COMMENT

EPA identifies the benchmarks it intends to use to derive concentration-based listing levels for n-butanol in a background document entitled "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination." (Background Document). The benchmark for n-butanol (0.1 mg/kg/day) is found in Table 7-1 and is taken from the IRIS database. As discussed below, the Panel believes that this benchmark for n-butanol is overly conservative and has resulted in a listing concentration for n-butanol that is far lower than is necessary to protect human health or the environment.

The Panel appreciates the Agency's need to rely on readily available scientific databases such as IRIS when evaluating specific chemicals. However, in the end, the rulemaking will only be as good as the underlying assumptions and chemical-specific data on which the Agency relies. If EPA continues to rely on the IRIS database, it is imperative that the Agency keep the database current and technically sound. EPA, however, has taken years to incorporate new data into IRIS, or to make scientifically appropriate revisions to RfCs and RfDs. For example, the RfD for n-butanol was established in 1991. Thus, the IRIS information has not been updated in nearly a decade.

It would be inappropriate for EPA to establish Subtitle C regulatory requirements based on outdated information, particularly when more up-to-date information has been provided to the Agency. Failure to utilize up-to-date information would undermine regulatory programs, such as the paint production waste listing, that rely on Agency databases. In this case, if concentration-based listing levels are based IRIS data rather than the more recent, credible information set forth in these comments, EPA will perpetuate inappropriate risk management decisions and misdirection of resources towards the regulation of wastes which in fact do not pose hazards to human health and the environment.

Accordingly, the Panel asks that EPA carefully consider the comments on n-butanol presented below.[4] EPA has acknowledged that it is required to consider other information in addition to the IRIS database. In its OSWER directive No. 9285.7-16 on the use of IRIS values in Superfund risk assessments, EPA noted that:

> The Agency must respond substantively to any comments raised during the public comment period on the proposed plan that question the use of an IRIS value; see 55 FR 8711 (March 8, 1990). In responding to such comments, Agency staff should keep in mind that the entry

> of a value in IRIS is not a rulemaking. Thus, the entry of the value on IRIS does not make the number legally binding (i.e., the value is not entitled to conclusive weight) for the purposes of Superfund risk assessments. When a toxicological value is questioned in a comment on the proposed plan, a written explanation for the value ultimately selected (whether it is the IRIS value or another number) must be included in the administrative record.[5]

Similarly, in its guidance on the use of IRIS for purposes of developing values under the early reduction program of the Clean Air Act, EPA noted that:

> It is also important to remember that IRIS is not a comprehensive toxicological database. Theremay be more recent, credible and relevant information available than is contained in IRIS. Moreover, the act of including a value in IRIS is not subject to notice and comment rulemaking, and may not necessarily have been subjected to external peer review... Accordingly, IRIS values are not entitled to conclusive weight and shall not be made legally binding in the context of any other rulemaking action. In addition, EPA or any State agency that uses IRIS should not rely exclusively on IRIS values but should consider all credible and relevant information that is submitted in any particular miemaking. If an outside party questions IRIS values during the course of an EPA proceeding... EPA will consider all credible and relevant information before it in that proceeding.[6]

Thus, in order to avoid making inappropriate risk management decisions which undermine the fundamenta1 purposes of the paint and coatings listing determination, EPA should not simply accept the IRIS values, but should carefully re-evaluate those values in light of the comments presented herein to ensure that the RfDs, and ultimately the concentration-based listing levels, accurately reflect the hazard associated with each chemical.

Significantly, RfDs, RfCs, LOAELS and NOAELs consider only the dose level at which effects are seen, not the type or severity of the effect caused by the chemical. For example, two chemicals could have the same NOAEL and LOAEL (or Rfl) or RfC), but one could cause irritation while the other could cause severe birth defects. Historically, EPA has recognized the necessity of considering both the dose level and the severity of the effect.[7] For example, initially the IRIS program sought to address this discrepancy in the severity of effects caused by different chemicals through its use of an uncertainty factor to extrapolate from subchronic to chronic effects.[8] Thus, EPA would use an uncertainty of 10 if the effects observed in the study were particularly severe, and an uncertainty factor of 1 or 3 if the effects were mild.[9]

Similarly, the NRC Guidelines recommends using uncertainty factors of between 1 and 10 "depending on the nature and severity of the adverse effects."[10]

More recently, however, the IRIS database has automatically applied an additional uncertainty factor of 10 if a chronic study is not available. Typically, no chemical-specific justification for this additional factor is provided, and this additional factor of 10 has been applied even when the National Toxicology Program (NTP) has concluded that existing data do not warrant a chronic study. The end result is a set of RfD/RfC values that are more conservative than what EPA has considered necessary in the past to provide an adequate margin of safety. This issue is particularly important for chemicals such as butanol, which cause only mild effects at high doses.

Coupled with these conservative human health benchmarks are the conservative assumptions present in the model used by EPA to calculate concentration-based listing levels. By combining these conservative human health benchmarks and conservative modeling assumptions, EPA is likely to develop listing concentrations that are far lower than is necessary to protect human health or the environment. Since the resultant listing concentrations will be lower than necessary, use of these conservative human health benchmarks and modeling assumptions will result in exactly the type of over-regulation that EPA's risk assessment approach to listing was designed to avoid - that is, many wastes that pose minimal risks to human health and the environment will nonetheless be subject to Subtitle C regulation. Consequently, the Panel fully supports the generic comments submitted by the American Chemistry Council regarding the model and strongly urges EPA to re-examine the uncertainty factors used in deriving the IRIS values for the n-butanol.

Although the n-butanol RfD is relatively high as compared to other chemicals, indicating butanol's low toxicity, the Panel believes that this RID in fact is overly conservative because of the scientifically unnecessary application of an uncertainty factor of 10 to extrapolate from subchronic to chronic exposures. Table 7-1 of the Background Document identifies an Rif) for n-butanol of 0.1 mg/kg/day from the IRIS database. EPA derived this oral RfD from a 13-week study in which rats exposed to 500 mg/kg/day via bolus dose exhibited ataxia and hypoactivity. (U.S. EPA 1986.) No dose-related differences between treated and control animals were seen in body or organ weight, food consumption, moribundity or mortality. Nor did ophthalmological, gross, and histopathological examinations reveal any differences between control and treated animals.[11] EPA determined the next lower dose of 125 mg/kg/day to be the NOAEL. To this EPA applied an uncertainty factor of 1000 (10 for interspecies extrapolation, 10 to protect sensitive subpopulations and 10 for extrapolation from subchronic to chronic) to derive a RfD of 0.1 mg/kg/day (7 mg/day for 70 kg person).

In other words, EPA has added a thousand-fold safety factor (three orders, of magnitude) even though the effects seen were only transitory ataxia and hypoactivity following extremely high bolus doses. This dosing regime is the equivalent of a 70 kg human ingesting 35 grams - approximately 1¼ ounces - of n-butanol at one time, a dose level that is the approximate equivalent of a jigger (1.5 ounces) or shot (1.0 ounces) of pure grain alcohol (ethanol). "Hard" liquor - such as vodka or whiskey - generally is "80 proof," or 40 percent alcohol. Thus, this dose level can be roughly equated to a 70 kg (150 pound) human taking three shots of vodka at once (1.25 ounces/0.4).

In the case of butanol, there are three major reasons why the application of an uncertainty factor to extrapolate from subchronic to chronic for purposes of setting concentration-based listing levels goes well beyond what is scientifically necessary to protect human health. First, the ataxia and hypoactivity observed in the n-butanol study are properly characterized as short-term effects that occurred in response to very high bolus doses of the chemical (500 mg/kg). Such short-term suppression of the neurologic system is very different from a pathologic change or other long-term effects. No such long-temi effects (e.g., histopathologic or hematological changes) were seen in the study cited in IRIS. Thus, this study supports characterization of n-butanol as an anesthetic when administered at high bolus doses, but not as a neurotoxin. Moreover, studies conducted on butyl acetate as part of a TSCA Section 4 Consent Agreement support the conclusion that n-butanol causes only transient acute effects. (Butyl acetate is rapidly metabolized to n-butanol via normal metabolic pathways.) These inhalation studies showed acute central nervous system effects, as well as decreased body weight and food consumption, at 1500 ppm (approximately 1200 mg/kg). Microscopic evaluation of the brain, spinal cord, and several nerves showed no treatment related effects, however, supporting the conclusion that n-butanol (as metabolized from butyl acetate) does not cause neurotoxic effects.[12]

Second, n-butanol is more rapidly oxidized in vivo by alcohol dehydrogenase than ethanol. (DiVicenzo and Hamilton, 1979). It oxidizes to butyraldehyde, then to butyric acid and ultimately to CO_2 and water. (Von Ottingern, 1943). In rodents administered radiolabeled n-butanol in corn oil by gavage, 83.3% of the administered dose was recovered as CO_2 within 24 hours and only 0.34% as the unchanged alcohol. (DiVicenzo & Hamilton, 1979). Butanol disappears rapidly from the plasma and was below the level of detection in four hours. Similarly, when the expired air and venous blood of dogs exposed by inhalation to n-butanol were monitored, the level of alcohol in the expired air decreased rapidly after the exposure period ceased and the level in blood was below the level of detection within one hour. (DiVicenzo and Hamilton, 1979). In addition to the alcohol dehydrogenase pathway, liver microsomal pathways and non-enzymatic degradation also can occur. (Cosmetic Ingredient Review, 1987). Thus, humans are able to metabolize n-butanol via normal metabolic pathways. An uncertainty factor is not needed to extrapolate from subchronic to chronic where, as here, the only effect seen in the subchronic study is better characterized as a transient acute effect, particularly because n-butanol is so rapidly metabolized through normal metabolic pathways.[13]

Third, n-butanol is a natural component of food, and is approved for use as a food additive and in cosmetics. Butanol occurs naturally as a result of carbohydrate fermentation in a number of alcoholic beverages including beer, grape brandies, apple brandies, wine, and whisky.[14] It also occurs naturally in fruits, dried beans, split peas, lentils, cheese, roasted filberts, fried bacon, hops, jack fruit, heat-treated milks, muskmelon, cheese, southern pea seed, and cooked rice.[15] Butanol is also formed during deep frying of corn oil, cottonseed oil, trilinolein,, and triolein. In addition, butanol has been found in waste gases from the boiling and drying of oil. Butanol is approved for use as a flavoring agent in butter, cream, fruit and alcoholic beverages. Butanol is also used as a solvent in cosmetics, gums, dyes, resins (including those for paper and paperboard coatings for food packaging materials), cellophane and for the biological extraction of egg yolks, flavors, oils, antibiotics, hormones and vitamins. Butanol can be found in perfumes, fingernail basecoats, undercoats, polishes, enamels and their removers.[16]

Given the occurrence of this compound in foods and in cosmetics, its metabolism by normal metabolic pathways, the general low toxicity of this compound, and the fact that the effects seen in the IRIS study are more properly characterized as transient, acute effects, no uncertainty factor is necessary for the extrapolation from subchronic to chronic. Such an approach would be consistent with EPA's historic practice of establishing uncertainty factors for extrapolating from subchronic to chronic based on the severity of the observed effect, rather than through rote application of a factor of 10 - whether or not that factor is justified. Thus, for purposes of this rulemaking, EPA should use a human health benchmark for n-butanol of 1.0 mg/kg/day (70 mg/day for a 70 kg person) rather than the decade-old IRIS database entry.

4 See Community Nutrition Institution v. Young, 818 F.2d 943, 946 (D.C. Circuit 1987), *McLouth Steel Products Corporation v. EPA,* 838 F.2d 1317 (D.C. Circuit 1988).

5 US EPA, OSWER Directive No. 9285.7-16. (December 21, 1993.)

6 US EPA, Office of Air Quality Planning and Standards, Guidance on the Use of Integrated Risk Information System (IRIS), (August 26, 1994).

7 See, e.g. 59 Fed. Reg. 15504 (April 1, 1994) (proposed regulations under Section 112(g) of the Clean Air Act); EPA, Methodology and Guidelines for Ranking Chemicals Based on Chronic Toxicity Data. (November 1984) (EPA's methodology for establishing reportable quantities (Rqs)).

8 Indeed, prior to this time, EPA had accepted a 100-fold safety factor applied to the lowest NOEL from animal studies as being sufficiently conservative to protect human health. The 100-fold safety factor includes a factor of 10 for extrapolating from animals to humans (interspecies extrapolation) and a factor of 10 to account for sensitive subpopulations. Typically, no uncertainty factor was used to extrapolate from subchronic to chronic.

9 See, e.g Michael L. Dourson and Jerry F. Stara, "Regulatory History and Experimental Support of Uncertainty (Safety) Factors", *Regulatory Toxicology and Pharmacology*, 3: 224-23 8, 232 (1983): "The value for this variable uncertainty factor has been chosen by the U.S. EPA (1980) from values among 1 through 10 based on the severity of the adverse effect of the LOAEL. For example, if the LOAEL represents liver cell necrosis, a higher value is suggested for this uncertainty factor (perhaps 10). if the LOAEL is fatty infiltration of the liver, then a lower value is suggested (perhaps 3). The hypothesized NOAEL should be closer to the LOAEL showing less severe effects." Dr. Dourson was an EPA toxicologist who was closely involved with the initial development of the IRIS database.

10 National Research Council, Guidelines for Developing Community Emergency Exposure Levels, p. 64(1993).

11 At the interim sacrifice, slight reductions in some hematological parameters were seen in mid- and high-dose females. As these changes were not seen at the final sacrifice, however, the effect was considered to be transitory and not adverse.

12 The acute study was submitted to EPA on August 30, 1994, and the subchronic study was submitted on February 15, 1996. These studies are available from TSCA Docket #OPPTS-42134G. Additional copies will be provided on request.

13 In addition, n-butanol is a low-molecular weight, simple hydrocarbon which is nonpersistent and readily biodegradable. For example, the draft STAR for n-butanol notes that n-butanol has a log K_{0w} of 0.88 and concludes that n-butanol is not environmentally persistent or likely to bioaccumulate. The minimal environmental persistence and lack of bioaccumulative potential of n-butanol effectively limits any potential environmental exposures.

14 WHO 1987.

15 Id.; EPA, 1989 at pp. 10-11.

16 Id.

(PMLP 00011. ACC Oxo Process Panel, page 2-7 w/attachments)

5. MMA

SUMMARY OF COMMENT

The Agency received one comment from the Methacrylate Producers Association stating that MMA should not be listed as one of the constituents of concern because it poses no significant risk to human health or the environment. In addition, they state the levels at which MMA must exist before presenting an appreciable risk are at concentrations that would never be present in paint production wastes.

VERBATIM COMMENT

Second, MMA should not be listed as one of the constituents of concern, because MMA is not a carcinogenic, teratogenic, or reproductive hazard, and would not pose a significant risk to human health or the environment even at levels substantially exceeding the concentrations specified in the Proposed Rule. MMA is a semi-volatile liquid that can be an olfactory irritant at high concentrations, but MMA does not, even after prolonged exposure to high concentrations, have any carcinogenic, genotoxic, teratogenic, reproductive, or other such toxicological effects. EPA's own IRIS Review has determined that "MMA does not represent a carcinogenic hazard to humans" (Toxicology Review of Methyl Methacrvlate, January 1998). As explained above, MMA would never be present in such concentrations in paint production wastes. But EPA's IRIS Review shows that even in the hypothetical case that MMA was to be found at such levels, there would be no risk of carcinogenic or other toxic impacts. Even with EPA's overly conservative modeling assumptions regarding paint wastes, the levels of MMA which must exist before presenting any appreciable risk are quite high. The 28.000 ppm (2.8%) level for solid wastes and the 2,100 ppm (0.2 1%) level for liquid wastes are we11 above the levels proposed for almost all of the other chemical constituents. This is a direct result of the low toxicity of MMA.

The EU Risk Assessment (final draft dated April 4, 2001) similarly concludes that MMA does not pose a significant threat to the environment. Specifically, with respect to the environmental effects of MMA from production sites, processing scenarios, and use scenarios including the formulation of paints, "there is at present no need for further information and/or testing and for risk reduction measures beyond those which are being applied already" (EU Risk Assessment final draft, p. 160). Therefore, because MMA does not pose a significant risk to health or the environment, EPA should remove MMA from the list of constituents that would trigger regulation under the Proposed Rule.

(PMLP 00016. MPA, page 7, 8 w/attachments)

6. Acrylamide

SUMMARY OF COMMENT

The Agency received one comment from NAPPA on the human health toxicity of acrylamide. NAPPA states that acrylamide is one of the chemicals that is being updated in the IRIS database. They further state that EPA should consider any available scientific information on acrylamide that may not be in the current version of IRIS to adjust its risk assessment. NAPPA lists four relevant and recent reports.

VERBATIM COMMENT

The proposed rule states that the health benchmarks for its risk assessment were obtained primarily from the most recent Integrated Risk Information System (IRIS) and Health Effects Summary Tables (HEAST). The Agency acknowledges that several of the constituents of concern are currently being reevaluated in IRIS. (66 Fed. Reg. 10096) EPA goes on to say that "if the IRIS health benchmarks change, the Agency would likely use the most current benchmarks as the basis for setting concentration levels."

Acrylamide is indeed one of the chemicals being updated. On February 22, 2001, EPA requested information relevant for updating its acrylamide IRIS evaluation. (66 Fed. Reg. 11165) According to EPA's request for information, the revised IRIS database for acrylamide is not expected until sometime in 2003. However, the Consent Decree requires that EPA promulgate a final listing determination for paint production wastes on or before March 30, 2002. Hence, it is reasonably predictable that the IRIS benchmarks for acrylamide will not be completed before EPA promulgates a final paint waste rule.

It is significant to note that one of the primary reasons EPA is preparing to update the IRIS file on acrylamide is the availability of new scientific information that might significantly change the current IRIS evaluation.

NAPPA would agree that there is significant new scientific information available for acrylamide since it was last updated by EPA. There have been a number of important toxicological studies and literature reviews completed within the past few years. These include several investigations performed by the K.S. Krump Group, which have examined the relevant literature to determine the carcinogenic potency classification for acrylamide. These reviews in particular raise serious questions about the relevance of results from prior animal toxicology studies to humans. The following reports are attached to these comments:

1) "The Biological Role of Acrylamide-Induced Astrocytomas in the Aging Fischer 344 Rat to Human Health Outcomes." November 2000.

(2) "Mechanism of Acrylamide Induction of Benign Mammary Fibroadenomas in the

Aging Female Fischer 344 Rat: Relevance to Human Health Risk Assessment." December 14, 1999.

(3) "The Biological Role of Acrylaniide-Induced Thyroid Follicular Cell Tumors in the Aging F344 Rat to Human Health Outcomes." November 2000.

(4) "Consideration of the Potency Classification of Acrylamide Based on the Incidence of Tunica Vaginalis Mesotheliomas (TVM5) in Male Fischer 344 Rats." June 11, 1999.

NAPPA believes that if the revised IRIS file is not available at the time EPA finalizes this rule, and in the event EPA persists in designating acrylamide for possible regulation in paint waste, the RCRA Office must conduct a complete assessment of the available health effects information on acrylamide. In particular, EPA should consider any available scientific information on acrylamide that may not appear in the present version of the IRIS database to adjust its risk assessment. EPA's RCRA program is not entitled to simply rely on an outdated IRIS database.

(PMLP 00034. NAPPA, page 7, 8 w/attachments)

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7. Antimony

VERBATIM COMMENTS

CAT and NAT is a titanium (IV) oxide crystalline matrix of rutile formed by extremely high temperature calcination with trivalent chromium (also "Cr III" or "chromium III") or nickel oxide and antimony (or "Sb") (III) oxide. As a result of the calcination, the nickel or chromium III ions and antimony (III) ions, which are oxidized to antimony (VI), are diffused into the rutile lattice of the molecule, taking positions in the lattice by replacing the titanium (or Ti) (IV) ions. They are chemically bound and locked into this lattice as one crystalline compound upon cooling. The result is a crystalline molecule composed of a rutile lattice containing all three elements of nickel or chromium (III), antimony (V), and titanium (IV) surrounded by oxygen ions which make up the rest of the crystal and thus impart the extremely high stability commonly associated with these pigments. As discussed below, we now know that these compounds are so stable that they can withstand solid waste incineration without breakdown.

The structure of CAT as an example, in a simplified representation. is set forth below:

Source: Pigment Handbook: Volume 1: Properties and Economics Second Edition, Edited by Peter A. Lewis, Copyright (c) 1988 John Wiley & Sons, Inc.. p. 385. Reprinted by permission of John Wiley & Sons, Inc.

The basic chemical formula is $(Ti,Cr,Sb)0_2$or $(Ti,Ni,Sb)0_2$. CAT and NAT are well known for outstanding chemical, heat and light stability. These pigments are highly resistant to light and weather. Additionally, they are insoluble in water, organic acids, dilute alkalies, and most inorganic acids.[1] A member company recently undertook a solubility study of CAT. In order to perform the solubility study of constituent metals from CAT the testing laboratory needed to dissolve the compound. After several attempts the laboratory concluded:

> "Tests to perform solubility studies on Chrome Antimony Titanate Buff Rutile were unsuccessful. Attempts to solubilize the material in any solvent including boiling sulfuric acid were unsuccessful to even perform calibration curves..."

An extraction study was completed using 95% and 8% ethanol. No chrome or titanium were detected at the method detection limit of .04 and .06 parts per million respectively. Based upon the absence of titanium at a method detection limit of 10 parts per billion, the researchers concluded that the CAT and NAT under study had a solubility of less than 20 parts per billion.[2]

Occasionally, other materials, called modifiers, containing one or more other elements, such as the modifier "aluminum oxide", may be combined within the CAT and NAT molecule to produce special physical-chemical characteristics, usually color.

The primary use for CAT and NAT is in color pigment applications for the coloration of plastics, high temperature engineering resins, high performance industrial coatings exterior paints, ceramic bodies, porcelain enamels, and roofing granules.[3]

CAT and NAT are not bioavailable and present no acute or chronic health hazard to humans. CAT and NAT color pigments are extremely stable and are not toxic to humans. CAT and NAT have LD-50-values (rat oral) in excess of 10,000 mg per kg. The estimated lethal dose for humans by oral route is one quart or more, i.e., more than one kilogram pigment per 70 kg body weight.[4] There is no existing evidence of significant toxicity resulting from exposure to CAT and NAT.

Laboratory testing demonstrates that CAT and NAT do not produce acute toxic effects as a result of ingestion. In addition, studies conducted during the 1970's by the Bayer Institute of Toxicology, confirmed the lack of acute toxicity (acute oral, skin, eye and mucus membrane) by studies on Male Wister-II-Rats, white New Zealand Rabbits and fish, using among other inorganic pigments, CAT and NAT.[5], [6], [7] An Organization for Economic Cooperation and Development sponsored Screening Inventory Data Set ("SIDS") dossier is now being prepared for NAT. After completion of all mammalian toxicity, developmental and reproduction endpoints, the findings indicate no toxicity or adverse reaction. All tests were negative.

The level of Sb in CAT and NAT (9% Sb) is above that observed in typical soils. However, the Sb in the pigments is tightly bound inside a mineral lattice. Antimony which is not extractable appears to be inert in the environment.

Tests were conducted on the Sb levels in plants and animals around a smelter contaminated with surface Sb deposits.[8] The Sb uptake by plants was found to be minor compared to the high background levels of antimony in the soil. Further, the small amount of Sb taken up by the plants correlated with the levels of extractable Sb in the soil. This suggests that antimony is not extractable and is also not bioavailable.

There is evidence to suggest that antimony will not bioaccumulate in the food chain. Studies by the EPA and others on fish and other aquatic organisms reveal low bioconcentration of Sb.[9] Studies of a contaminated smelter site reveals low bioconcentration of Sb in small mammals which fed on contaminated plants. This is further reinforced by a feeding study of rats performed with CAT.

A study of the blood and wool antimony levels in sheep grazed on antimony contaminated land revealed that antimony levels in the sheep were not elevated.[10] The study indicated that while antimony levels at the site were 7 to 30 times higher than typical background levels, the conclusion was drawn that the antimony was tightly bound in the soil and thus unavailable to the sheep.

Wistar rats were fed up to 1% or 10,000,000 PPB (parts per billion) CAT and NAT in their diets for three months.[11] Hematological, clinical, and biochemical tests were conducted at the end of the study. No adverse effects on food consumption or body weight gain were observed during the testing. No mortalities or overt signs of reaction to the treatment were observed.

After this feeding study, Sb was observed at a concentration of 27 PPB (ng\g=PPB) in the rat's livers. Human livers are reported to contain a background level of 23 to 167 PPB antimony.[12, 13] The amount of antimony in the rat's daily diet was large (900,000 PPB - Sb), the time these animals were fed the Sb containing material was long (over 90 days), and the amount of Sb observed in the liver was small (only 27 PPB), which represents only 0.003% of the Sb contained in a single day's food). Upon oral exposure, the liver is a major site of antimony concentration in animals.[14]

However, uptake and retention of antimony by major organs such as the liver is highly dependent on the chemical form and oxidation state of the antimony compound.[15] Trivalent antimony compounds are in general more toxic than those containing Sb(V). CAT and NAT contains antimony in a chemically inert form as Sb(V).

The observed liver levels (27 PPB) noted in the animal experiment discussed above are at the bottom range of those observed in unexposed human livers (23-167 PPB). These observations suggest that even in large, extended doses, CAT and NAT are not a significant source of bioavailable antimony.

There has been a recent group of studies which reported that Sb induced various degrees of stress and toxicity in cultured cardiac myocytes.[16] Highly potent and toxic soluble antimony compounds have been used as medicines for the treatment of parasites for well over 50 years. In all cases, these recent studies involved direct cell exposure to the highly soluble and toxic chemical, potassium antimonyl tartrate. Potassium antimonyl tartrate is the most potent of the soluble toxic antimony medicines compounds. There is no evidence in these studies which show that highly insoluble compounds such as CAT and NAT could provoke such a toxic reaction. Additionally, there is no foreseeable means by which an individual could be exposed to antimony through an exposure to CAT and NAT, which could create such a reaction. These studies are not, therefore, relevant to a discussion of CAT and NAT.

CAT and NAT pigments are capable of withstanding the most severe of environments. Experiments performed by BASF indicate that these compounds can be incinerated within plastic resin and will not be volatilized or otherwise lost. These experiments involved incineration of plastic resin samples colored with CAT and NAT. After incineration, the residuals were analyzed for CAT and NAT constituent elements. Powder X-ray analysis revealed no degradation of the rutile structure. The results confirmed that little or no loss of CAT and NAT occurred in the incineration process.

This stability is created in the manufacturing process. The mixed metal oxides are fused into a single molecule during the manufacturing process at temperatures in excess of 1800 degrees Fahrenheit.[17]

As a result of the extreme stability of CAT and NAT pigments, biological transformations are not anticipated to occur. Additionally, CAT and NAT are not bioavailable in the lung and cannot be assumed to be absorbed by the lung. CAT and NAT are not carcinogenic or mutanogenic and do not show any propensity toward these characteristics. Therefore, even if CAT and NAT were not cleared as inert particles from the lung, no absorption in-vivo would be anticipated within the macrophage cell. This position is strongly supported by decades of use in thousands of work-places where no health effects from exposure to antimony or trivalent chromium were found as a result of exposure to CAT and NAT pigments. CAT and NAT are likely to be processed through the body in the same manner as its principal ingredient, rutile titanium dioxide. Titanium dioxide has been tested extensively and does not produce a tissue response by inhalation, other than as a bulk dust.[18]

CAT and NAT are not acutely or chronically toxic as demonstrated by extensive laboratory testing. New information, extensive literature searches, and a review of the chemically analogous rutile titanium dioxide indicates that there is no evidence which demonstrates that exposure to CAT and NAT pigments is associated with any chronic hazard. Finally CAT and NAT is not hazardous to the environment and will not break down under the most aggressive environmental conditions, including solid waste incineration.

As is evident from this discussion, antimony should not be included in, or referenced as, a primary toxic constituent of paint originating in CAT and NAT pigments. Antimony is not available from these pigments and ordinary household, latex or alkyd based, paints would not use these types of pigments.

1 NPIRI, Raw Materials Data Handbook, Volume 4, 4-37 (prepared by the National Printing Ink Research Institute), The Shepherd Color Company Laboratory Analysis, January 11, 1988 and December 7, 1995. Mobay Corporation Letter and Data Attachments, November 21, 1988. CPMA joint testing of CAT and NAT (1997)

2 Extraction study provided by a member company, March 2, 1995.

3 NPIRI, Raw Materials Handbook, Volume 4, 4-37

4 Duke Laboratories, Examination of Ferro Corporation Inorganc Pigment samples for Rat LD-50", March 14, 1977, p.1.

5 Duke Laboratories, "Examination of Ferro Corporation Inorganic Pigment Samples for Rat LD-50", "July 8. 1977, p.1, See also Hita Research data below.

6 The Hita Research Laboratories, Chemical Bio-testing Center, Chemical Inspection and Testing Institute, did a comprehensive review of a similar molecule, Nickel Antimony Titanate (NAT), an analogous substance in a study titled "Pharmacological Studies of Tipaque Titanium Yellow with regards to its Toxicity". This study included a comprehensive feeding study of rats, as well as, environmental and epidemiological monitoring studies involving dogs, cats, gold fish, killifish and germinating plant seeds. The

study concluded that: “In view of the results of the above experiments, we have drawn the following conclusion and judgement. In the continuous experiment of oral administration of titani yellow to rats, observation was made on the growth curve of animals but no difference was noticed between the dosed group and the control and growth was not inhibited by the administration of the specimen. Administered rats indicated smooth growth showing no evidence of toxicity. No meaningful difference was observed between treated group and the control in regard to the blood image, weight and volume of various internal organs. In the patholohistological investigation, no pathologic change was observed in the internal organs of treated rats. Titani yellow exercised no influence upon small fish nor did it inhibit the growth of plant seed. It indicated no toxicity due to ionic action.

7 Bayer. Institute of Toxicology, Acute Toxicity of Inorganic Pigments, 1972, 1977.

8 Callahan. M.A., Slimak, M.W., Gabel, M.W., et.al., Water-related environmental fate of 129 priority pollutants, U.S. Environmental Protection Agency, Washington, D.C., Office of Water Planning and Standards, 1197, Vol. 1. EPA 440/4-79-029a, 5-1 to 5-8, Citation taken from Toxicological Profile for Antimony, U.S. Department of Health & Human Services, Washington, D.C., 1992, p. 82, Agency for Toxic Substances and Disease Registry. (Attached)

9 Ambient water quality criteria for antimony, US Environmental Protection Agency, Washington, D.C., Report prepared for the Office of Water Planning and Standards, 1980, EPA 440/5-80-0 and 440/5-90-0. Citation taken from Toxicological Profile for Antimony, U.S. Department of Health and Human Services, Washington D.C.,1992, p. 82. Agency for Toxic Substances and Disease Registry. (Attached)

10 Gebel. T.. Kevekordes, S., Schaefer, J., von Platen, H., Dunkelberg, H., Mutation Research 368, 267-274 (1996)

11 Bomhard, E., Loser, E., Dornemann, A., Toxicology Letters, 1982, 14, 189-194.

12 Toxicological Profile for Antimony, U.S. Department of Health & Human Services, Washington, D.C. 1992, pp. 34 and 35, Agency for Toxic Substances and Disease Registry.

13 Gurnani,N., Sharma, A., Talukder, G., The Nucleus. 37(1,2),71-96, (1994)

14 Fowler, B.A., Goering, P.L.. University of Maryland School of Medicine, in Met. Their Compd. Environ., 1991, pp. 743-750, Merian & Ernest Eds., VCH, Weinheim, Federal Republic of Germany.

15 Ibid.

16 M.A. Tirmenstein, et al., Antimony-Induced Oxidative Stress and Toxicity in Cultured Cardiac Myocytes, Toxicology and Applied Pharmacology, 130, pp.41-47. (1995), M.A. Tirmenstein, et al., Antimony-induced Alterations in Homeostasis and adenine Nucleotide Status In Cultured Cardiac Myocytes, Toxicology, 119, pp.203-211, (1997), Toraason, M. et al., Altered Ca^{2+} Mobilization During Excitation-Contraction in Cultured Cardiac Myocytes Exposed to Antimony, Toxicology and Applied Pharmacology, 146, pp. 104-115 (1997)

17 Endriss, H. and Rade, D., “Metal Oxide Mixed Phase Pigments, Toxicological and Ecological Aspects” translated from Kunstoffe German Plastics, 79,(1989) 7, additional

study of thermal decomposition provided by the author in private correspondence.

18 Lee K.P. et al. "Transmigration of Titanium Dioxide Particles in Rats After Inhalation Exposure," Experimental and Molecular Pathology 42, 33 1-343 (1985).

(PMLP 00010. CPMA, page 1-9)

The RfD used in determining antimony to be a "constituent of concern" is derived from a chronic bioassay of rats exposed to antimony potassium tartrate reported by Schroeder *et al.* (1970).[5] In this study, oral administration of 0.35 mg/kg/day antimony potassium tartrate reportedly caused decreased longevity and affected blood glucose and cholesterol levels. Nonetheless, the toxicity data for antimony potassium tartrate cannot be used to assess the risks associated with other antimony compounds. *See* Attachment A (prior submissions of Antimony Oxide Industry Association explaining inadequacy of Schroeder study). Antimony potassium tartrate is significantly more soluble than antimony trioxide and other inorganic antimony compounds, and solubility contributes directly to the systemic toxicity of a compound. Antimony potassium tartrate has a solubility in water which is <u>four orders of magnitude</u> greater than that of antimony trioxide. Because there is a direct relationship between the solubility of a substance and the gastrointestinal absorption efficiency of the receptor organism, a particular dose of antimony potassium tartrate would be expected to be significantly more toxic than the same dose of the less soluble antimony oxides. Thus, reliance on the Schroeder *et ai.* (1970) study resulted in the derivation of an RfD which overstates by orders of magnitude the potential risks posed by exposure to antimony oxides.[6]

A new subchronic oral study of antimony trioxide in rats has recently been published in the peer-reviewed literature. In contrast to the flawed study by Schroeder *et al.* on the basis of which antimony has been identified as a "constituent of concern," this well-conducted study provides sound data for a human health benchmark calculation.

In the new study, Hext *et al.* (1999)[7] fed male and female Wistar rats (12/sex/dose) diets containing 0, 1,000, 5,000 or 20,000 ppm antimony trioxide for 90 days.

Consumption rates of 0, 84, 421 and 1,686 mg/kg/day were calculated for male rats and 0, 97, 494 and 1,879 mg/kg/day for female rats. Clinical observations, body weight and food consumption were measured during the course of the study. Following the 90-day study period, the animals were sacrificed and subjected to a complete necropsy. Cardiac blood samples were taken for clinical pathology, selected organs were weighed and specified tissues were taken for subsequent histopathological examination.

The researchers found no mortalities and no treatment-related clinical observations. There were no treatment-related ophthalmoscopic findings, no adverse effects on body weight, food consumption or hematological parameters. Serum cholesterol and urine volume was significantly increased in high dose females, as were triglycerides and red blood cell count in high dose males. Alkaline phosphatase activity was significantly decreased in high-dose males and mid- and high-dose females. SGOT and serum glutamic aminotransferase were significantly increased in high-dose females. Absolute and relative liver weights were increased by approximately 10% in high-dose males and females, but there were no histological changes in the liver. No other treatment-related effects were seen. The study researchers did not consider these effects to be of toxicological significance, and therefore considered the NOAEL to be 20,000 ppm in both sexes (1,686 mg/kg/day for males and 1,879 mg/kg/day for females).

The National Research Council (NRC) of the National Academy of Sciences (NAS) reviewed the study and concluded that the increase in serum enzymes and liver weights in high-dose females were adverse when considered together with the data from earlier studies. The NRC therefore concluded that the LOAEL is 1,879 mg/kg/day and the NOAEL is 494 mg/kg/day.[8] While NRC's interpretation differs from that of the authors, under either interpretation, the study confirms that antimony trioxide's oral toxicity is orders of magnitude less than the oral toxicity of antimony potassium tartrate.

AOIA urges EPA to evaluate antimony trioxide using this recent 90-day oral study, and to use these data to calculate a scientifically well-founded human health benchmark for antimony trioxide. The results of this study clearly indicate the oral toxicity of antimony trioxide is at least three orders of magnitude less than the toxicity of antimony potassium tartrate. Thus, EPA should not use data generated for antimony potassium tartrate to evaluate antimony trioxide. Specifically, EPA should not use an RfD derived from the Schroeder study, which assumes no difference in water solubility, absorption of a delivered dose, or resulting toxicity. If EPA more properly evaluates antimony trioxide on the basis of the recent and scientifically sound sub chronic oral study, EPA will find that antimony trioxide is not a "constituent of concern" subject to listing under the proposed Rule.

The RfD for antimony compounds was established in 1991 and thus has not been updated in nearly a decade. It would be inappropriate for EPA to establish Subtitle C regulatory requirements based on outdated information, when more up-to-date information has been provided to the Agency.

(PMLP 00021 AOIA pp. 3-5 w/attachments)

The source of Antimony in paint formulations is in pigments. NPCA fully concurs with the Color Pigments Manufacturing Association's (CPMA) comments (hereby incorporated by reference) in which CPMA states that EPA has both over-estimated the toxicity and environmental risk posed by pigments containing antimony and the use of such pigments in paint formulation. Based on these comments EPA should drop antimony as a COC. NPCA reiterates key aspects of the CPMA comments herein.

Antimony containing pigments are not bioavailable. The only color pigments that incorporate antimony are complex inorganic color pigments. In fact, the two most important and widely used Antimony containing pigments — Chrome Antimony Titanate (CAT) and Nickel Antimony Titanate (NAT) are in no way bioavailable. They are insoluble in water, organic acids, dilute alkalis and most organic acids and these pigments have solubilities of less than 20 parts per billion (ppb).

In addition, Antimony containing pigments present no acute or chronic health hazard to humans or the environment. The LD-50-values (rat oral) are in excess of 10,000 milligrams per killigrams (mg/kg). The estimated lethal dose for humans by oral route is one quart or more, (i.e., more than one kilogram pigment per 70 kg body weight). There is no existing evidence of significant toxicity resulting from exposure to CAT and NAT. Laboratory testing demonstrates that CAT and NAT do not produce acute toxic effects as a result of ingestion.

Evidence suggests that antimony will not bioaccumulate in the food chain. EPA and others found that fish and other aquatic organisms have low antimony bioaccumulation. Other studies indicate low bioaccumulation in small mammals and sheep as well since the antimony was found to be tightly bound in the soil and unavailable.

Therefore, should any listing determination go forward, despite NPCA's objections, Antimony should not be included in any COC list.

(PMLP 00033. NPCA, page 29 w/attachments)

In addition, as NPCA summarized in our April 16, 2001 comments, the only inorganic COC, Antimony does not present a significant hazard to human health or the environment and is sufficiently rare at proposed levels to warrant exclusion. Therefore, as no COC listed in the Proposed Rule presents any risks from paint production wastes, a no list determination must be made.

(PMLP L0001. NPCA, p. 2)

Based on these comments EPA should drop antimony as a COC. DuPont reiterates key aspects of the CPMA comments and incorporates these comments by reference.

Antimony containing pigments are not bioavailable. The only color pigments that incorporate antimony are complex inorganic color pigments. In fact, the two most important and widely used antimony containing pigments — Chrome Antimony Titanate (CAT) and Nickel Antimony Titanate (NAT) are in no way bioavailable. They are insoluble in water, organic acids, dilute alkalis and most organic acids and these pigments have solubilities of less than 20 parts per billion (,ppb).

In addition, Antimony containing pigments present no acute or chronic health hazard to humans or the environment. The LD-50-values (rat oral) are in excess of 10,000 milligrams per killigrams (mg/kg). The estimated lethal dose for humans by oral route is one quart or more, (i.e., more than one kilogram pigment per 70 kg body weight). There is no existing evidence of significant toxicity resulting from exposure to CAT and NAT. Laboratory testing demonstrates that CAT and NAT do not produce acute toxic effects as a result of ingestion.

Evidence suggests that antimony will not bioaccumulate in the food chain. EPA and others have found that fish and other aquatic organisms have low antimony bioaccumulation. Other studies indicate low bioaccumulation in small mammals and sheep as well since the antimony was found to be tightly bound in the soil and unavailable.

Therefore, should a listing determination go forward, antimony should not be included as a constituent of concern.

(PMLP 00041. DuPont, page 16, w/attachments)

G. Risk targets

1. 10^{-}5 and HQ1

SUMMARY OF COMMENTS

The Agency received three comments, one from an association and two from industry on the use of a 10^{-}5 risk level and a human hazard quotient of 1. All three comments supported the Agency's use of these values.

VERBATIM COMMENTS

In the proposed rule, the Agency requested comments regarding the use of a risk level of IE-05 and human hazard quotient of 1 in its risk assessment for paint wastes. 66 Fed. Reg. at 10088. A risk level of IE-05 and human hazard quotient of I is appropriate in this situation, considering the conservatism inherent in the risk models, and is consistent with previous risk assessments the Agency has conducted for other hazardous waste listing determinations. In the inorganics listing proposed rule, EPA stated, "Usually, doses less than the RfD (HQ<1) are not likely to be associated with adverse health risks and therefore, are less likely to be of regulatory concern." 65 F.R 55695 (September 14, 2000).

(PMLP 00030. ACC, page 2)

Eastman supports the Agency's use of a risk level of 10^{-5} and a human hazard quotient (HQ) of 1. We also support use of the 90th percentile risk level, which aligns with EPA's own "Guidance For Risk Characterization" (USEPA, 1995) that states:

Conceptually, high end exposure means exposure above about the 90th percentile of the population distribution, but not higher than the individual in the population who has the highest exposure.

Given the conservative nature of the Agency's models and in the interest of consistency with past risk assessments, we believe these risk levels are appropriate.

(PMLP 00032. Eastman Chemical Co., page 10, 11)

DuPont concurs with the use of:

- A hazard quotient of 1
- A target risk level set at 10^{-5}

(PMLP 00041. DuPont, page 8, w/attachment)

H. Metal Kd values

1. MINTEQUE A2

SUMMARY OF COMMENT

The Agency received one comment from NMA on not using the MINTEQA2 model. NMA states that in deciding not to use the MINTEQA2 model, the Agency relied on a flawed paper by Norris and Hubbard that does not provide a sound scientific foundation for regulatory decision-making.

VERBATIM COMMENT

Rather, our concerns focus on the reasons EPA gives for not using the M1NTEQA2 model. The preamble states:

> EPA has sometimes used the MINTEQA2 equilibrium speciation model to estimate Kd's for a variety of metals rather than relying solely on field measurements. However, recently a number of technical issues have been raised concerning the model and its application. Id.

In a footnote, the preamble identifies the source of these "technical issues" as a 1999 paper prepared by C.H. Norris and C.E. Hubbard: "Use of MINTEQA2 and EPACMTP to Estimate Groundwater Pathway Risks from the Land Disposal of Metal-Bearing Wastes" (hereafter, the "Norris-Hubbard paper"). The paper was prepared for the Environmental Defense Fund (now Environmental Defense), Friends of the Earth, Hoosier Environmental Council, and Mineral Policy Center.

The Norris-Hubbard paper alleges that EPA's use of MINTEQA2 and EPACMTP to estimate groundwater pathway risks from metals results in underestimating those risks. The paper asserts that serious flaws in the model used by EPA to predict metals behavior in groundwater lead to underestimating

> the potential for dissolved metals, such as lead and cadmium, to reach receptor wells at unacceptable concentrations. These flaws have critical policy ramifications, as the model, known as the USEPA Composite Model for Leachate Migration with Transformation Products, or EPACMTP, is the basis for key decisions about which wastes should, and should not, be subjected to regulatory control.

Norris-Hubbard Paper at i.

The paper claims to have generated improved isotherms for use in EPA models, and the use of the new and improved isotherms was said to have "produced dramatic increases in the calculated risk from metals migration in groundwater." Id. The allegations and assertions made in the paper have potentially serious implications for various EPA regulatory actions, including those noted below.

The Norris-Hubbard paper was first submitted to EPA as part of the comments of the above groups on the agency's Regulatory Determination on Wastes from the Combustion of Fossil Fuels (65 FR 32214, May 22, 2000). It has since appeared in the agency's administrative record on the development of a draft "Guide for Industrial Waste Management" (Docket #F 1999-IDWA-FFFFF; see, e.g., 65 FR 59836, Oct. 6, 2000). NMA also believes that it was to the Norris-Hubbard paper that EPA referred in the preamble to the proposed rule on the listing of inorganic wastes:

> [EPA has previously] used the MINTEQA2 equilibrium model to estimate Kd's for a variety of metals rather than relying solely on field measurements. However, recently a number of technical issues have been raised concerning the model and its application. EPA is in the process of evaluating the model to address those issues. Therefore, we have decided not to use the M1NTEQA2 for today's proposed rule.

65 FR 55684, 55698 (Sept. 14, 2000)[1]

In each of the above regulatory proceedings, it has been shown that key assumptions and conclusions of the Norris-Hubbard paper are fundamentally wrong,[2] yet EPA has ignored those demonstrations. Indeed, it would appear from the proposed paint production wastes rule that, far from acknowledging the seriously flawed nature of the Norris-Hubbard paper, the agency has decided to base fundamental regulatory decisions on that decidedly defective document.

As the attached Gradient Corporation report[3] makes clear, the allegations and claims in the Norris-Hubbard paper generally lack a sound scientific foundation. The Norris-Hubbard paper proposed to make changes in three fundamental MLNTEQA2 components:

i. ferrous iron hydroxide surface area,

ii. composition of groundwater chemistry parameters, and

iii. including colloid transport.

Gradient's work shows, however, that "[t]he changes proposed by Norris and Hubbard yield isotherm results that are implausible." Gradient demonstrates that "there is no basis to drop the FeOx surface area by the over four orders of magnitude proposed by Norris and Hubbard, and that adopting their FeOx surface area yields adsorption coefficients for lead contradicted by hundreds of field measurements." The Norris-Hubbard paper's colloid analysis is based on a change in the value for iron chemistry, but Gradient demonstrates that the changed value is unsupported. As for colloid transport itself, while there may be theoretical justification for including such a component, Gradient points out that "there is insufficient experimental or other scientific information that can be used to support [the inclusion of] this mechanism in MIINTEQA2 at present." Moreover, "the proposed colloid component is a potentially significant consideration only if the FeOx surface area is also dropped by orders of magnitude, which we show to be entirely unfounded." Gradient Report at 17, 18.

Gradient's work clearly demonstrates that the Norris-Hubbard paper's criticism of the agency for allegedly underestimating risk from metals is unfounded.

In the agency's May 22, 2000, Regulatory Determination on fossil fuel combustion waste, EPA announced that it "expects to address the issues raised on the groundwater model and complete a comprehensive groundwater modeling effort." 65 FR 32223. The M1NTEQ component, EPA noted, "has been proposed for peer review." Id. at 32222. At that time, NMA made several requests of EPA concerning this peer review. [4]

NMA now renews its earlier request that the Gradient Report be included in the materials examined by those conducting the MINTEQ peer review. We also renew our request that EPA provide the public with full information on the peer review, including identification of those conducting that review, the schedule for review and the anticipated peer review completion date. Further, NMA again asks that EPA disclose its considerations and plans for addressing "the issues raised on the groundwater model" and completing "a comprehensive groundwater modeling effort."

As additional analysis of the Norris-Hubbard paper is completed, NMA will submit that information for the record in this rulemaking, as well as for the record in previous rulernakings referencing the Norris-Hubbard paper, and for use in the promised peer review.

In deciding not to employ the MINTEQA2 model in the paint production wastes proposal, the agency has relied on the fundamentally flawed Norris-Hubbard paper. That paper does not provide a sound scientific foundation for regulatory decision-making. Moreover, in relying on the Norris-Hubbard paper, EPA effectively ignores its earlier commitment to peer review of the M1NTEQA2 model.

It is deeply disappointing that in this proposed rule EPA relies on a technical paper in which so many key assumptions and conclusions lack validity. It is even more disappointing that the agency does so after the paper's flaws have been identified not once but several times within the past year. Whatever the pluses or minuses of the MINTEQA2 model may be, the Gradient Report clearly demonstrates that the Norris-Hubbard paper does not provide a sound basis for deciding not to employ the M1NTEQA2 model.

NMA appreciates the opportunity to submit these comments. Should there be any questions concerning these comments, please do not hesitate to contact the undersigned at 202/463-9782.

1 If this last wording seems familiar, that is because it is almost identical to the language in the paint production wastes proposal. See 66 FR 10097.

2 See e.g., September 19, 2000, NMA comments on EPA's "Notice of Regulatory Determination on Wastes from the Combustion of Fossil Fuels" (65 FR 32214, May 22, 2000); November 2, 2000, NMA comments on EPA's Draft "Guide for Industrial Waste Management"; November 13, 2000, NMA comments on EPA's proposed rule on "Inorganic Chemical Manufacturing Wastes" (65 FR 55684, Sept. 14, 2000).

3 The Gradient report, "Evaluation of the Norris and Hubbard Critique of theMLNTEQA2 and EPACMTP Models" (September, 2000)("Gradient Report"), is included as Attachment A to these comments. The Report was originally prepared for the American Coal Ash Association, American Forest and Paper Association, the Council of Industrial Boiler Owners, the Utihties Solid Waste Activities Group, the Lead Industries Association, and NMA.

4 See September 19, 2000, NMA comments on EPA's "Notice of Regulatory Determination on Wastes from the Combustion of Fossil Fuels" (65 FR 32214, May 22, 2000), page 10.

Attachment "Evaluation of the Norris and Hubbard Critique of the MINTEQA2 and EPACMTP Models"

(PMLP 00006. NMA, page 2, 3, 4, 5, w/attachments)

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2. Literature values

SUMMARY OF COMMENT

The Agency received a comment from NMA stating that they have no objection to the use of Kd values taken from field studies and published literature.

VERBATIM COMMENT

NMA and its members do not necessarily object to the use of Kd values taken from field studies and published literature.

(PMLP 0006. NMA, page 2, w/attachments)

I. Uncertainty

SUMMARY OF COMMENTS

The Agency received two comments, one from SIRC and one from DuPont on the uncertainty of the risk assessment. SIRC states that the inclusion of styrene is based solely on a concern with styrene occurring in the groundwater pathway. DuPont's concern is with the 1985 survey data used to develop the waste management and exposure scenario. In addition, DuPont stated that there are discrepancies with units in the risk assessment.

VERBATIM COMMENTS

- The Agency's proposed inclusion of styrene is based solely on a concern with styrene occurring in the groundwater pathway. This concern, however, is based on calculated risk-based concentration levels that were developed for a model storage and disposal scenario for which the Agency admits it has no supporting evidence and the model's projections conflict with the empirical evidence on styrene.

(PMLP 00029. SIRC, page 2)

DuPont is also concerned with quality of the document. The Agency used data from a 1985 survey of waste units as the basis for developing the waste management and subsequent exposure scenarios. DuPont contends that this data is largely outdated and leads to in appropriate conclusions about current practices. Further, a number of discrepancies have been noted with units in the body of the proposal, the Appendices and modeling requirements. DuPont strongly believes that the proposal requires a thorough review to ensure that all such errors have been corrected.

(PMLP 00041. DuPont, page 7, w/attachments)

VII. ECOLOGICAL RISK ASSESSMENT

As discussed above in Section VI (Human Health Risk Assessment), the Agency has determined not to list any of the paint production wastes as proposed. The Agency's decision regarding these wastes is not based on this aspect of this risk assessment, therefore, the Agency is not addressing the comments on the ecological risk assessment for paint production wastes at this time. The summary of comments and verbatim comments received on the ecological risk assessment for the proposed paint production waste listing determinations are provided below.

A. Eco receptors

SUMMARY OF COMMENT

The Agency received one comment from DuPont stating that they concur with the use of protection of ecological species at levels protective of human health.

VERBATIM COMMENT

DuPont concurs with the use of:

- Protection of ecological species at levels protective of human health

(PMLP 00041. DuPont, industry, page 8, w/attachments)

B. Methodology

SUMMARY OF COMMENT

The Agency received one comment from NAPPA stating that the surface water pathway was not accurately characterized and that site-specific stream and lake information should be used to estimate the ecological risk.

VERBATIM COMMENT

f. Surface Water Pathway Was Not Accurately Characterized

Surface waters for ecological risk assessment were modeled using a single representative stream with somewhat conservative characteristics of flow rate and size. Because the location of each waste management unit is known to the EPA, the size and location of adjacent surface waterbodies (streams and/or lakes) should also be readily known to the Agency. A more accurate estimate of ecological risk could be obtained by inclusion of site-specific stream and lake information.

(PMLP 00033. NPCA, association, page 17 w/attachments)

VIII. PROPOSED LISTING DETERMINATION

A. Constituents of concern (COC) and concentration levels

EPA received a number of comments on the proposed constituents of concern and their concentration levels. Below we provide a summary of comments followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not addressing all comments specific to constituent levels in these wastes. However, at the end of this section we respond to some of the issues raised and provide the rationale for our listing decisions.

SUMMARY OF COMMENTS

The Agency received nine comments, three from industry and six from associations on the proposed constituents of concern and their concentration levels. All of the commenters raised the point that the constituents of concern would not be found in paint production wastes at the levels of concern. Some commenters also indicated that wastes with many of the organic COCs are often managed as hazardous wastes, because many would be characteristically hazardous for ignitability or regulated under the existing solvents listings (F003 or F005). Other commenters stated that the COCs that are monomers (acrylamide, acrylonitrile, methyl methacrylate, formaldehyde and styrene) are only found as very low level constituents within resins eventually used in paint formulations. Commenters stated that information from surveys and other sources showed that the key monomers of concern (acrylamide, acrylonitrile, methyl methacrylate) are not present in paint resins at levels of concern. Several commenters stated that EPA overestimated the toxicity and environmental risk posed by pigments containing antimony and the use of such pigments in paint formulation. One commenter noted that, while antimony could be present in paint wastes, antimony pigments are probably less than 1% of the total pigment used within the industry. Another commenter noted generally that EPA should not define a waste listing based on a chemical constituent, unless EPA has real evidence that the compound is present in paint manufacturing waste at levels reasonably expected to pose risks.

VERBATIM COMMENTS

For the reasons discussed above, EPA should use the new draft health benchmark that EPA's toxicologists have developed for the MIBK IRIS entry. Assuming EPA does so, it is likely that the waste concentrations identified in the proposal will increase by three to four orders of magnitude. Under EPA's proposal, waste solids containing more than 73,000 mg/kg MIBK would be considered listed hazardous waste and would have to be managed accordingly under Subtitle C of

RCRA. Using the revised RfC, this value almost certainly will exceed 1,000,000 ppm (100 percent) MIBK. Accordingly, the waste solids listing should be removed. The waste liquids listing, in turn, also is likely to increase substantially, possibly exceeding 100 percent MIBK and almost certainly approaching 40 percent MIBK. The Panel believes that even these levels of MIBK are implausible.

As discussed in more detail below, MIBK has outstanding solvent properties and is widely used in the formation of high solids coatings. The basic principle of high solids coatings, of course, is that they use very little solvent as compared to the solids; typically, these coatings are 70 to 80 percent solid (or no more than 20 to 30 percent solvent). In some rare cases, the solvent concentration might range up to as high as approximately 40 percent, but it very rarely would exceed that level.

Moreover, when creating a paint or coating, formulators seek an appropriate "solvent balance." Solvents are used to dissolve the resins and retain them in solution until the coating is applied. After the coating is applied, the solvent evaporates into the air, leaving behind a hard, uniform finish. Typically, in an individual coating, a formulator will use a mix of solvents (often seven or eight) with a variety of evaporation rates. This mixture of solvents allows the formulator to manage the evaporation rate so that the paint or coating applies and dries evenly. (That is, the coating will contain some very quick evaporating solvents so that the paint applies evenly, and some slower evaporating solvents so that the coating does not dry so quickly as to render it unusable.) This practice of solvent mixing makes it extremely unlikely that MIBK would constitute more than 30 to 40 percent of a waste.

Moreover, in many formulations, aromatics or esters are used as the primary solvent because they are generally less expensive than ketones. As noted above, ketones are more likely to be used as the primary solvents in high solids coatings, where the amount of solvent generally does not exceed 30 percent.

Finally, there is no reason to believe that the mixing of various discrete paint wastes would cause the concentration of MIBK in the waste to exceed 40 percent. Even the mixing of several wastes that contain high amounts of MIBK - say 20 to 30 percent - will not itself result in a waste containing more than 40 percent MIBK.[10]

Accordingly, the Panel believes that after it reviews the modeling results for MIBK, the Agency should consider removing the listings for MIBK because it is very unlikely that any paint production waste solids would ever exceed 40 percent MIBK.

Yet even the current waste listings - which are overly conservative because they are based on outdated and inadequate health benchmarks - likely would not result in the management of any new wastes as hazardous. This is because even wastes containing a small amount of MIBK will be managed as hazardous based on ignitability.

MIBK is a flammable liquid, and is listed under RCRA based on ignitability. It has a tag closed cup flash point of 60°F, and liquids are considered ignitable under RCRA if they have a closed cup flash point of lower than 140°F (60°C).[11] When determining the flash point of solvent mixtures, however, one typically takes the flash point of the compound with the lowest flash point to be the flash point of the mixture. Accordingly, no matter how many different substances may be present in an MIBK-containing waste mixture, that mixture will have a flash point of at least 60°F (and possibly lower, depending on the other constituents) - and thus will be considered hazardous under RCRA.[12]

Accordingly, the vast majority of MIBK-containing wastes currently are managed as hazardous. EPA's addition of MIBK to the paint production wastes listing is highly unlikely to result in the creation of any new hazardous wastes. Because its listing serves no practical purpose, the Panel believes that the listing should be removed.[13]

10 MIBK is not used to any great extent in tank cleaning operations, primarily because of its relatively high cost as compared to other solvents. Accordingly, wastes from tank cleaning operations would not be expected to increase the overall concentration of MIBK in combined wastes, and more likely would decrease it.

11 40 C.F.R. 261.21(a)(1).

12 Indeed, one has to add a very large amount of water - perhaps as much as *75* percent water - to MIBK (which has low water solubility) before the MIBK will cease to be flammable.

13 Nonetheless, for the reasons described in more detail below, EPA's proposed regulation likely would expand the regulation of MIBK-containing wastes because, by adding MIBK to the Appendix VIII list of toxic compounds, EPA would make unavailable to MIBK-containing wastes the exemption from the mixture rule for ignitable wastes and the proposed corresponding exemption from the "derived from" rule.

(PMLP 00002. ACC Ketones Panel, page 6,7, w/attachments)

The proposed listing for K180 liquids includes constituents' acrylamide, acrylonitrile, methyl methacrylate, formaldehyde and styrene that are not found in paint wastes at the levels of concern, if at all. These are monomers or reactants used in resin manufacturing and, as such, are only found as very low level constituents within resins eventually used in paint formulations.

Methylene chloride is no longer used widely within the paint industry because of recognized health effects. Its presence in a liquid waste paint stream is highly unlikely. PPG has virtually eliminated the use of methylene chloride within its Coatings manufacturing operations, as have most other Coatings manufacturers.

The solvents of concern, ethylbenzene, methyl isobutyl ketone, n-butyl alcohol, toluene and xylene, are found in paint wastes, but are already regulated as D001 characteristic wastes and/or F003 or F005 listed wastes. It is possible that some paint wastes containing these solvents would not meet existing characteristic or listing criteria. However, these wastes with organics at the proposed levels would not be placed in a surface impoundment, but would more likely be fuels blended or incinerated.

Antimony could be present in paint wastes although antimony pigments are probably less than 1% of the total pigment used within the industry.

(PMLP 00003. PPG Industries, page 1)

The proposed listing for K179 solids includes constituents' acrylamide, acrylonitrile and methyl methacrylate that are not found in solid paint wastes at the levels of concern, if at all. These are monomers used to manufacture liquid resins (primarily) and would not normally end up in a solid paint waste stream.

Methyl isobutyl ketone at the level of concern, 7.3%, is not likely to show up in a solid waste. At this level it would probably be a D001 characteristic wastes. Baghouse dusts, one of the wastes of concern in this listing, typically have no solvents present at all.

As noted above, antimony pigments are used in paint manufacturing even though in very small amounts.

Based on the above comments, the K179 listing should be dropped.

(PMLP 00003. PPG Industries, page 2**)**

Butanol's low toxicity is evidenced by the fact that even using an overly conservative health benchmark and conservative modeling assumptions, EPA's risk assessment concluded that a waste liquid would have to exceed 41,000 ppm - and a waste solid could be essentially 100 percent n-butanol - before it could pose a risk to human health or the environment. Using a more appropriate health benchmark would only increase these already high values. Yet the Panel believes that it is unlikely that paint and coating wastes would contain such high levels of n-butanol.

Only a very small fraction of the n-butanol produced in the United States is used as a solvent for paint, coatings and varnishes. More than three-quarters of all butanol produced domestically is used as a chemical intermediate to produce acrylates (32 percent of U.S. production volume), glycol ethers (25 percent), butyl acetate (11 percent), plasticizers (4 percent), and other miscellaneous chemicals (5 percent). Approximately fifteen percent of U.S. domestic production is exported.[17] The remaining eight percent of the domestic production capacity of butanol is spread among a wide variety of uses, including as a solvent in paints, lacquers and varnishes - but also as a solvent in cosmetics, gums, dyes and cellophane; for the biological extraction of egg yolks, flavors, oils, antibiotics, hormones and vitamins; in automotive brake fluid, perfumes, rubber cement, fingernail basecoats, undercoats, polishes, enamels and their removers, degreasers, wood treatments, and ground cements; and as a flavoring agent in butter, cream, fruit, and alcoholic beverages. [18]

In other words, butanol is not particularly widely used as a solvent in paints and coatings production. The reason is two-fold. First, n-butanol is a relatively expensive solvent; there are several oxygenated solvents that are less expensive and companies generally prefer to use these less expensive solvents whenever possible. Second, not all resins can be successfully dissolved with butanol. While butanol is effective at dissolving alkyd resins, for example, it is less effective at dissolving certain other types of resins.

Even in those paints and coatings for which butanol is an effective solvent, however, the total solvent content will rarely exceed 40 percent, and the butanol content may be substantially less. Indeed, butanol rarely will be used as the sole solvent in a paint or coating. When creating a paint or coating, formulators seek an appropriate "solvent balance." Solvents are used to dissolve the resins and retain them in solution until the coating is applied. After the coating is applied, the solvent evaporates into the air, leaving behind a hard, uniform finish. Typically, in an individual coating, a formulator will use a mix of solvents (often seven or eight) with a variety of evaporation rates. This mixture of solvents allows the formulator to manage the evaporation rate so that the paint or coating applies and dries evenly. (That is, the coating will contain some very quick evaporating solvents so that the paint applies evenly, and some slower evaporating solvents so that the coating does not dry so quickly as to render it unusable.) This practice of solvent mixing makes it extremely unlikely that n-butanol would constitute a substantial percentage of a waste.

Finally, there is no reason to believe that the mixing of various discrete paint wastes would cause, the concentration of n-butanol in the waste to increase substantially. As noted above, butanol has selected, but not widespread, usage as a solvent in paints and coatings. The most likely scenario, therefore, is that paint production wastes containing butanol will be mixed with wastes containing other solvents, thus lowering - rather than increasing - the overall percentage of butanol in the waste.[19]

Accordingly, the Panel believes that after it reviews the modeling results for n-butanol, the Agency should consider removing the listings for n-butanol because it is very unlikely that any paint production waste solids would ever exceed a significant percentage of n-butanol.

Even the current waste liquids listing - which is overly conservative because it is based on an outdated and overly conservative health benchmark - likely would not result in the management of any new wastes as hazardous. This is because even wastes containing a small amount of n-butanol will be managed as hazardous based on ignitability.

Butanol is a flammable liquid, and is listed under RCRA based on ignitability. It has a tag closed cup flash point of 97°F, and liquids are considered ignitable under RCRA if they have a closed cup flash point of lower than 140°F (60°C).[20] When determining the flash point of solvent mixtures, however, one typically takes the flash point of the compound with the lowest flash point to be the flash point of the mixture. Accordingly, no matter how many different solvents may be present in an n-butanol-containing waste mixture, that mixture most likely will have a flash point of at least 97°F (and possibly lower, depending on the other constituents) - and thus will be considered hazardous under RCRA.[21]

Accordingly, the vast majority of n-butanol-containing wastes currently are managed as hazardous. EPA's addition of n-butanol to the paint production wastes listing is unlikely to result in the creation of any new hazardous wastes. Moreover, even in the absence of n-butanol-containing wastes being considered hazardous, companies typically incinerate the waste, using the waste heat for their industrial processes.[22] Because its listing serves no practical purpose, the Panel believes that the listing should be removed.[23]

17 See SIDS Profile for n-Butyl Alcohol, at p.6.

18 WHO, 1987.

19 Butanol is not used to any great extent in tank cleaning operations, primarily because of its relatively high cost as compared to other oxygenated solvents. Accordingly, wastes from tank cleaning operations would not be expected to increase the overall concentration of n-butanol in combined wastes, and more likely would decrease it.

20 40 C.F.R. § 261.21(a)(1).

21 Butanol can be made non-ignitable by adding a sufficient amount of water; however, it is not expected that many of these paint wastes will contain substantial amounts of water.

22 The Panel expects that a review of the Agency's data on individual facility waste management activities would confirm this practice.

23 Nonetheless, for the reasons described in more detail below, EPA's proposed regulation likely would expand the regulation of n-butanol-containing wastes because, by adding n-butanol to the Appendix VIII list of toxic compounds, EPA would make unavailable to n-butanol-containing wastes the exemption from the mixture rule for ignitable wastes and the proposed corresponding exemption from the "derived from" rule.

(PMLP 00011. ACC Oxo Process Panel, page 8, 9, 10, w/attachments)

First, methyl methacrylate ("MMA") should not be listed as a constituent of concern in paint waste, because MMA is not present in paint wastes at concentrations approaching the levels specified in the Proposed Rule, and as such, no paint waste would ever be regulated as "hazardous" due to the presence of MMA. The Proposed Rule would require paint wastes to be handled as RCRA hazardous wastes if MMA is present at levels over 28,000 ppm (2.8%) for solid paint wastes, and 2,100 ppm (0.21%) for liquid paint wastes. However, it is highly unlikely that MMA would be present at such concentrations in paint wastes. MMA is a liquid monomer added to paint as a binder that quickly "reacts out" to form other inert polymer compounds. Therefore, MMA is a production intermediate that is generally not present in paint wastes, except in trace amounts.

EPA has not identified any information in the record - and MPA is not aware of any such information - indicating that MMA would be present in liquid or solid paint wastes at or above the threshold concentrations. In fact, EPA's survey results in the record (PMLP-S0324) describe the levels of MMA in paint wastes as either "trace" or "<1%." (Three respondents reported MMA in off-spec paint at levels of 10 - 20%, but it is clear that these respondents were referring to polymerized MMA. not free MMA monomer. The survey questionnaire did not specify and did not allow respondents to distinguish between MMA and polymerized MMA.

One of the most comprehensive reviews of MMA toxicology is the European Union's Risk Assessment of MMA ("EU Risk Assessment'). The final draft of the EU Risk Assessment was just released on April 4, 2001, which results from a thorough peer review within Europe and by the OECD/SIAM11 in Orlando, Florida in January 2001. The EU Risk Assessment states (at page 14) that the residual MMA content in aqueous paint dispersions ranges from 0.005% to 0.05%, which is lower than the EPA's threshold concentration by one to two degrees of magnitude.

(PMLP 00016. MPA, page 4, 5, w/attachments)

The Proposed Rule is particularly inappropriate with respect to MMA in solid paint wastes. MMA is a liquid monomer that is used in the paint production process exclusively in its liquid form. Therefore, it is extremely unlikely, if not chemically impossible, for MMA to be present in solid paint waste at levels anywhere near the 2.8% concentration specified in the Proposed Rule. Solid residuals, if any, are more likely to be in the form of polymerized MMA, not free MMA monomer. Also, a large portion of the solid paint wastes EPA modeled in the Proposed Rule consist of emission control dust, which is generated from the adding of powdered pigments and other solid materials into the production process. Because MMA is not handled in a solid form and not added to the process in this way, it is inconceivable that MMA would be present in such dust. In fact, EPA's survey of 187 paint manufacturing facilities did not identify a single facility with emission control dust containing MMA.

In sum, paint wastes, liquid or solid, do not contain MMA at levels anywhere near the concentration levels specified in the Proposed Rule. EPA set these levels by ratcheting up the concentration of MMA in the risk assessment model until EPA reached a risk level it deemed unacceptable. But EPA has cited no evidence that supports the presumption that paint wastes might ever contain MMA at these levels. As such, listing MMA as a constituent of concern in this Proposed Rule is arbitrary and capricious as it is not supported in the record. The listing would serve no valid regulatory purpose, and would only impose on industry a burdensome and unnecessary obligation to test their wastes to confirm the obvious, that MMA is not present in concentrations over the trigger levels. The cost of this testing obligation would be particularly onerous for the many small and medium sized businesses in the paint industry. EPA should therefore remove MMA from the list of constituents under the Proposed Rule.

(PMLP 00016. MPA, page 6, 7, w/attachments)

The threshold question for EPA, and for those potentially affected by the proposal, is whether any credible evidence exists that paint manufacturing wastes contain any of the twelve compounds designated by EPA, at or above concentration levels that would cause the waste to be hazardous. In cases where an appropriately defined risk-based level is exceeded, a hazardous waste determination is appropriate. However, EPA should resist defining a waste listing based on a chemical constituent, unless the Agency has clear evidence, based on a real world assessment, that the compound is present in today's paint manufacturing waste at levels reasonably expected to pose a risk of harm to human health or the environment. Because these chemicals are among the cornerstones of modern manufacturing processes in a variety of industries, it is important for EPA to recognize that any hazardous waste designation for these chemicals will have ramifications far beyond the paint manufacturing industry.

According to EPA's analysis, neither acrylamide nor acrylonitrile monomers are widely used in paint formulations but are used to a limited degree. A survey of EPC member companies confirmed that these polymers are infrequently used. The results of the survey document a few acrylonitrile polymers are used in paint formulations and only one instance of an acrylamide polymer.

The EPC survey further reveals that the Agency incorrectly estimated the residual levels of acrylamide and acrylonitrile polymers used in the formulation of paint. In fact, the EPC survey shows that EPA mistakenly assumed that the residual levels in polymers was approximately two orders of magnitude greater than the levels actually found in such polymers.

In Section IV of the proposed rule, "Proposed Listing Determinations and Regulations" EPA states that, "unreacted acrylonitrile monomers, not their polymers, are the targeted constituents of concern" (66 Fed. Reg. 10102, 10106) EPA assessed the potential concentrations of acrylonitrile in paint manufacturing liquid waste streams in a three-step process, which involved tracking the monomers from point of origin (binder or polymer) to the final destination (liquid waste streams). These steps included:

1) estimating the concentration range of acrylonitrile monomers in the binder systems used to make paint;

2) estimating the volume percentage of the binder systems added into paints themselves; and,

3) estimating the monomer concentration in tank cleaning wastes.

According to the Preamble, EPA estimated the likely range of unreacted monomer of acrylonitrile in the binders *(i.e.,* polymers) to be between 20 and 1,000 ppm. EPA then projected the likely concentrations of the monomers in a paint or coating to be approximately 10 to 500 ppm based on an assumption that paint formulations contain up to 30-50% by weight binder.

EPA arrived at its final estimate of acrylonitrile monomer concentration in wastewater cleaning liquids based on an estimate of the amount of water needed to clean a typical paint mixing tank *(i.e., 5* feet in diameter, 8 feet in depth with a paint depth of 6 feet). (66 Fed. Reg. 10106 - 7) EPA then compared its 1-40 ppm derived estimates against its calculated risk-based values. For purposes of assessing tank emissions, EPA derived a risk-based level for acrylonitrile of 1,500 ppm, and as such concluded that it is "highly unlikely for this constituent to be present in paint manufacturing liquid waste stream at such levels." (66 Fed. Reg. 10106) However for its surface impoundment analysis, EPA derived a risk-based level of 9.3 ppm and as a result, decided to designate acrylonitrile in its proposed paint waste listing determination.

There are several major concerns with EPA's analysis. To begin with, EPA grossly overestimated the likely residual level of acrylonitrile in paint manufacturing waste. EPA's estimate that unreacted acrylonitrile monomer could be as high as 1,000 ppm was based on the analysis in the memorandum from Paul Danault of Dynamac to Carver and Jenkins at EPA and a Material Safety Data Sheet (MSDS) from Rohm and Haas.

Attached as Appendix A to these comment, is a product information letter that Rohm and Haas supplies to its customers clearly stating that all of their acrylonitrile-based products "are controlled to less than 10 ppm AN (acrylonitrile) residual monomer." The <0.1% (1000 ppm) residual level specified on the MSDS, is based on the OSHA Hazard Communication standard that requires listing individual carcinogenic constituents if they are present at greater than 0.1% . If acrylonitrile were present at 0.1 % or greater, Rohm and Haas would be required to list the compound on their MSDS. A careful review of the MSDS shows that acrylonitrile is not identified in the ingredient sections. To comply with the Hazard Communication standard, Rohm and Haas merely reflect on the MSDS that the residual levels for any of the monomers present are less than 1000 ppm. The fact that Rohm and Haas identifies acrylonitrile in the California Proposition 65 section of their MSDS is a reflection of the warning provisions of that law. In fact, the Rohm and Haas MSDS clearly states that the product contains "trace levels," which for a regulated carcinogen, would assuredly be significantly less than the Hazard Communication level of 1000 ppm.

This very low residual level is confirmed in a confidential survey conducted of the member companies of the EPC. Each of the EPC member companies was asked to identify the maximum residual level for any product sold for formulating paint. One company reported a maximum residual level of 25 ppm; all other companies reported a maximum specification of 10 ppm.

It is relevant to note that the EPC survey results and the Rohm and Haas MSDS, provide an estimated concentration for acrylonitrile in polymers that is reasonably close to the estimate provided in the September 6 Paul Denault memorandum where he states that:

> *the concentration of residual (unreacted) monomer is likely no less than 1-5 ppm and no more than 100 ppm in the polymer or co-polymer (paint binder constituent) and somewhat lower b) dilution in the paint formulation (from Dr. Victor Meyer).*

As already noted, EPC believes that the likely residual concentration for acrylonitrile is less than 25 ppm. Relying on this estimate, and using all other EPA assumptions results in an estimated residual concentration in the wastewater of 1.0 ppm rather than 40 ppm. Even assuming a 100 ppm starting concentration, the residual wastewater level would be 4 ppm, again less than the 9.3 ppm risk-based value derived by EPA. When appropriate consideration is given to biodegradation (as discussed in Appendix B), EPA should conclude there is little basis for concern over acrylonitrile.

EPA's erroneous conclusion that residual acrylamide monomers may be found in binders used in paint formulation relies on an incomplete analysis of the technical literature. In the memorandum from Paul Denault to Dave Carver,[3] reference is made to the textbook, *Introduction to Paint Chemistry and Principles of Paint Technology* (Bentley and Turner, Chapman & Hall, 1998, p. 193, attached). The memo's author cites examples of acrylamide *polymer* constituent concentrations (% by weight) as follows:

- Styrene polymer 82.5%, acrylamide polymer 15%, methacrylic acid polymer 92.5%
- Styrene polymer 38.5%, ethyl acrylate polymer 44%, acrylamide polymer15%

- Methyl methacrylate polymer 25%, ethyl acrylate polymer 60%, acrylamide polymer 15%

A review of the original source book reveals that the terms *polymer* or *co-polymer* are not used in describing these formulations. Rather, the technical text refers to the formulations as “typical resin recipes.”

The memorandum also fails to mention that the monomer recipes are prior to reaction with formaldehyde. When acrylamide is reacted with formaldehyde, it is converted to n-methylolacrylamide (NMA) and as such the polymers described in the Chapman and Hall textbook are more likely NMA polymers and not acrylamide polymers. Without reaction with formaldehyde, acrylamide has limited “cross-linking capacity.”

A survey of EPC members reveals one, very limited instance of an acrylamide polymer sold as a binder for use in making paint formulations. That company has further specified that the maximum residual specification for acrylamide in the product is 25 ppm and the product typically contains lower residual levels.

Applying the same assumptions to acrylamide that EPA used to estimate residual levels of acrylonitrile, would predict a 1 ppm residual level in waste liquids - an order of magnitude less than the EPA derived risk-based level of 12 ppm.

3 not listed in text. Dynamac assumes it is reference 1(“Use of acrylamide and acrylonitrile containing constituents in paint formulations,” memorandum from Dave Carver to Paul Denault, September 6, 2000).

(PMLP 00017. EPC, page 4, 5, 9, 10, 11, 12, w/attachments)

The inclusion of specific monomers in the rule making is inappropriate. Data reported by the industry for polymers was incorrectly interpreted as monomer data. Trace residuals of monomers are present in many polymers. However, these residual quantities are many orders of magnitude lower than the concentration based limits proposed by EPA. Inclusion in the rule making adds significant burden (testing requirements, etc) without adding benefit.

(PMLP 00024. Akzo Nobel, page 2)

All but the biocides are polymeric materials. Many of these emulsions either can not be produced without the regulated substances, or possess properties that cannot be readily obtained if the regulated substances are reduced or eliminated. Since a polymerization reaction cannot be driven to 100 percent completion, residual monomer is present at some low level in the emulsion products supplied by Rohm and Haas. Monomers included in Tables IV.A-1 and IV.A-2, 66 FR 10104 are used and are present in the final product.

(PMLP 00031. Rohm and Haas, page 3)

NPCA believes that if EPA had properly examined the actual constituents of the industry's waste streams, it would have identified far fewer COCs (if any) in the rulemaking. As a result, NPCA believes that the rulemaking fails to meet one of the essential criteria of agency rulemakings of this nature -that the rulemaking has a realistic and reasonable relationship to the facts of the industry that is being regulated.

In addition, NPCA believes that the RCRA 3007 ICR questions also lead to the monomers being mistakenly added to the rulemaking. Specifically, NPCA is very concerned that this methodology caused the following chemicals to be mistakenly included:

- Acrylamide
- Acrylonitrile
- Formaldehyde
- Methyl Methacrylate

The key chemicals of concern are the monomers at residual amounts present in the polymers used by our industry. Since unreacted monomers are present in polymers at such low concentrations, the polymers should not be of concern.

The primary problem with the RCRA 3007 ICR is that EPA asked if either the monomer (Acrylamide for example) or the polymer (Acrylamide derived polymers for example) was present in the wastes. If EPA had asked the paint industry if monomers alone were present in paint production wastes, much lower values would have been reported. However, polymers are used extensively throughout the paint production industry, and polymers comprise a majority of many paints. The question was phrased such that in answering it the responder could not distinguish between the polymer and monomer aspects -many facilities by correctly indicating that the polymer was present in many of paint production wastes also provided an answer that, through no fault of their own, allows for the incorrect inference that there are substantial monomer residuals as well.

Mistakenly, EPA used the affirmative answers to confirm the presence of polymer residuals to infer the presence of large volumes of monomer residuals as well and this erroneous information was used in its risk assessment models. As a result, the monomers were added to the rulemaking as constituents of concern, despite the fact that standing by themselves they do not warrant such a listing. By erroneously concluding that the industry generates large volumes of monomer residuals in its waste streams, EPA overestimated the risk associated with the monomers by many orders of magnitude, therefore EPA should drop the above listed monomers from the rulemaking.

While the constituents of concern (especially monomers) included in this rulemaking are unlikely to be present, if at all, at concentrations below the proposed concentration based listing levels, the paint manufacturing industry will be forced to complete unnecessary and burdensome analytical procedures to prove that waste constituents are well below EPA's concentration based listing levels. If EPA had properly characterized paint production wastes these constituents would have only shown up, if at all, at very low concentrations and would not therefore be added to the listing. After reviewing the RCRA Section 3007 database, NPCA believes that EPA has no basis for including Acrylamide, Acrylonitrile, Formaldehyde, Methyl Methacrylate, and Styrene in the rulemaking, as they are unlikely to be present at the levels of concern in the Proposed Rule.

NPCA concurs with the Emulsion Polymers Council, Inc. (EPC) comments (hereby incorporated by reference) which indicate that EPA substantially overestimated the concentration of Acrylonitrile and acrylamide in paint manufacturing wastes and therefore Acrylonitrile and Acrylamide should be removed from the listing.

NPCA believes that EPA overestimated the concentration of Acrylonitrile monomers in polymers, paints and paint manufacturing waste and therefore should remove Acrylonitrile from the listing.

The only information that EPA used to estimate the concentration of Acrylonitrile in polymers, paints and paint manufacturing waste were two Material Safety Data Sheets (MSDS's) from the Rohm & Haas Company on the use of Acrylamide and Acrylonitrile containing constituents in paint formulations.[47] EPA arbitrarily estimated the likely range of unreacted monomer of Acrylonitrile in the polymer to be between 20 ppm and 1,000 ppm. It is important to note that the Rohm and Haas MSDS's state that the total concentration of residual monomer[s] had a maximum concentration of 0.1% (or 1,000 ppm), yet EPA arbitrarily assumed that this meant that the only residual monomer was Acrylonitrile. Further the Rohm and Haas Company has confirmed that the Acrylonitrile levels in polymers are in fact 10 ppm or less.

Based on EPA's calculations if the Acrylonitrile concentrations in polymers were 10 ppm, the maximum Acrylonitrile concentrations in paints and paint production solids would be *5* ppm, and the maximum concentration in paint production liquids would be 0.4 ppm.

It is important to note that EPA dropped constituents from the listing if their levels are unlikely to exist in paint wastes at the calculated risked-based levels. The proposed listing concentrations for Acrylonitrile are 43 mg/kg for paint production solids and 9.3 mg/kg for paint production liquids. Because the actual maximum concentrations of Acrylonitrile are in fact at least an order of magnitude less than the risk based concentrations, EPA should drop Acrylonitrile from the listing.

NPCA believes that there is no evidence of any Acrylamide-based polymer used in the manufacture of paint, but instead N-Methylolacrylamide (NMA) may be used instead which has a much lower toxicity than Acrylamide, therefore Acrylamide should be removed from the listing.

EPA assumed that the level of residual acrylamide monomer in polymers is five times lower than that of Acrylonitrile monomer. As mentioned above the actual maximum concentration of Acrylonitrile monomer in polymers is 10 ppm, therefore the maximum concentration of Acrylamide monomers in polymers is 2 ppm, 1 ppm in paint and paint production solids, and 0.1 ppm in paint production liquids. The proposed listing concentrations for Acrylamide are 310 mg/kg for paint production solids and 12 mg/kg for paint production liquids. Because the actual maximum concentrations of Acrylamide are in fact as much as three orders of magnitude less than the risk based concentrations, EPA should drop Acrylamide from the listing.

There were no non-hazardous waste residuals containing Methylene Chloride, therefore it should be removed. As stated previously, EPA failed to consider the OSHA regulation limiting the PEL for Methylene Chloride. This regulation has significantly reduced, if not eliminated entirely, the use of this constituent as a raw material in paint. Even EPA noted that paint manufactures have moved away from using chlorinated solvents in paints and they indicated that the RCRA 3007 ICR showed that the presence of Methylene Chloride was not reported by any facility in non-hazardous waste.[48] Despite this documentation, EPA arbitrarily listed Methylene Chloride in the Proposed Rule.

Clearly, therefore, EPA based the addition of these constituents in the Proposed Rule on speculation and hypothesis, and not factual data showing that these COCs are typical in paint wastes or the extent to which they are found in paint waste. Had EPA taken actual samples or analyzed information available to them appropriately, these COCs would not have been listed in the Proposed Rule. Should any hazardous waste determination go forward over NPCA objections, these COCs should not be part of any final rule.

47 "Memo from Paul Denault of Dynamac Corporation to David Carver of EPA," (Sept. 6. 2000).

48 66 Fed. Reg. 10103 (Feb. 13, 2001).

(PMLP 00033. NPCA, page 26, 27, 28, 29, w/attachments)

NPCA fully concurs with the Methacrylate Producers Association, Inc. (MPA) comments (hereby incorporated by reference) in which MPA states that no paints or paint manufacturing wastes contain Methyl Methacrylate at the proposed risk-based levels. In fact, the MPA states that residual content in aqueous paint dispersions ranges from 0.005% to 0.05%, which is lower than EPA's risked based standards by as much as two order's of magnitude. Methyl Methacrylate also degrades quickly and does not bioaccumulate in the environment and does not pose a significant risk to human health or the environment since EPA and others have determined that Methyl Methacrylate does not have any carcinogenic or other serious toxicological effects even at levels substantially exceeding the concentrations specified in the Proposed Rule. Therefore the Proposed Rule would serve no valid regulatory purpose and would only impose on industry a needless obligation to test their paint wastes for Methyl Methacrylate. EPA should therefore remove Methyl Methacrylate from the list of constituents that would trigger regulation under the Proposed Rule, should any hazardous waste listing determination go forward despite NPCA objection.

NPCA fully concurs with the Styrene Information and Research Center, Inc. (SIRC) comments (hereby incorporated by reference) in which SIRC states that because of Styrene's physicochemical and biodegradation properties, coupled with extensive groundwater monitoring, that Styrene is not expected to be present in paint production wastes, or expected to be present at or near the Proposed Rule's level of concern. Therefore, EPA should not list styrene as a hazardous COC in any final hazardous waste listing determination, should any hazardous waste listing determination be made over NPCA objections.

(PMLP 00033. NPCA, page 30, w/attachments)

NPCA notes that most of the organic constituents, which form the basis of EPA's proposed listing for paint manufacturing liquids have individual flash points less than 100 degrees F. Based upon solubility data contained in the Risk Assessment Background Document, NPCA also notes that the concentration-based listing levels for Ethyl Benzene, Styrene, Toluene and Xylenes range from approximately two to sixty-five times the individual solubility limits of these constituents in water. As a result of these observations, NPCA conducted phase equilibria modeling to estimate the aqueous solubility of a mixture containing the solvent constituents forming the basis of the proposed K180 listing (except methylene chloride) at 25 degrees C and 1 bar using the proposed listing levels as the estimated concentrations. This modeling predicted that the given mixture would phase separate into an aqueous and organic liquid phase at 25 degrees C and 1 bar. The organic phase would comprise an estimated 1.9% of the total mass.

The individual flash points for the constituents comprising the basis of the proposed K180 listing, coupled with the above results, suggest to NPCA the reasonable potential that the modeled aqueous mixture would exhibit the characteristic of ignitability. Moreover, our knowledge of the exacting formulas followed to produce paints and coatings suggests that these solvents reasonably could be expected to co-occur in aqueous wastes, which served as our basis for conducting the modeling in the manner we did.

Therefore, prior to moving forward with any final decision to list paint manufacturing waste liquids as hazardous, NPCA respectfully requests that EPA fully evaluate whether or not the ignitability characteristic is adequately protective of the potential risks associated with said wastes.

As EPA is well aware, proper hazardous waste identification is essential to the success of the hazardous waste management program. To this end, NPCA believes further clarification is needed regarding the proper identification of wastes similar to those described in the listing for K180 that are currently subject to hazardous waste regulation because they are either listed (i.e., as F001-F005 spent solvents) or exhibit a characteristic of hazardous waste. Specifically, if a paint manufacturing liquid waste is currently identified as a listed spent solvent (i.e., as F001-F005 spent solvents) or exhibits a characteristic of hazardous waste, but then is determined to meet or exceed one or more of the concentration-based listing levels for K180, is the waste properly identified as K180, or K180 and any previously applicable spent solvent listing code? For purposes of compliance with the land disposal restrictions, a similar question arises with regard to whether or not the waste would need to be identified by both K180 and any applicable characteristic code, particularly EPA hazardous waste no. D002 when caustic is used as the cleaning agent. Likewise, but perhaps less complicated, questions arise in the opposite case where the wastes do not exceed the concentration-based listing levels for K180 or are managed in compliance with a conditional exemption from the K180 listing.

The RCRA regulations at 40 CFR 262.11 require that any person who produces or generates a solid waste must determine if that waste is hazardous following a three-step process. First, the generator must determine if the solid waste is excluded from regulation under 261.4. Second, if the waste is not excluded, the generator must determine if the waste is listed in Subpart D of Part 261. Third, for purposes of compliance with the land disposal restrictions or if the waste is not listed, the generator must determine if the waste exhibits any one or more hazardous waste characteristics in Subpart C of Part 261.

Intuitively, when determining if a solid waste is listed in Subpart D of Part 261, generators similarly follow another three-step process. First, the generator must determine if the waste has been used. If the waste has not been used, the generator then determines whether or not its waste is specifically listed in 261.33(e) or (f). Second, if the waste has been used, the generator then determines whether or not its waste is specifically listed in 261.32 (i.e., the K list). Third, if the waste has been used and is not specifically listed in 261.32, the generator then determines if its waste is included within the list of wastes from non-specific sources in 261.31 (i.e., the F list). This intuitive process would seem to imply that, because the listings in 261.32 are more specific, that the listings in 261.32 (i.e., the K list) may take some precedence over the listings in 261.31 (i.e., the F list).

NPCA notes that a listing similar to K180 currently exists in 261.32 for solvent, water and/or caustic cleaning wastes from ink formulation (EPA hazardous waste no. K086). NPCA is also aware of previous guidance provided by EPA in response to requests for clarification on classifying K086 solvent washes and sludges and their sole reliance on a footnote contained in a January 12, 1981 listing background document. On the other hand, NPCA has not noted any similar discussion of the issues outlined above in the preamble or related background documents regarding EPA's proposal to list paint manufacturing waste liquids (K180).

Moreover, NPCA also notes several, and perhaps significant, differences between EPA's proposal to list paint manufacturing waste liquids and K086. First, as described in the January 12, 1981 listing background document, the K086 listing does not address toxic organic substances in the waste, whereas the proposed listing for K180 has addressed the presence of both toxic and non-toxic solvents in the waste. Second, the generic K086 listing was based principally on the observed concentrations of lead and chrome and related health affects data, whereas the proposed concentration-based listing for K180 is based upon a detailed risk assessment. Third, the results of the risk assessment indicated that for many of the inorganic and organic constituents modeled the existing TC is more protective or the level determined to present a potential risk was above the level of the constituent reasonably expected to be present in the waste. Where it was unknown as to whether a particular inorganic or organic constituent was reasonably expected to be present in the waste at a level that present a potential threat, EPA has proposed to include that constituent within the basis of its proposed concentration-based listing.

Regardless, it is evident that no clear answer to issues raised above presently exists. Consequently, NPCA respectfully requests that EPA provide definitive guidance as part of any final rule listing paint manufacturing waste liquids as hazardous, both in the preamble and response to comments document, should a hazardous waste listing determination be promulgated despite NPCA's objections.

(PMLP 00033. NPCA, page 49, 50, 51, w/attachments)

Notwithstanding NAPPA's agreement in principle with EPA's approach in this proposed rule, NAPPA believes acrylamide has been erroneously included as a potentially hazardous constituent of paint waste. EPA's mistaken conclusion that residual acrylamide monomers may be found in polymer binders used in paint formulation derives from two sources: expert opinion sought by the Agency and the results of an EPA survey of paint formulators.

In large part, NAPPA believes EPA has been misled by its reliance on an incomplete analysis of the technical literature relating to acrylamide polymer chemistry provided by its expert consultants. In a September 6, 2000 memorandum from Paul Denault [2] to Dave Carver, reference is made to a textbook, *Introduction to Paint Chemistry and Principles of Paint Technology* (Bentley and Turner, Chapman & Hall, 1998, p. 3) which the author claims identifies examples of acrylamide polymers as follows:

- Styrene polymer 82.5%, acrylamide polymer 15%, methacrylic acid polymer 92.5%
- Styrene polymer 38.5%, ethyl acrylate polymer 44%, acrylamide polymer 15%
- Methyl methacrylate polymer 25%, ethyl acrylate polymer 60%, acrylamide polymer 15%

This description is an inaccurate reflection of the text on which it relies. First, as drafted, the memorandum suggests that the various formulations are a combination of several *polymers.* In fact, a review of the original source book reveals that the terms *polymer* or *co-polymer* are not used in describing these formulations. Rather, the technical text refers to the formulations as "typical resin recipes (before reaction with formaldehyde)." These "recipes" represent the monomers used in formulating the polymer.

More importantly, the memorandum fails to mention the reaction step with formaldehyde which takes place prior to polymerization. This chemical reaction step is crucial in order for the material to have cross-linking capabilities. The Chapman and Hall textbook explains that to provide the necessary binding capacity, the polymer binders must demonstrate a "cross-linking mechanism." When acrylamide is reacted with formaldehyde, it is converted to n-methylolacrylamide (NMA) which has the necessary cross-linking functionality. Without reaction with formaldehyde, acrylamide generally does not have adequate cross-linking capacity.

The other source of information is EPA's survey of paint manufacturers which found that four companies representing six facilities responded affirmatively to managing solid and liquid paint wastes containing acrylamide. (66 Fed. Reg. 10107) This is a curious outcome as NAPPA members are unaware of any circumstance in which acrylamide-based polymers are sold as binders for use in making paint formulations.

Several alternative explanations for the survey reports of acrylamide in paint facility wastes are plausible. It is possible that respondents were in fact describing NMA-based polymers but identified acrylamide on the survey form knowing that acrylamide is used in the manufacture of NMA, and that NMA was not on EPA's list of chemicals covered by the survey. It is also conceivable that the facilities may be using acrylamide products in non-paint applications, that could have caused acrylamide to be present in the facility's waste. Whatever the source of the acrylamide survey reports, NAPPA remains confident that there is little, if any acrylamide polymers used in paint formulations.

1 See, Memorandum from Paul Denault to Dave Carver and Cate Jenkins, “Use of acrylamide and acrylonitrile containing constituents in paint formulations,” September 6, 2000.

2 not listed in comment; should be 1

NAPPA believes that EPA’s own analysis shows that acrylamide monomers could not be present at the levels of concern defined by EPA. For purposes of this discussion, assume that acrylamide polymers are used in paint formulation. According to the Paul Denault memorandum, acrylamide is expected to be five times more reactive than acrylonitrile and therefore, the residual concentration of acrylamide is expected to be present at 1/5th the concentration of acrylonitrile monomers. The Denault memo presents a three-step process to arrive at a worst-case estimate of 40 ppm acrylonitrile in wastewater from cleaning paint tanks. (66 Fed. Reg. 10106). If acrylamide is expected to be present at 1/5 th the acrylonitrile concentration in wastewater, then it would be found at 1/5th of 40 ppm or 8 ppm. Since EPA’s risk-based regulatory level for acrylamide in liquids is 12 ppm, and EPA’s own worst-case analysis predicts 8 ppm, this analysis alone should persuade EPA that wastes should not contain a level of acrylamide that would cause concern.

However, this worst case analysis is not plausible. As already noted, NAPPA members are not aware of any acrylamide polymers used as binder in paint formulations. NAPPA is, however, aware that a survey of the Emulsion Polymers Council identified one manufacturer reporting limited use of an acrylamide polymer as a paint formulation binder. While NAPPA seriously questions the accuracy of this information, it is significant to note that the polymer manufacturer reporting the acrylamide polymer binder, also indicated that the product has a maximum residual acrylamide specification of 25 ppm. Assuming again for arguments sake, that such a polymer is used in paint formulations, and applying EPA’s three-step analysis, the worst-case estimate for acrylamide would be 1 ppm - significantly below EPA’s risk-based level.

As the next section will discuss, when a reasonable approach to biodegradation is taken into account, the level of concern for acrylamide in any wastestream becomes vanishingly small, if detectable at all.

(PMLP 00034. NAPPA, page 3, 4, 5, 6, w/attachments)

NAPPA believes there is more than enough justification, based on the fact that acrylamide is not used in paint formulation, to justify excluding acrylamide from this rule altogether. It is NAPPA’s expert opinion that acrylamide polymers are not used in paint formulation. Even assuming, as EPA does, that acrylamide polymers are used, the residual level of acrylamide would be present at levels below the risk-based levels defined by EPA.

When these risk levels are adjusted to reflect the biodegradation of acrylamide in groundwater, there is simply no basis for concern. Accordingly, EPA should delete acrylamide from further consideration in this rule.

(PMLP 00034. NAPPA, page 8, 9)

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In the preamble to the proposed rule, the EPA seeks comments and supporting information with respect to the proposed K179 and K180 list of constituents and the levels at which they are likely to appear in paint wastes. 66 FR 10103 (Feb. 13, 2001). In response, and in light of the analytical challenges described elsewhere in these comments, DuPont has reviewed the formulations for some of its highest volume paints and coatings opposite the list of organic constituents of concern for K179 and K180. Our findings are summarized in the tables below for two types of OEM water-based liquid coatings we produce: waterborne paint and e-coatings. We are not, however, providing similar information for powder coatings that we produce because we can categorically state that none of our powder coatings contains any of the K179 constituents of concern at or near any of the proposed regulatory levels.

DuPont believes that the information below reasonably supports an EPA decision to remove the monomers (i.e., acrylamide, acrylonitrile, formaldehyde, methyl methacrylate and styrene) from the list of constituents of concern for both K179 and K180. Moreover, DuPont believes that this information also reasonably supports a conclusion to remove several solvents from the lists of constituents of concern (e.g., ethyl benzene, methylene chloride and n-butyl alcohol).

Based upon process knowledge, DuPont estimates that the levels of above constituents in wash waters would be approximately 15-35% of the estimated average concentrations listed in the tables below. DuPont does not currently generate any separate caustic cleaning wastes.

Waterborne Paint

Constituent	K179 Regulatory Level (mg/Kg)	K180 Regulatory Level (mg/Kg)	Estimated Average Concentration (mg/Kg)
Acrylamide	310	12	Not Applicable
Acrylonitrile	43	9.3	Not Applicable
Methylene Chloride		4500	Not Applicable
Ethyl Benzene		11,000	3,800
Formaldehyde		82,000	220
Methyl Isobutyl Ketone	73,000	340	Not Applicable
Methyl Methacrylate	28,000	2,100	220
n-Butyl Alcohol		41,000	9,910
Styrene		4,600	145
Toluene		1,200	7,510
Xylenes		3,900	17,300

E-Coatings

Constituent	K179 Regulatory Level (mg/Kg)	K180 Regulatory Level (mg/Kg)	Estimated Average Concentration (mg/Kg)
Acrylamide	310	12	Not Applicable
Acrylonitrile	43	9.3	Not Applicable
Methylene Chloride		4500	Not Applicable
Ethyl Benzene		11,000	Not Applicable
Formaldehyde		82,000	Not Applicable
Methyl Isobutyl Ketone	73,000	340	2,020
Methyl Methacrylate	28,000	2,100	Not Applicable
n-Butyl Alcohol		41,000	610
Styrene		4,600	Not Applicable
Toluene		1,200	Not Applicable
Xylenes		3,900	Not Applicable

(PMLP 00041. DuPont, page 14, 15, w/attachments)

As part of the SDWA rulemaking in which EPA established the MCL for styrene, the agency concluded that styrene was not expected to occur in drinking water supplies.[12] The agency's conclusion rested on extensive monitoring data and research demonstrating that there is little or no positive occurrence data for styrene in drinking water.[13]

EPA's analysis of drinking water samples in New Jersey and California found that none contained styrene.[14] One study has reported an extremely low level of styrene of 0.00024 mg/l.[15] The California Department of Health Services also maintains a drinking water database that includes styrene. The state's Office of Drinking Water tests 19,000 sources of drinking water statewide. All major sources have been tested at least once for styrene. Since 1984, 15,712 samples from 5,157 sources have been tested for styrene. Only one test resulted in detection of styrene. It was a 1994 test in Modesto showing styrene at the detect level of 0.005 mg/l.[16] EPA reports styrene concentrations in surface water at very low levels (0.0001 mg/l).[17]

As best we can determine, styrene is rarely among the detected contaminants at Superfund sites. In a study by A.T. Kearney, there were no data found to indicate that styrene contamination in ground water has been observed at operating solid waste disposal facilities.[18] As Professor Alexander concluded, "the concentrations of styrene in surface and groundwaters are either extremely low or none is present.[19]

12 Id.

13 Alexander 1990. EPA 1987.

14 Id.

15 Miller, R. *et al.* Styrene Production, Use and Human Exposure, Crit. Rev. Toxicol. 24:51-510 (1994) (hereinafter "Miller 1994").

16 Leacox, Daniel. Summary of Styrene Standards, Determinations & Measurements in California (August 29, 1995).

17 EPA 1987; Miller 1994.

18 Keamey, A.T. Impact Analysis of the EPA Office of Drinking Water Proposal to Regulate Styrene (August 1989).

19 Alexander 1997.

(PMLP 00029. SIRC, page 3, 4)

The list of regulated constituents for both of these proposed wastes includes the element antimony. In waste solids antimony is listed at a concentration of 2,300 mg/kg and in waste liquids from paint manufacturing antimony is regulated at 390 mg/kg. Additionally, in the preamble discussion at Table III.E-2-Constituents Modeled for Risk Assessment EPA states that antimony was analyzed in paint wastes based on the assumption that antimony is present in the paint waste as a pigment.

Based on our understanding of the highly specialized pigments which contain antimony, EPA has both over-estimated the toxicity and environmental risk posed by pigments containing antimony and overestimated the use of such pigments in paint formulations.

The only color pigments which incorporate antimony are complex inorganic color pigments. The two most important pigments in terms of production which contain antimony are chrome antimony titanate ('CAT") and nickel antimony titanate ("NAT"). CAT and NAT pigments are extremely stable colorants which are considered premium pigments used only in selective paints and plastics, as well as construction materials such as siding. These pigments are used exclusively in situations where very harsh climates or very high heat stability are required. Some of these uses include vinyl siding, commercial outdoor paints and high temperature engineering plastics.

Like all complex inorganic color pigments. CAT and NAT are manufactured on an individual batch basis. The following discussion of the chemical and physical properties of CAT and NAT will make clear that:

(1) These pigments are relatively expensive to make on an individual batch basis and are only used in the most demanding circumstances. As a result these pigments are not likely to be a significant source of antimony.

(2) The antimony incorporated in CAT and NAT pigments is not in any way

bioavailable. Indeed, these pigments have specifically been tested in combustion tests and found to be unchanged through incineration processes. Therefore, antimony from CAT and NAT pigments is not liberated in the management of solid waste by any common method of managing such waste.

(PMLP 00010. CPMA, pp.1-2)

The source of Antimony in paint formulations is in pigments. NPCA fully concurs with the Color Pigments Manufacturing Association's (CPMA) comments (hereby incorporated by reference) in which CPMA states that EPA has both over-estimated the toxicity and environmental risk posed by pigments containing antimony and the use of such pigments in paint formulation. Based on these comments EPA should drop antimony as a COC.

(PMLP 00033. NPCA, p. 29 w/attachments)

AOIA believes that this health benchmark is scientifically inappropriate for antimony trioxide, which is the antimony compound used in paint formulations. Antimony potassium tartrate is not used in paint formulations, and is a very different compound with a much greater solubility and consequently greater oral toxicity. A recently published 90-day oral study of antimony trioxide in rats demonstrates the lower oral toxicity of antimony oxide. As a matter of good science, EPA should use this more recent data to reevaluate the potential hazard of antimony trioxide in paint production wastes. Indeed, EPA may not lawfully rely on the IRIS value without considering this more recent, published information about antimony trioxide.

Information concerning the recent 90-day study of antimony trioxide was provided to EPA's Office of Solid Waste in October and November, 2000. Copies of these previous comments are attached to this letter. These comments also describe a recent peer-reviewed journal article that identifies numerous weaknesses and limitations of the earlier work by Schroeder et al. that render the work unsuitable for deriving an oral reference dose. With the publication of the more recent guideline study, there is no longer any need to consider using the study by Schroeder et *al.* to derive an RfD.

(PMLP 00021. AOIA, p.2, w/attachments)

Antimony could be present in paint wastes although antimony pigments are probably less than 1% of the total pigment used within the industry.

(PMLP 00003. PPG Industries, page 1)

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RESPONSE

Paint production waste liquids

As discussed in Section IV.A of the final determination, we have determined not to list liquid wastes from paint production as proposed (K180). Therefore, we are not addressing all comments specific to constituent levels in this waste at this time. However, we uncovered an error in our modeling approach due to the assumptions we used to account for risks arising from residential use of groundwater (e.g., showering). As we discuss in detail in section IV.B.1 of the final determination, correcting this error would significantly raise the listing levels for 8 of the 12 organic constituents (by about a factor of 50) we proposed for liquid paint manufacturing wastes. When we consider the likely dilution that occurs for paint washed out during the cleaning of mixing tanks (estimated to be about a factor of 12.5 in the proposed rule, see 66 FR 10107), the levels of these chemicals in paints would have to approach or exceed 100% to generate wastewater concentrations at the increased listing levels.[1] *Similarly, two of the four remaining chemicals already had levels that were high, i.e., the proposed level for formaldehyde was 81,000 ppm and the level for n-butyl alcohol was 41,000 ppm. Thus, factoring in a dilution of at least 12.5 during wash out, the concentrations for these constituents in paint product also would approach unrealistic levels. When we factor in the likely overestimate of risk noted in Section VIII.B.3 of this response document due to the waste fraction assumptions we used in the proposal, the listing levels would be another order of magnitude higher.*

The two remaining constituents that would not be affected by the modeling error are acrylamide and antimony. As discussed in the following section for paint waste solids, we now believe that these two constituents are not likely to be present in paint wastes at the proposed listing levels, or to be present so infrequently that they would not cause a substantial hazard to human health and the environment. We also examined the 3007 survey for these constituents further to assess the potential for liquid wastes with these constituents to be disposed in impoundments of any sort. In the 3007 survey, facilities reported the presence of acrylamide polymers in only two nonhazardous wash waters, and these were sent to POTWs, not off-site CWT facilities. Facilities reported antimony in only four nonhazardous wash waters and the reported levels were "trace" or well below the proposed listing level; three of the facilities sent their wastewaters to POTWs. The one other facility reported sending treated wash water to a CWT facility. We contacted this generating

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[1]The listing level for acrylonitrile would increase by a somewhat smaller factor due to the correction (i.e., by about a factor of 7, analogous to the increase found for waste solids) because its carcinogenic risk level becomes the critical endpoint after the correction. Thus, listing level of about 65 ppm would result. Considering a dilution factor of 12.5 from washing out of a mixing tank, this would reqire a acrylonitrile level of over 800 ppm in the paint itself. For reasons noted in the discussion on waste solids, such levels in paint appear unlikely.

facility and found it used a very small quantity of antimony-containing pigment in the manufacture of only a few paint batches per year. (This facility reported a single ingredient containing antimony out of hundreds of ingredients used in paint production.)

Considering the impact of using the much smaller waste fraction reported for the one known impoundment, and after correcting for the shower model error (as well as considering the infrequent occurrence of significant levels for key constituents), the constituent concentrations in liquid paint wastes are not likely to approach the corrected listing levels for an impoundment scenario.

We also agree with commenters that a significant fraction of paint manufacturing wastes is already RCRA hazardous waste, primarily due to the regulations for characteristic hazardous waste under CFR 261.21 through 261.24. From our survey of the industry, we found that about 36% of the liquid wastes were coded and managed as characteristic or listed hazardous waste. The characteristic liquid wastes typically exhibited the characteristic of ignitability or toxicity, and the listed liquid wastes usually were classified as solvent wastes (F001 through F005). We believe the existing RCRA regulations provide controls for those liquid paint wastes that are most likely to contain many of the constituents of concern, i.e., those with high solvent or organic content.

Paint Production Waste Solids

As noted above and in Section IV.B.1 of the final determination, correcting for an error in the modeling causes two of the five constituents of concern (methyl isobutyl ketone and methyl methacrylate) to drop from further consideration, because the projected risk-based waste concentrations indicate these chemicals would not present risks of concern in paint waste solids. Therefore, we are not addressing any other comments related to the potential levels of these constituents at this time. We discuss the organic monomers acrylamide and acrylonitrile together because the issues for the two organic chemicals are closely related and somewhat different from the issues for antimony.

Acrylamide and Acrylonitrile

In response to comments, we gathered other available information on the potential levels of acrylonitrile and acrylamide monomers in paint binders.[2]

Information provided by facilities in the 3007 Survey indicated that some manufacturers reported the presence of acrylamide or acrylonitrile derived polymers in wastes. However, the survey showed that these chemicals were reported relatively infrequently. Out of the 151 facilities that reported generating paint manufacturing wastes, three reported acrylamide polymers in paint waste solids (off specification paint or sludges); all such wastes were sent to incinerators. Six

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[2] See the docket for the MSDS documents compiled in *Material Safety Data Sheets Related to Levels of Acrylamide, Acrylonitrile, and Antimony in Paint Binders and Products*.

facilities reported acrylonitrile polymers in paint waste solids (off specification paint and sludges); two facilities reported sending wastes to landfills, and the rest of the wastes were incinerated. The survey did not provide useful data for monomer levels in wastes for two reasons. First, submission of concentration information was voluntary, and second, the survey required facilities to note the presence of these constituents as the monomer and associated polymer (e.g., acrylamide and acrylamide derived polymers) under one combined category. Thus, we believe that the limited information on constituent concentrations only provides information on the prevalence of the associated polymer forms, and does not provide any useful information on monomer levels.

We discussed the potential levels of acrylonitrile in paint binders and paint products in the proposed rule (see 66 FR10106-10107). This discussion was related to the possible levels of acrylonitrile in liquid paint wastes; however, the approach leads to an estimate of monomer level in paint products, which is necessary in order to examine monomer levels in waste solids as well. For the proposal, we cited a reference that estimated a likely concentration of acrylonitrile in paint of approximately 30-50 ppm. This was based on a maximum concentration of 100 ppm acrylonitrile in the polymer binder, and a fraction of binder in paint formulations of 30-50%.[3] To estimate a possible upper bound, we also used Material Safety Data Sheets (MSDS) for acrylic paint binders, which indicated that acrylonitrile was present in trace amounts. The sheets did not report acrylonitrile levels, but showed levels of <500 ppm and <1000 ppm for the monomers from all the acrylic polymer sources in the binders. Thus, assuming a paint formulation would contain up to 50% binder, we calculated an upper bound of about 500 ppm acrylonitrile in paint.

The same reference we cited in the proposal for acrylonitrile also estimated a likely concentration range for acrylamide in paint binders.[4] The reference noted that acrylamide is less widely used than acrylonitrile monomer in paint formulations. With very limited data, the reference estimated < 5 ppm acrylamide monomer in paint, based on a maximum binder concentration of approximately 20 ppm, and assuming the acrylamide containing polymer makes up approximately as much as 25 wt.% of the formulation.

Commenters noted that our survey combined monomer and associated polymers into one constituent category, so that when facilities noted the presence of the polymer (e.g., acrylamide derived polymers) in wastes, we incorrectly inferred that there are substantial monomer (e.g., acrylamide) residuals. They did not agree with our use of data from MSDS documents, pointing out that the <0.1% (1000 ppm) residual level specified on the MSDS is based on the Occupational Safety and Health Administration (OSHA) Hazard Communication standard that requires listing individual carcinogenic constituents if they are present at greater than 0.1% (see 29 CFR 1910.1200(g)(2)(I)(C)). The commenters said that the MSDS merely indicates that the residual levels for any of the monomers present are less than the 1000 ppm to comply with the standard. The commenters stated that the manufacturer listed "trace" levels of acrylonitrile on the MSDS to comply with other reporting requirements (e.g., California Proposition 65).

One commenter submitted documentation on acrylonitrile levels from the same binder

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[3] See the docket for the memo from Paul Denault, Dynamac Corporation, to David Carver and Cate Jenkins, EPA, dated September 6, 2000.

[4] *ibid.*

manufacturer that was the source of the MSDS documents we cited in the proposal (PMLP 00017, EPC.) This documentation showed that acrylonitrile levels in binders are controlled to 10 ppm or less, which is well below the level of 1000 ppm we assumed. In addition, a polymer trade association submitted the results of a confidential survey that showed its members reported maximums of 10 to 25 ppm for acrylonitrile in paint binders (PMLP 00017, EPC).

Commenters stated that acrylamide polymers are rarely used in paint binders. A polymer trade association survey of its members found one limited instance of an acrylamide polymer sold as a binder for use in paint formulations; this manufacturer reported a maximum acrylamide level of 25 ppm and that the product typically contains lower residual levels (PMLP 00034, NAPPA). Commenters indicated that, while acrylamide may also be used in cross linking other polymer binders, it has limited capacity for this unless first reacted with formaldehyde. This forms N-methylolacrylamide (NMA), which is less toxic.

In response to comments, we gathered other available information on the potential levels of acrylonitrile and acrylamide monomers in paint binders.[5] *We found one other MSDS that listed the presence of acrylonitrile in a paint binder. The information was similar to what we found in the MSDS information for the proposal, i.e., the MSDS listed <0.05% (500 ppm) for all acrylic monomers present, and indicated the presence of a "trace" of acrylonitrile. Even assuming all of the monomer in the binder was acrylonitrile, the fraction of binder used in the paint product at issue (25%) would yield an upper bound of <125 ppm acrylonitrile. We found one other reference to acrylonitrile levels of 50 to 90 ppm in acrylonitrile-butadiene copolymer emulsions; however, we could not determine if the polymer was used in paint formulations.*[6] *A report for the Commonwealth of Australia also found that the concentration of residual acrylonitrile in polymer emulsions was <50 ppm, usually 10 ppm.*[7]

We were able to find one MSDS that listed the presence of acrylamide in a paint binder (styrene-butadiene latex). This listed a level of <50 ppm acrylamide, and indicated that the level of the formaldehyde-derived form of acrylamide (NMA) was < 100 ppm. Thus, it appears that NMA was used as a cross-linking agent and that residual acrylamide may arise from this use.[8] *The MSDS indicated that the fraction of binder used in the paint product was 26%, which means that the level of acrylamide in the paint would be <13 ppm.*

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[5]See the docket for the MSDS documents compiled in *Material Safety Data Sheets Related to Levels of Acrylamide, Acrylonitrile, and Antimony in Paint Binders and Products*.

[6]Barristel E., Bernardi A., Maestri P., Enzymatic decontamination of aqueous polymer emulsions containing acrylonitrile. *Biotechnology Letters, 19,* 131-134 (1997).

[7]See selected pages 12, 28, and 33 of the report (*National Industrial Chemicals Notification and Assessment Scheme (NICNAS): Acrylonitrile-Priority Existing Chemical Assessment Report No. 10,* February 2000, Commonwealth of Australia) contained in the compilation of documents in the docket entitled *Material Safety Data Sheets and Other Documents Related to Levels of Acrylamide, Acrylonitrile, and Antimony in Paint Binders and Products*. See the NICNAS internet web site for the full report: http://www.nicnas.gov.au/publications/CAR/PEC/PEC10/PEC10a.pdf

[8]The MSDS also noted the total residual monomer content was < 0.5% (5000 ppm). This indicates that the acrylamide (less than 50 ppm) makes up very little of the "residual monomers" in this product.

After reviewing information from the proposal, evaluating the information provided in comments from industry, and considering the information on paint binders, we conclude the concentrations of these monomers in waste are not likely to approach the listing levels. For acrylonitrile, our original estimate of up to 30-50 ppm of acrylonitrile in paint formulations is similar to information from industry and the limited data from MSDS documents. Similarly, the limited data we have indicate that the levels of acrylamide are not likely to approach the listing level. We agree with commenters that the use of acrylamide in binders appears to be relatively rare.

Because the OSHA reporting for MSDS's only requires listing acrylamide or acrylonitrile if they are present at or above 1000 ppm, we cannot absolutely rule out that they might be present at levels approaching 1000 ppm in some binders. If we were to assume that acrylamide or acrylonitrile level to be <1000 ppm in paint binders, and if the binder comprised 25% to 50% of a paint formulation, then the upper bound for paint would be from < 250 to <500 ppm. These concentrations would be in the range of the revised listing levels (e.g., the acrylamide and acrylonitrile levels are 370 and 340 ppm respectively for the revised results for the universe of 884 facilities; see in Table IV.B-3 in the final determination notice). However, we have no indication that such levels are realistic for paint formulations, nor do we have any information suggesting that paint manufacturing wastes would ever reach these levels. Furthermore, in the case of acrylamide, we found only three facilities that reported the presence of the polymer in their waste solids; all of these wastes were sent to incineration. Similarly, only six facilities reported acrylonitrile polymer in waste solids. Therefore, the low prevalence of acrylamide and acrylonitrile polymers in paint waste solids also indicates that these chemicals are unlikely to present significant risk in these wastes.

We agree with commenters that our use of the 1000 ppm concentration of monomers in paint binders from the MSDS represents an implausible case; this assumed that all of the residual monomer would be the monomer of concern, and that the constituent would be present at the upper bound level (assumptions for which we have no factual support and are implausible based on the information in the record). These assumptions were appropriate for the purpose of estimating an upper bound for acrylonitrile levels in paint liquid wastes to illustrate that this constituent was highly unlikely to present risks in liquid wastes that are managed in tanks. However, based on the information provided by commenters and our supplemental investigations performed in response to those comments, we do not believe that the levels of these two constituents are likely to approach 1000 ppm. The information in our possession indicates that the highest expected concentrations are likely to be less than 50 to 100 ppm in paint binders, which would lead to levels in paint and associated wastes (<25 to <50 ppm) that are well below the levels of concern. We would be speculating without information or technical support to assume higher levels in the waste. Therefore, we have decided that neither acrylamide nor acrylonitrile warrant inclusion as constituents of concern for listing waste solids from paint manufacturing.

Antimony

In response to comments, we reexamined the data we had for antimony in paint wastes from our 3007 Survey. Eight of the 11 facilities that reported antimony in their wastes provided estimates of antimony levels. Generally, these levels were below levels of concern and were usually presented *as "less than" values. We closely examined the information for the four facilities that reported the presence of antimony in nonhazardous waste solids. Two provided estimates of antimony levels in the survey: one generator reported very low levels (< 0.031%; facility SCT342), and one reported potentially significant levels (1% in sludges; facility WVC312). However, when we called to confirm the 1% value, this facility revised its estimate for sludges to 0.1% (1000 ppm). The facility contact indicated that they do not use antimony compounds in their products, and suggested that any antimony would be due to trace levels present in the titanium oxide used in paint formulations. The facility provided information from its supplier for titanium dioxide that indicated levels of antimony were low (<10 ppm).[9] Thus, we consider the facility's revised estimate as a conservative estimate of potential antimony levels.*

We contacted the other two facilities that reported the presence of antimony in waste solids, but did not report antimony concentrations, to obtain information on the potential source and level of antimony.[10] One facility reported only <u>one</u> ingredient out of hundreds used that contained antimony in a pigment (NCA016). The company indicated that in the year 2000 it used a total of 50 lbs. of the pigment, which contained about 0.8 lbs. of antimony. Therefore, wastes from this facility clearly are unlikely to present antimony at levels of concern.[11] The other facility is the only one from the survey that indicated it uses antimony as a flame retardant component (ARN235). This company produced a small volume of coating products with antimony levels of 1 to 2%. The facility said that these products account for less than 0.6% of coating products manufactured annually, and indicated any levels in waste solids would be "minute."

Based on data from our materials data base, as well as MSDS documents we obtained, we recognize that some fire-retardant coatings may contain relatively high levels of antimony compounds (from 1.8 to <8%).[12] Therefore, we contacted an additional 5 facilities from the Dun and Bradstreet data base, which were not included in the survey, that appeared to be manufacturing flame-retardant paints or coatings.[13] In all cases, the facilities said that the industry was moving away from antimony-based fire-retardant coatings and toward organic-based products. One of the 5 facilities indicated it still used antimony oxide in some products at levels of 0.5 to 1%. However, this facility said it does not generate waste solids, but only wash water, which is sent offsite for treatment.

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[9] See letter with attachments from Richard Flowers, Columbia Paint Corp, to Patricia Cohn, US EPA, dated July 19, 2001.

[10] See the docket for the compiled telephone logs in *Telephone Logs of Calls to Paint Manufacturers Concerning Antimony in Paint Products and Wastes.*

[11] Using this facility's reported volume of paint manufacturing waste solids in 1998 (43,266 gallons or 394,245 kg), even assuming all the antimony was passed through to the wastes would yield < 0.0001 % antimony on an annual basis.

[12] See the docket for the MSDS documents compiled in *Material Safety Data Sheets Related to Levels of Acrylamide, Acrylonitrile, and Antimony in Paint Binders and Products*.

[13] See the docket for the compiled telephone logs in *Telephone Logs of Calls to Paint Manufacturers Concerning Antimony in Paint Products and Wastes.*

As noted by the commenters, there is some limited use of antimony compounds in paint pigments. In addition to use of antimony titanate compounds noted above, we also found MSDS data showing some use of antimony oxide in lead chromate paints at levels of 1 to 2%. However, we do not believe that the use of antimony in lead chromate paints would present significant risks, because we expect that facilities handle wastes from such paints as hazardous waste under the RCRA TC regulations (40 CFR 261.24) due to the high levels of chromium and lead (26 to 57% lead chromate) in these products.[14]

After considering the available information on antimony use and the potential for waste to contain this constituent, we do not now believe that the information in hand supports a listing for this constituent. While antimony has some use in paint formulations, we did not find any waste from the surveyed facilities that contained antimony at levels that would approach the listing level. The most likely wastes to have high levels of antimony would be from the production of fire-retardant paints, e.g., off specification products could contain 1 to 2% antimony. However, manufacturers are moving away from antimony to organic-based fire-retardants, and we found very few facilities that reported using antimony in such formulations. Therefore, a listing based on antimony would only be addressing potential wastes from the production of a small proportion of highly specialized products (e.g., fire-retardant paints). The one facility we found that generates waste solids that may originate from flame retardant coatings containing antimony (1-2%) confirmed that these products account for less than 0.6% of its production line. Products with high antimony levels appear to be a small fraction of paints and coatings produced, and even the facilities that use antimony appear unlikely to generate waste with significant levels on an annual basis. We believe such antimony wastes, even if they exist, would be generated infrequently and would not pose significant risks.[15]

B. Waste management scenarios

1. Contingent management listing for waste liquids

EPA received a number of comments on the waste management scenarios we considered in the proposed rule. Below we provide a summary of comments followed by the verbatim

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[14]The TC threshold for leachable lead, for example, is 5 mg/L or 5 ppm. We found in the 3007 Survey that facilities coded paint manufacturing waste solids as TC hazardous (D008) when wastes contained levels of 0.02 to 3% lead, well below the levels found in lead chromate paints.

[15]Using the one facility as an example (ARN235), if we assume that: (1) any wastes arising from the production of antimony products contain antimony levels that approach the levels in the products (1-2%), and (2) wastes from antimony products are generated in approximate proportion to the products made (0.6%), then we can estimate that levels of any antimony in the facility's total waste solids would be no more than 120 ppm (0.006 x 20,000 ppm). This would be well below the listing level of 2600 ppm that we calculated for waste solids disposed in landfills. Furthermore, this facility generated small quantities of waste solids (668 gallons) in comparison to the waste volumes that drove the risk assessment (e.g., the 90th% waste quantity was 43,266 gallons).

comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not addressing comments in this section related to contingent management or incineration issues (except for a minor clarification at the end of Section VIII.B.2). However, at the end of the section on surface impoundments (VIII.B.3) we respond to the key issues raised in comments in so far as the issues are pertinent to our decision.

SUMMARY OF COMMENTS

The Agency received seventeen comments, ten from industry and seven from associations on its contingent management listing for waste liquids. Most of the commenters stated that they supported the Agency's use of a contingent management option for paint production liquid wastes. Several commenters also stated that the listing should state what management scenarios are subject to the listing (e.g., wastes disposed of in unlined surface impoundments or surface impoundments in general) rather than stating what scenarios are not subject to the listing. A few commenters requested that the Agency also examine storage or treatment in tanks or containers prior to sending off-site for fuel blending, combustion and lined landfills as a method of qualifying for an exemption. Delta Laboratories proposes adding two changes to the listing: 1) expand the list of included activities to include on-site activities such as reclamation when off-site disposal is not contemplated; and 2) adding K179 to the list of included materials. Commenters stated their support of the Agency's decision not to impose RCRA Subtitle C management requirements for generation, transport and disposal, including LDRs on liquid wastes managed per the contingent approach.

VERBATIM COMMENTS

EPA indicates that under this Proposed Rule liquid waste would not be listed if it is managed in onsite storage and treatment tanks or containers prior to discharge to a Publicly Operated Treatment Works ("POTW") or discharged under a NPDES permit. Additionally, if the constituents within the waste are below regulatory levels, the waste would not be classified as hazardous. EPA proposes this type of "contingent" management listing because significant risks were not identified from treatment in tanks. EPA goes on to state that it recognizes that regulation of the onsite storage and treatment of the waste in tanks prior to the waste being shipped offsite may be unwarranted because the risk for tank treatments shows no significant risk for treatment of paint manufacturing waste. A significant potential hazard can only be identified for liquid paint wastes if EPA assumes management of liquid wastes in unlined impoundments as a plausible management scenario. 66 Fed. Reg. 10108.

(PMLP 00001. Magruder, industry, page 5, 6)

If per chance the listing stands, it should only apply to wastes that are disposed in unlined surface impoundments.

(PMLP 00003. PPG Industries, page 2)

The listing is based on K180 liquid wastes being disposed in unlined surface impoundments. NPCA's research clearly indicates that this is not a waste disposal practice for paint wastes. It is also stated that management of these wastes in tanks or containers does not pose enough risk to warrant listing on that basis.

Based on the above comments, the K180 listing should be dropped.

If per chance the listing stands, it should only apply to wastes that are disposed in unlined surface impoundments. Those wastes that are managed in tanks and containers either on-site or off-site and are incinerated, fuel blended or otherwise treated, should be exempted from this listing.

(PMLP 00003. PPG Industries, industry, page 2)

EPA indicates that under this Proposed Rule liquid waste would not be listed if it is managed in onsite storage and treatment tanks or containers prior to discharge to a Publicly Operated Treatment Works ("POTW") or discharged under a NPDES permit. Additionally, if the constituents within the waste are below regulatory levels, the waste would not be classified as hazardous. EPA proposes this type of "contingent" management listing because significant risks were not identified from treatment in tanks. EPA goes on to state that it recognizes that regulation of the onsite storage and treatment of the waste in tanks prior to the waste being shipped offsite may be unwarranted because the risk for tank treatments shows no significant risk for treatment of paint manufacturing waste. A significant potential hazard can only be identified for liquid paint wastes if EPA assumes management of liquid wastes in unlined impoundments as a plausible management scenario. 66 Fed. Reg. 10108

(PMLP 00004. BF Goodrich Hilton Davis, Inc., page 5,6)

CDR does not use the solid waste management systems EPA describes as being "of concern" and potentially generating a significant risk for solid wastes generated in the production of varnish.

EPA indicates that under this Proposed Rule liquid waste would not be listed if it is managed in onsite storage and treatment tanks or containers prior to discharge to a Publicly Operated Treatment

Works ("POTW") or discharged under a NPDES permit. Additionally, if the constituents within the waste were below regulatory levels, the waste would not be classified as hazardous. EPA proposes this type of "contingent" management listing because significant risks were not identified from treatment in tanks. EPA goes on to state that it recognizes that regulation of the onsite storage and treatment of the waste in tanks prior to the waste being shipped offsite may be unwarranted because the risk for tank treatments shows no significant risk for treatment of paint manufacturing waste. A significant potential hazard can only be identified for liquid paint wastes if EPA assumes management of liquid wastes in unlined impoundments as a plausible management scenario.

(PMLP 00005. CDR Pigments & Dispersions, page 5,6)

Assuming, *arguendo,* that the rulemaking record supports the listing proposal, USWAG supports EPA's proposal to exclude from the hazardous waste listing description liquid paint manufacturing wastes managed in tanks or containers prior to discharge to a publicly owned treatment works regulated under the Clean Water Act or under a Clean Water Act point source discharge permit. 66 Fed. Reg. at 10105. USWAG commends EPA for its recent efforts to use the contingent management approach to tailor its regulations under Subtitle C to those provisions *"necessary* to protect human health and the environment" (RCRA §§ 3002, 3003, 3004 (emphasis added)). We encourage the consistent implementation of this sound policy wherever appropriate in the hazardous waste program.

EPA properly decided not to regulate liquid paint wastes contingent on their management by this low risk management practice whose discharge is subject to regulation under other authorities. The waste-specific risk assessment conducted for this rulemaking indicated that management of these wastes in tanks and containers is a low risk practice that does not warrant hazardous waste regulation (66 Fed. Reg. at 10105) - *i.e.,* management of the wastes in qualified units does not pose a substantial present or potential hazard to human health or the environment. An exemption contingent on use of this sound management practice is appropriate and consistent with the Agency's approach in the chlorinated aliphatics rulemaking, where EPA stated that "making a listing determination that is tailored to specific waste management practices is particularly appropriate. . where the management practices identified are clear and very easily distinguished (such as the difference between land treatment and land disposal), and the differences in risk presented by these practices are clearly defined." 64 Fed. Reg. 46476, 46508 (Aug. 25, 1999).

EPA's authority is well established to propose an exemption from Subtitle C regulation for wastes contingent on management in accordance with environmentally protective management practices. In *Military Toxics Project v. EPA,* 146 F.3d 948, 958 (D.C. Cir. 1998), the court upheld EPA's authority to issue a conditional exemption from Subtitle C regulation. The court cited with approval EPA's statement that "where a waste might pose a hazard only under limited management scenarios, and other regulatory programs already address such scenarios, EPA is not required to classify a waste as hazardous waste subject to regulation under Subtitle C."[3] *Id.* (citing 62 Fed. Reg. 6622, 6636 (Feb. *12,* 1997)).

3 Furthermore, the D.C. Circuit upheld broad discretion for EPA to determine the appropriate grounds for listing a waste as hazardous in *NRDC v. EPA,* 25 F3d 1063, 1070 (D.C. Cir. 1994) (upholding EPA's decision not to list used oil as a hazardous waste because existing federal regulations ensured proper disposal).

(PMLP 00008. USWAG, page 3,4, w/attachments)

SOCMA is pleased that the Agency is continuing to explore means by which contingent management options can tailor the scope of the hazardous waste listings and provide positive incentives to use lower risk waste management practices. EPA has clear legal authority to use a contingent management approach to regulate a waste as hazardous under only those scenarios that pose a risk warranting regulation under Subtitle C.[3] In fact, SOCMA believes that expanded use of contingent management would be an effective means by which to address the overly broad reach of the many of the hazardous waste regulations.

With respect to K180, the Proposed Rule for paint manufacturing waste liquids explicitly carves out from the listing description those wastes that "are stored or treated exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit." As EPA further explains in the preamble:

> However, the liquid K180 is a contingent listing. If your waste liquids are managed exclusively in tanks or containers prior to discharge to a POTW or under an NPDES permit, your waste would not be subject to the listing, and you would not need to make a hazardous waste determination for those wastes. We believe that under this proposed contingent listing approach, the vast majority of waste liquids would not pose unacceptable risks and would not be subject to the listing. (66 Fed. Reg. at 10073.)

EPA decided to take this approach because its risk assessment did not find significant risk from either treatment or storage of Kl80 liquids in tanks.

Given the lack of risk associated with tank or container storage, EPA has acknowledged that it may be appropriate to consider further tailoring the scope of the proposed waste listing:

> We are proposing this type of "contingent management" listing because we did not find significant risk from treatment or storage in tanks or containers, as noted above. However, if a paint manufacturing waste generator intends to send the waste off-site for treatment outside of tanks (and waste constituents are not below the listing levels), the waste would be K180 and would be subject to storage requirements under Subtitle C. We recognize that the regulation of the onsite storage and treatment of the waste in tanks or containers prior to the waste being shipped offsite may be unwarranted because our risk analysis for tanks or containers shows no significant risk for liquid paint manufacturing wastes. Therefore, we are soliciting comments on the option of exempting wastes stored or treated on-site in tanks or containers from being a hazardous waste while it is stored on-site, regardless of what the ultimate treatment or disposal practice might be. This would mean that the point of

generation for K180 would be when the waste is sent off-site, and that it would not be classified as K180 hazardous waste while it is stored or treated in tanks or containers on-site prior to shipment off-site for disposal. (66 Fed. Reg. at 10108.)

Based on discussions with its members, SOCMA would like to underscore the lack of risk associated with these types of on-site storage activities and commend the Agency for including container storage in the scope of the contingent management exclusion. Given the smaller volume of wastes produced from individual batch runs, batch processors, and especially smaller batch processing facilities, often rely on and use container storage. SOCMA suggests that EPA also evaluate application of this concept to other wastes from sector specific industries—such as specialty batch chemical manufacturers.

3 See. E.g., Military Toxics Project v. EPA. 146 F3d 948 (D.C. Cir. 1998) (upholding EPA's decision to regulate waste munitions only under certain management scenarios).

(PMLP 00012. SOCMA, page 6, 7)

API has long advocated a contingent management (i.e., conditional listing) approach as appropriate for wastes that may pose significant risks when mismanaged, but not when properly managed. API continues to advocate that any listing of hazardous wastes should be limited in scope, whenever possible, to only those waste streams that are shown to pose substantial actual or potential risks to health or the environment when improperly managed in a plausible mismanagement scenario. Specifically, when EPA has determined that a waste stream may pose substantial risks when managed by a given plausible method but not when managed by other methods *(e.g., managed exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit),* EPA should condition the listing by making it applicable only to wastes disposed of in the manner that poses substantial risks. Indeed, in this rulemaking, EPA admits that "due to the uncertainties in our assessment of the management of paint manufacturing waste liquids in surface impoundments, we are seriously considering an alternative proposal not to list paint manufacturing waste liquids" as hazardous. 66 FR 10102. In light of that statement, it is even more appropriate that, if EPA lists those liquids at all, it do so in the narrowest possible way.

(PMLP 00015. API, page 1, 2)

EPA offers two alternative approaches for the proposed conditional listing of K180 liquid paint wastes. The first approach would involve listing the waste as to all possible management practices, *except* the specific scenarios (e.g., management exclusively in tanks or containers) determined by EPA not to pose substantial risks. Under the alternative approach, the listing would be limited to the one management scenario, which EPA believes may pose substantial risks (i.e., management in surface impoundments), and simply would not apply to any other existing management methods.

API supports *the latter* approach because, as stated above, we believe that EPA should limit a listing to only those plausible management scenarios that EPA has adequate reason to believe pose a substantial risk. This is consistent with API's longstanding position that EPA should only list those wastes that present a potential hazard under real world scenarios.

(PMLP 00015. API, page 2)

In addition. MPA endorses EPA's alternative proposal to remove all liquid paint production wastes from the scope of the Proposed Rule.

(PMLP 00016. MPA, page 13, w/attachments)

EPC concurs with EPA's decision that there should be no concerns over the management and treatment of waste in tanks, both on and off-site.

(PMLP 00017. EPC, page 13, w/attachments)

While Delta Laboratories believes that there is no basis for the proposed hazardous waste listing, we strongly support the concept of Contingent Management Listing as described in Section IV.D of the proposed regulation if EPA finalizes the proposed hazardous waste listing. We also propose two changes. As written, Section IV.A. states "that the point of generation of K180 would be when the waste is sent off-site, and that it would not be classified as K180 hazardous waste while it is stored or treated in tanks or containers on-site prior to shipment offsite for disposal." The additions are as follows:

1. That the list of included activities be expanded by the addition of on-site activities, e.g., reclamation when off-site disposal in not contemplated;
2. That the list of included materials be expanded by the addition of Kl79.

The discussion in section IV.A. on Contingent Management Listing comes to two conclusions: 1) EPA did not find significant risk from the storage or treatment of the liquids in tanks or, presumably, drums; and 2) EPA acknowledges that paint formulations are so exacting that it is unlikely that a manufacturer could successfully rework significant quantities of constituents that are not useful paint ingredients.

These arguments are equally valid for reclaiming activities in which wastes are not sent off-site and for K179 wastes. Neither EPA's site visits nor questionnaire responses uncovered any evidence that these materials are a source of environmental harm at paint manufacturing facilities. EPA should encourage the reuse and recycling by implementing the Contingent Management Listing exempting wastes stored or treated on site for both K179 and K180.

(PMLP 00023. Delta Laboratories Inc., page 2)

If EPA proceeds to make this hazardous waste listing over our objections, the only acceptable option is to remove specific references to reusing off-specification paint and to adopt the Contingent Management Listing that includes both solid and liquid wastes and allows reclamation activities even if there is no off-site disposal.

(PMLP 00023. Delta Laboratories Inc., page 3, 4)

If it is determined that either of the proposed listings are warranted, the Agency should also develop contingent management exemptions for other waste management scenarios, especially for combustion, fuel blending and lined landfills. We believe such an effort will better reflect the risks presented by these waste management scenarios and, as a result, reduce the overall burden of the listing. 66 Fed. Reg. at 10109.

(PMLP 00030. ACC, page 5)

The Council strongly supports the Agency's decision not to impose RCRA Subtitle C management requirements for generation, transport and disposal (including the land disposal restrictions) on paint manufacturing liquid wastes handled in compliance with the proposed conditional listing approach. We further believe that this concept should extend to include the other contingent management alternatives discussed above. We agree that there is no basis for subjecting wastes to prescriptive management requirements when the Agency has reasonably determined, based upon risk assessment, that wastes handled in compliance with the conditions of an exemption do not pose a substantial hazard to human health or the environment.

This decision is consistent with the position EPA articulated in the Chlorinated Aliphatics Production Wastes final rule. Specifically, the Agency stated, "... wastewater treatment sludges that are handled in compliance with the contingent management approach will be considered *nonhazardous from their point of generation* (emphasis added). Such sludges will not be subject to RCRA Subtitle C management requirements for generation, transport, or disposal (including the land disposal restrictions). . ." 65 Fed. Reg. 67097 (November 8, 2000).

Should the Agency decide to finalize a listing for paint manufacturing wastes, the Council encourages the EPA to finalize its proposed approach, as well as the above alternative options, whereby wastes handled in compliance with the conditional listing would be considered non-hazardous from the point of generation. Additionally, the Council respectfully requests that EPA also clarify that the conditional exemption from regulation as a hazardous waste applies equally to paint manufacturing liquids stored or treated exclusively in tanks and containers on-site prior to off-site shipment *directly* to a POTW.

The Council supports the EPA's concept of exempting paint manufacturing liquid wastes stored or treated on-site exclusively in tanks or containers from hazardous waste accumulation and storage requirements, regardless of the ultimate treatment and disposal practice. 66 Fed. Reg. at 10108. This approach is consistent with the results of the conservative bounding analysis the Agency conducted for the on-site tank scenario, which determined that the risk of paint manufacturing liquid waste management in on-site tanks is insignificant for all constituents of concern. 66 Fed. Reg. at 10089. We also support extending this concept to include paint manufacturing solid wastes stored on-site in containers prior to final disposal in a Subtitle C or nonhazardous waste landfill meeting the performance criteria of 40 CFR Part 258.

(PMLP 00030. ACC, page 9, 10)

The Council also agrees with EPA's decision not to impose hazardous waste manifest requirements on off-site shipments of conditionally exempt hazardous wastes to facilities that store or treat paint manufacturing wastes exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. We further believe that this concept should extend to include the other contingent management alternatives discussed above. Requiring generators to use the hazardous waste manifest does not provide any additional assurance that the waste is shipped to or received by the intended destination facility. Rather, to a large degree, this is based upon companies' contracting and invoicing practices. Further, as stated above, this approach is consistent with the position the Agency has previously articulated in the Chlorinated Aliphatics Production Wastes final rule. 65 Fed. Reg. at 67097.

In lieu of establishing hazardous waste manifest requirements, the Council believes EPA's proposed record keeping requirements are appropriate to document that paint manufacturing wastes are stored, treated and disposed of in accordance with a conditional listing (for both the EPA's proposed option and the Council recommended alternative options discussed earlier). Similar to the Chlorinated Aliphatics Production Wastes final rule, we believe these requirements can be satisfied, for example, through the use of contracts between the generator and the treatment or disposal facility, bills of lading, and invoices documenting delivery of the waste. We support maintenance of documentation demonstrating compliance with the conditional listing for the most recent three years.

(PMLP 00030. ACC,, page 10 [from 10C])

The RCRA exemption should apply at the point of generation if a paint waste is managed as required under the proposed rule. If the waste is managed in tanks and containers, it should not be considered a hazardous waste at the point of generation nor should it be subject to Land Disposal Restriction (LDR) treatment standards.

(PMLP 00031. Rohm and Haas, page 4)

Eastman strongly believes that a contingent management approach is appropriate, in the concept of a listings decision. The same waste may or may not pose a risk to human health or the environment, based on how it is managed. In this instance, EPA is proposing that paint manufacturing waste liquids are hazardous, unless managed in tanks or containers prior to discharge to a POTW or under a NPDES permit. Eastman would discourage the Agency from listing the paint waste liquids at all, if it is unlikely the wastes would contain any of the constituents at the concentration levels considered hazardous, but if listing is done, we approve and endorse the direction the Agency is taking in the RCRA program by allowing contingent management.

(PMLP 00032. Eastman Chemical Co., page, 11)

NPCA strongly supports EPA's decision not to impose RCRA Subtitle C management requirements for generation, transport and disposal, including the land disposal restrictions, on paint manufacturing liquid wastes handled in compliance with the proposed contingent management approach. There is no basis for subjecting wastes to prescriptive management requirements when EPA has reasonably determined, based upon risk assessment, that wastes handled in compliance with the conditions of an exemption do not pose a substantial hazard to human health or the environment.

This decision is also consistent with the position EPA articulated in the Chlorinated Aliphatics Production Wastes final rule (rule and administrative record hereby incorporated by reference). Specifically, EPA stated that . . . wastewater treatment sludges that are handled in compliance with the contingent management approach will be considered non-hazardous from their point of generation. Such sludges will not be subject to RCRA Subtitle C management requirements for generation, transport, or disposal (including the land disposal restrictions) . . .[55]

While NPCA firmly believes there is no basis for a hazardous waste listing determination for paint production waste liquids, should EPA decide to finalize a listing for paint manufacturing waste liquids, over our objections, the proposal must consider wastes handled in compliance with the contingent management approach non-hazardous from the point of generation. Additionally, NPCA respectfully requests that EPA also clarify that the contingent management exemption from regulation as a hazardous waste applies equally to paint manufacturing liquids stored or treated exclusively in tanks and containers on-site prior to off-site shipment directly to a POTW.

NPCA supports the EPA's concept of exempting paint manufacturing liquid wastes stored or treated on-site exclusively in tanks or containers from being subject to hazardous waste accumulation and storage requirements, regardless of the ultimate treatment and disposal practice.[56] This approach is consistent with the results of the conservative bounding analysis the EPA conducted for the on-site tank scenario, which determined that the risk of paint manufacturing liquid waste management in on-site tanks is insignificant for all constituents of concern.[57]

NPCA believes that in addition to the exemption for K180 wastes stored or treated on-site, EPA should provide this exemption for K179 as well. The Proposed Rule discusses two central points supporting contingent management: 1) EPA did not find significant risk from the storage or treatment of the liquids in tanks or, presumably, drums; and 2) EPA acknowledges that paint formulations are so exacting that it is unlikely that a manufacturer could successfully rework significant quantities of constituents that are not useful paint ingredients.[58]

These arguments are equally valid for reclaiming activities and for K179 wastes. Neither EPA's site visits or questionnaire responses uncovered any evidence that these materials are a source of environmental harm at paint manufacturing facilities.

If a hazardous waste listing determination is promulgated over NPCA objection, we would agree with EPA's decision not to impose hazardous waste manifest requirements on off-site shipments of conditionally exempt hazardous wastes to facilities that store or treat paint manufacturing liquid wastes exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. We do not believe that requiring generators to use the hazardous waste manifest provides any additional assurance that the waste is shipped to/received by the intended destination facility. Rather, to a large degree, this is based upon companies' contracting and invoicing practices. Further, as stated above, this approach is consistent with the position EPA previously articulated in the Chlorinated Aliphatics Production Wastes final rule.

In lieu of establishing hazardous waste manifest requirements, NPCA believes s proposed record keeping requirements are appropriate to document that paint manufacturing liquid wastes are either received by the POTW, or stored or treated exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. Similar to the Chlorinated Aliphatics Production Wastes final rule, we believe these requirements can be satisfied, for example, through the use of contracts between the generator and the POTW or WWTF, bills of lading, and invoices documenting delivery of the waste. We support maintenance of documentation demonstrating compliance with the conditional listing for the most recent three years as opposed to unnecessary and burdensome manifest requirements should a hazardous listing determination be promulgated over NPCA objection.

NPCA concurs with the Agency's determination that LDR prohibitions do not apply to paint manufacturing liquid wastes managed in compliance with the proposed contingent management approach. First, the EPA's authority for imposing compliance with the LDRs is limited to hazardous wastes. Under the proposed conditional listing, paint manufacturing liquid wastes managed solely in tanks or containers prior to discharge to a POTW or under a NPDES permit would be considered non-hazardous from the point of generation. Thus, LDR prohibitions never attach to the wastes.

Second, the proposed conditional exemption from hazardous waste requires that paint manufacturing waste liquids be managed exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. EPA has previously expressed that where wastes are managed in NPDES or POTW discharge systems that are entirely tank-based, the wastes are not destined for land disposal and, therefore, neither the LDR disposal prohibitions nor the treatment standards (or attendant dilution prohibition) apply.[59] Accordingly, management of paint manufacturing liquids in compliance with the proposed contingent management approach would trigger no LDR prohibitions or requirements.

More importantly, perhaps, we believe that the proposed contingent management approach is protective of human health and the environment and subjecting these wastes to LDR treatment standards will not achieve significant environmental benefits. Nevertheless, as NPCA has historically advocated, EPA is certainly not compelled to apply LDR treatment standards to wastes exiting under contingent management, even if they exit after the point of generation.

If, in fact, it is determined that any proposed listing is warranted, EPA should develop contingent management alternatives for other waste management scenarios. NPCA recommends priority be given to developing such contingent management options especially for combustion, fuel blending and lined landfills. We believe such an effort will better reflect the risks presented by these waste management scenarios and, as a result, would reduce the overall burden of the listing.[60]

55 65 Fed. Reg. 67097 (Nov. 8, 2000).

56 66 Fed. Reg. 10108 (Feb. 13, 2001).

57 Id at 10089

58 Id

59 62 Fed. Reg. 26006-7 (May 12, 1997).

60 66 Fed. Reg. 10109 (Feb. 13, 2001).

(PMLP 00033. NPCA, page 33, 34, 35, w/attachments)

The lack of surface impoundments used by the paint manufacturing industry, state regulations that require surface impoundment liners, and incorrect surface impoundment assumptions made by the

EPA make the use of unlined surface impoundments for the management of paint production wastes implausible. As a result, the EPA should not list paint production liquids.

(PMLP 00035. RPM, Inc., page 2, 3)

If the EPA does decide to move forward and list paint production liquids, liquids should only be listed if they are disposed of in unlined surface impoundments, all other liquids should be exempted from the rule.

(PMLP 00035. RPM, Inc., page 3)

ICI Paints strongly supports EPA's decision not to impose RCRA Subtitle C management requirements for generation, transport and disposal, including the land disposal restrictions, on paint manufacturing liquid wastes handled in compliance with the proposed contingent management approach. There is no basis for subjecting wastes to prescriptive management requirements when EPA has reasonably determined, based upon risk assessment, that wastes handled in compliance with the conditions of an exemption do not pose a substantial hazard to human health or the environment. EPA should consider wastes handled in compliance with the contingent management approach non-hazardous from the point of generation. Additionally, EPA should also clarify that the contingent management exemption from regulation as a hazardous waste applies equally to paint manufacturing liquids stored or treated exclusively in tanks and containers on-site prior to off-site shipment directly to a POTW or WWTF.

ICI Paints supports the EPS's concept of exempting paint manufacturing liquid wastes stored or treated on-site exclusively in tanks or containers from being subject to hazardous waste accumulation and storage requirements, regardless of the ultimate treatment and disposal practice. This approach is consistent with the results of the conservative bounding analysis that EPA conducted for the on-site tank scenario, which determined that the risk of paint manufacturing liquid waste management in on-site tanks is insignificant for all constituents of concern.

In addition to the exemption for K180 wastes stored or treated on-site, EPA should consider exempting the K179 wastes as well. The Proposed Rule discusses two central points supporting contingent management: 1) EPA did not find significant risk from the storage or treatment of the liquids in tanks or, presumably, drums; and 2) EPA acknowledges that paint formulations are so exacting that it is unlikely that a manufacturer could successfully rework significant quantities of constituents that are not useful paint ingredients. This same principle would be valid for reclaiming activities and for K179 wastes.

ICI Paints agrees with EPA's decision not to impose hazardous waste manifest requirements on off-site shipments of conditionally exempt hazardous wastes to facilities that store or treat paint manufacturing liquid wastes exclusively in tanks or containers prior to discharge to a POTW/WWTF or under a NPDES permit. We do not believe that requiring generators to use the hazardous waste manifest provides any additional assurance that the waste is shipped to/received by the intended destination facility.

ICI Paints supports the Agency's determination that LDR prohibitions do not apply to paint manufacturing liquid wastes managed in compliance with the proposed contingent management approach. EPA's authority for imposing compliance with the LDR is limited to hazardous wastes. Under the proposed conditional listing, paint manufacturing liquid wastes managed solely in tanks or containers prior to discharge to a POTW or under a NPDES permit would be considered non-hazardous from the point of generation. The proposed conditional exemption from hazardous waste requires that paint manufacturing waste liquids be managed exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. EPA has previously expressed that where wastes are managed in NPDES or POTW discharge systems that are entirely tank-based, the wastes are not destined for land disposal and, therefore, neither the LDR disposal prohibitions nor the treatment standards apply. Accordingly, management of paint manufacturing liquids in compliance with the proposed contingent management approach would trigger no LDR prohibitions or requirements. More importantly the proposed contingent management approach is protective of human health and the environment and subjecting these wastes to LDR treatment standards will not achieve significant environmental benefits.

(PMLP 00039. ICI Paints North America, page 1, 2)

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Lastly, DuPont also supports limiting the scope of the proposed listings to those practices posing unacceptable risks as an adequate and appropriate alternative to defining paint manufacturing waste liquids and solids more generically. For instance, the K180 listing could specify that it would apply only to wastes managed in surface impoundments. Likewise, the K179 listing could specify that it would apply only to wastes managed in unlined landfills.

(PMLP 00041. DuPont, page 19, w/attachments)

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DuPont strongly supports the Agency's decision not to impose RCRA Subtitle C management requirements for generation, transport and disposal (including the land disposal restrictions) on paint manufacturing liquid wastes handled in compliance with the proposed conditional listing approach. We further believe that this concept should extend to include the other contingent management alternatives discussed above. There is no basis for subjecting wastes to prescriptive management requirements when the Agency has reasonably determined, based upon risk assessment, that wastes handled in compliance with the conditions of an exemption do not pose a substantial hazard to human health or the environment.

This decision is also consistent with the position EPA articulated in the Chlorinated Aliphatics Production Wastes final rule. Specifically, the Agency stated that ... wastewater treatment sludges that are handled in compliance with the contingent management approach will be considered *nonhazardous from their point of generation* (emphasis added). Such sludges will not be subject to RCRA Subtitle C management requirements for generation, transport, or disposal (including the land disposal restrictions)... 65 FR 67097 (November 8, 2000).

Should the Agency decide to finalize a listing for paint manufacturing wastes, DuPont encourages the EPA to finalize its proposed approach, whereby wastes handled in compliance with the conditional listing would be considered non-hazardous from the point of generation. Additionally, DuPont respectfully requests that EPA also clarify that the proposed conditional exemption from regulation as a hazardous waste applies equally to paint manufacturing liquids stored or treated exclusively in tanks and containers on-site prior to off-site shipment *directly* to a POTW.

DuPont supports the EPA' s concept of exempting paint manufacturing liquid wastes stored or treated on-site exclusively in tanks or containers from being subject to hazardous waste accumulation and storage requirements, regardless of the ultimate treatment and disposal practice. 66 FR 10108 (Feb. 13, 2001). This approach is consistent with the results of the conservative bounding analysis the Agency conducted for the on-site tank scenario, which determined that the risk of paint manufacturing liquid waste management in on-site tanks is insignificant for all constituents of concern. 66 FR.10089 (Feb. 13, 2001). We also support extending this concept to include paint manufacturing solid wastes stored on-site in containers prior to final disposal in a Subtitle C or nonhazardous waste landfill meeting the performance criteria of 40 CFR 258.

DuPont also agrees with EPA's decision not to impose hazardous waste manifest requirements on off-site shipments of conditionally exempt hazardous wastes to facilities that store or treat paint manufacturing liquid wastes exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. We further believe that this concept should extend to include the other contingent management alternatives discussed above. Requiring generators to use the hazardous waste manifest does not provide any additional assurance that the waste is shipped to/received by the intended destination facility. Rather, to a large degree, this is based upon companies' contracting and invoicing practices. Further, as stated above, this approach is consistent with the position the Agency has previously articulated in the Chlorinated Aliphatics Production Wastes final rule. 65 FR 67097 (November 8, 2000).

In lieu of establishing hazardous waste manifest requirements, DuPont believes EPA's proposed record keeping requirements are appropriate to document that paint manufacturing wastes are stored, treated and disposed of in accordance with a conditional listing (for both the EPA's proposed option and DuPont's recommended alternative options discussed earlier). Similar to the Chlorinated Aliphatics Production Wastes final rule, we believe these requirements can be satisfied, for example, through the use of contracts between the generator and the treatment or disposal facility, bills of lading, and invoices documenting delivery of the waste. We support maintenance of documentation demonstrating compliance with the conditional listing for the most recent three years.

DuPont concurs with the Agency's determination that LDR prohibitions do not apply to paint manufacturing liquid wastes managed in compliance with the proposed contingent management approach. First, the EPA's authority for imposing compliance with the LDRs is limited to hazardous wastes. Under the proposed conditional listing, paint manufacturing liquid wastes managed solely in tanks or containers prior to discharge to a POTW or under a NPDES permit would be considered *non-hazardous from the point of generation,* provided they are not otherwise listed and do not exhibit a hazardous waste characteristic. Thus, LDR prohibitions never attach to the wastes.

Second, the proposed conditional exemption from hazardous waste requires that paint manufacturing waste liquids be managed exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. The Agency has previously expressed that where wastes are managed in NPDES or POTW discharge systems that are entirely tank-based, the wastes are not destined for land disposal and, therefore, neither the LDR disposal prohibitions nor the treatment standards (or attendant dilution prohibition) apply. 62 FR 26006-7 (May 12, 1997). Accordingly, management of paint manufacturing liquids in compliance with the proposed contingent management approach would trigger no LDR prohibitions or requirements.

More importantly, perhaps, we believe that the proposed contingent management approach is protective of human health and the environment and subjecting these wastes to LDR treatment standards will not achieve significant environmental benefits. Nevertheless, EPA is certainly not compelled to apply LDR treatment standards to conditionally exempt wastes, even if they become exempt after the point of generation.

Finally, it should also be noted that we further believe that the notion of LDRs not applying to wastes managed in compliance with a conditional exemption should also extend to include the other contingent management alternatives discussed above.

(PMLP 00041. DuPont, page 27, 28, 29, w/attachments)

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RESPONSE

As discussed in Section IV.B of the final determination, we have determined not to list liquid wastes from paint production as proposed (K180). Therefore, we are not addressing comments specific to various contingent management options at this time.

2. Incineration issues

SUMMARY OF COMMENTS

The Agency received five comments, three from industry and two from associations requesting that the Agency include incinerators, cement kilns, BIFs and fuel blenders as contingent management alternatives for paint manufacturing waste liquids, including liquid off-specification product.

VERBATIM COMMENTS

The Council urges the EPA to include incinerators, cement kilns, BIFs and fuel blenders as contingent management alternatives for paint manufacturing waste liquids, including liquid off-specification product, in any final rule.

Results of the Agency's extremely conservative bounding analysis determined that the risk of paint manufacturing liquid waste management in on-site tanks was insignificant for all constituents of concern. 66 Fed. Reg. at 10089. Referencing a prior listing determination for solvent wastes, the Agency relates that potential risks from the release of constituents through incineration would be at least several orders of magnitude below potential air risks from releases from tanks or impoundments. 66 Fed. Reg. at 10078, 10080-1, and 10109. The Agency also notes that fuel blenders receiving waste paints are RCRA permitted facilities, and "must comply with protective regulations regarding releases from RCRA units. . ." 66 Fed. Reg. at 10078. Thus, inclusion of these waste management scenarios as contingent management alternatives seems wholly appropriate. Therefore, in order to qualify for this conditional exclusion, EPA could require a generator to maintain records demonstrating that the waste is managed exclusively in tanks and containers prior to final disposal, similar to the proposed conditional exclusion for paint manufacturing waste liquids.

As evidenced in responses to the EPA's survey of the industry, management of paint manufacturing wastes in combustion units and via fuel blending is widespread. For example, according to Table 4-7 in the Listing Background Document, approximately 45% of all nonhazardous off-specification products were discarded in either an incinerator, cement kiln, BIF or by fuel blending. More generally, combustion is a common management method used for treating wastes --- a method moreover, that the Agency has consistently recognized is unparalleled in reducing the volume and toxicity of many types of wastes. EPA need not be concerned that a combustion based conditional exemption would result in mismanagement of the waste. Specifically,

- Generators who choose to combust the wastes in a non-hazardous commercial or industrial solid waste incineration unit, would have to comply EPA's recently promulgated NSPS standards for Commercial and Industrial Solid Waste Incineration Units.
- By the time OSW is scheduled to finalize its listing determination for paint manufacturing wastes *(i.e.,* March 30, 2002), appropriate standards to cover non-hazardous waste combustion alternatives will have been promulgated under other EPA programs.
- Stringent civil and criminal penalties attach to non-compliance with operating conditions specified by RCRA regulation and in permits. The potential for regulatory enforcement assures that these facilities will properly treat wastes.
- Any wastewaters from such combustion units will normally be managed in industrial or commercial wastewater treatment systems prior to discharge to a POTW or under a NPDES permit. Similar to combustors, substantial civil and criminal penalties assure that these wastewater treatment systems are properly operated and that the wastewaters they manage are properly treated. The treated wastewaters would be discharged under the terms of the facility's applicable permit, and any treatment sludges would be managed as a non-

hazardous waste in compliance with the state's industrial waste management requirements (so long as the residue itself does not exhibit a hazardous characteristic).

- As evidenced in responses to the Agency's survey of the industry, paint manufacturing waste liquids are not expected to contain significant metal content. Any residues that nevertheless exhibit a characteristic of hazard -- such as the toxicity characteristic for metals -- would remain subject to RCRA hazardous waste requirements. Federal and state hazardous waste characteristics thus assure that any combustion residuals that warrant hazardous waste regulation will be subjected to protective management under RCRA or state law.

In light of the above, EPA should provide generators the option of employing additional preferred, protective, treatment-based methods for managing wastes under a conditional exemption by including combustion units and fuel blenders in its conditional exemption framework. Inclusion of combustion and fuel blending fills a major gap in the Agency's conditional exemption analysis and reduces the overall burden of the listing so that it would apply only to the practice of most potential concern to liquid wastes, *i.e.,* unlined surface impoundments. 66 Fed. Reg. at 10109.

(PMLP 00030. ACC, page 6, 7)

The Agency has proposed to include combustion devices and fuel blending opportunities within the contingent management approach. Rohm and Haas believes this should be expanded to allow paint wastes to be managed as non-hazardous waste in permitted BIFs and other combustion devices.

(PMLP 00031. Rohm and Haas, page 4)

NPCA urges the EPA to include incineration, cement kilns, BIFs and fuel blenders as contingent management alternatives for paint manufacturing waste liquids, including liquid off-specification product, in any final rule. Referencing a prior listing determination for solvent wastes, EPA relates that potential risks from the release of constituents through incineration would be at least several orders of magnitude below potential air risks from releases from tanks or impoundments.[61] Results of EPA's extremely conservative bounding analysis determined that the risk of paint manufacturing liquid waste management in on-site tanks was insignificant for all constituents of concern.[62] Thus, inclusion of these waste management scenarios as contingent management alternatives seems wholly appropriate.

As evidenced in responses to the EPA's survey of the industry, management of paint manufacturing wastes in combustion units and via fuel blending is widespread. For example, according to Table 4-7 in the Listing Background Document, approximately 45% of all non-hazardous off-specification products were discarded in either an incinerator, cement kiln, BIF or by fuel blending. More generally, combustion is a common management method used for treating wastes — a method moreover, that EPA has consistently recognized as unparalleled in reducing the volume and toxicity of wastes. By not including a combustion scenario in whichever contingent management options it finalizes, EPA will be discouraging this effective treatment of wastes and driving management towards land disposal. This result would be contrary to EPA's own waste management hierarchy, as well as the primary intent of the HSWA, in which treatment is preferred over land disposal.

Other Federal or State programs already provide the types of controls needed to eliminate any potential risks associated with residuals from the combustion of paint manufacturing wastes. Specifically,

- As noted above, combustion devices are very effective and efficient in treating constituents of concern. To meet permit conditions these devices often must demonstrate 99.99% destruction-removal efficiency. Such a standard virtually assures the destruction of all organic constituents. Further, stringent civil and criminal penalties attach to non-compliance with operating conditions specified by regulation or in permits. The potential for regulatory enforcement assures that these facilities will properly treat wastes.
- Generators would be electing to combust paint manufacturing wastes either in hazardous waste units (regulated through the RCRA incinerator or BIF standards or the recently promulgated incinerator MACT standard) or in non-hazardous thermal treatment units. EPA's Air Office (OAR) promulgated New Source Performance Standards (NSPS) for Commercial and Industrial Solid Waste Incineration Units on December 1, 2000 to address both incinerators and boilers burning non-hazardous waste. By March 30, 2002 when EPA's Office of Solid Waste (OSW) is scheduled to finalize its listing determination for paint manufacturing wastes, appropriate standards will be promulgated to cover non-hazardous waste combustion alternatives.
- Any wastewaters from combustion units will normally be managed in industrial or commercial wastewater treatment systems prior to discharge to a POTW or under a NPDES permit. Similar to combustors, substantial civil and criminal penalties assure that these wastewater treatment systems are properly operated and that the wastewaters they manage are properly treated. The treated wastewaters would be discharged under the terms of the facility's applicable permit, and any treatment sludges would be managed as a non-hazardous waste in compliance with the state's industrial waste management requirements.
- As evidenced in responses to EPA's RCRA 3007 ICR, paint manufacturing waste liquids are not expected to contain significant metal content. Any residues that nevertheless exhibit a characteristic of hazard — such as the toxicity characteristic for metals -- would remain subject to RCRA hazardous waste requirements. Federal and state hazardous waste characteristics thus assure that any combustion residuals that warrant hazardous waste regulation will be subjected to protective management under RCRA Subtitle C or state law.

In light of the above, EPA should provide generators the option of employing a preferred, protective, treatment-based method for managing wastes under a conditional exemption by including combustion units and fuel blenders in its conditional exemption framework. Inclusion of combustion and fuel blending fills a major gap in EPA's conditional exemption analysis and avoids the indirect encouragement of land disposal that the exemption otherwise would provide. Further, it would reduce the overall burden of the listing so that it would aptly only to the practice of most potential concern to liquid wastes, i.e., unlined surface impoundments.[63]

61 Id at 10078, 10080-1, 10109

62 66 Fed. Reg. 10089 (Feb. 13, 2001)

63 66 Fed. Reg. 10109 (Feb. 13,2001).

(PMLP 00033. NPCA, page 36, 37, w/attachments)

EPA should include incineration, cement kilns, BIFs and fuel blenders as contingent management alternatives for paint manufacturing waste liquids, including liquid off-specification product, in any final rule. Referencing a prior listing determination for solvent wastes, EPA relates that potential risks from the release of constituents through incineration would be at least several orders of magnitude below potential air risks from releases from tanks or impoundments. Results of EPA's extremely conservative bounding analysis determined that the risk of paint manufacturing liquid waste management in on-site tanks was insignificant for all constituents of concern. Thus, inclusion of these waste management scenarios as contingent management alternatives seems appropriate.

(PMLP 00039. ICI Paints North America, industry, page 3)

If it is determined that either of the proposed listings are warranted, the Agency should also develop contingent management alternatives for other waste management scenarios. DuPont recommends consideration be given to developing contingent management options for combustion, fuel blending and lined landfills. We believe such an effort will better reflect the risks presented by these waste management scenarios and, as a result, reduce the overall burden of any final decision to list paint manufacturing wastes as hazardous. 66 FR 10109 (Feb. 13, 2001)).

DuPont urges the EPA to include incineration, cement kilns, BIFs and fuel blenders as contingent management alternatives for paint manufacturing waste liquids, including liquid off-specification product, in any final rule. In order to qualify for this conditional exclusion, a generator would need to maintain records demonstrating that the waste is managed exclusively in tanks and containers prior to final disposal, similar to the proposed conditional exclusion for paint manufacturing waste liquids. Referencing a prior listing determination for solvent wastes, the Agency relates that potential risks from the release of constituents through incineration would be at least several orders of magnitude below potential air risks from releases from tanks or impoundments. 66 FR 10078, 10080-1, 10109 (Feb. 13, 2001).). Results of the Agency's extremely conservative bounding analysis determined that the risk of paint manufacturing liquid waste management in on-site tanks was insignificant for all constituents of concern. 66 FR 10089 (Feb. 13, 2001). Thus, inclusion of these waste management scenarios as contingent management alternatives seems wholly appropriate.

As evidenced in responses to the EPA's survey of the industry, management of paint manufacturing wastes in combustion units and via fuel blending is widespread. For example, according to Table 4-7 in the Listing Background Document, approximately 45% of all nonhazardous off-specification products were discard in either an incinerator, cement kiln, BIF or by fuel blending. [DuPont notes a discrepancy between Table 4-7 in the Listing Background Document and the amount presented in Table Ill.D-3 in the preamble regarding the amount of off-specification product disposed of in an incinerator]. More generally, combustion is a common management method used for treating wastes --- a method moreover, that the Agency has consistently recognized is unparalleled in reducing the volume and toxicity of wastes. By not including a combustion scenario in whichever contingent management options it finalizes, the Agency will be discouraging this effective treatment of wastes and driving management towards land disposal. This result would be contrary to the Agency's own waste management hierarchy, in which treatment is preferred over land disposal.

Other Federal or State programs already provide, or soon will provide, the types of controls needed to eliminate any potential risks associated with residuals from the combustion of paint manufacturing wastes. Specifically,

- As noted above, combustion devices are very effective and efficient in treating constituents of concern. To meet their permit conditions such devices often must demonstrate 99.99% destruction-removal efficiency. Such a standard virtually assures the destruction of all organic constituents. Further, stringent civil and criminal penalties attach to non-compliance with operating conditions specified by regulation or in permits. The potential for regulatory enforcement assures that these facilities will properly treat wastes.
- Generators would be electing to combust paint manufacturing wastes either in hazardous waste units (regulated through the RCRA incinerator or BIF standards or the recently promulgated incinerator MACT standard) or in non-hazardous thermal treatment units. EPA's Office of Air Quality promulgated NSPS standards for Commercial and Industrial Solid Waste Incineration Units on December 1, 2000 to address incinerators burning non-hazardous waste. Similar standards for boilers burning nonhazardous wastes are required to be promulgated by April 26, 2002. Thus, by April 26, 2002, approximately one month following when OSW is scheduled to finalize its listing determination for paint manufacturing wastes, appropriate standards will be promulgated to cover all non-hazardous waste combustion alternatives.
- Any wastewaters from such combustion units will normally be managed in industrial or commercial wastewater treatment systems prior to discharge to a POTW or under a NPDES permit. Similar to combustors, substantial civil and criminal penalties assure that these wastewater treatment systems are properly operated and that the wastewaters they manage are properly treated. The treated wastewaters would be discharged under the terms of the facility's applicable permit, and any treatment sludges would be managed as a non-hazardous waste in compliance with the state's industrial waste management requirements.
- As evidenced in responses to the Agency's survey of the industry, paint manufacturing

waste liquids are not expected to contain significant metal content. Any residues that nevertheless exhibit a characteristic of hazard — such as the toxicity characteristic for metals -- would remain subject to RCRA hazardous waste requirements. Federal and state hazardous waste characteristics thus assure that any combustion residuals that warrant hazardous waste regulation will be subjected to protective management under RCRA or state law.

In light of the above, EPA should provide generators the option of employing additional preferred, protective, treatment-based methods for managing wastes under a conditional exemption by including combustion units and fuel blenders in its conditional exemption framework. Inclusion of combustion and fuel blending fills a major gap in the Agency's conditional exemption analysis and reduces the overall burden of the listing so that it would apply only to the practice of most potential concern to liquid wastes, i.e., unlined surface impoundments. 66 E&10109 (Feb. 13, 2001).

(PMLP 00041. DuPont, page 22, 23, 24, w/attachment)

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RESPONSE

As discussed in Section IV.A of the final determination, we have determined not to list liquid wastes from paint production as proposed (K180). Therefore, we are not addressing comments specific to various contingent management options for this waste at this time. One commenter noted a discrepancy between Table 4-7 in the Listing Background Document and the amount presented in Table Ill.D-3 in the preamble regarding the amount of off-specification product disposed of in an incinerator (PMLP 00041, DuPont). While we did not use this specific number in making any of our decisions, we wish to clarify that the number in the preamble (72 metric tons) is the correct number, and that the number in the background document was an error.

3. Surface impoundments

SUMMARY OF COMMENTS

The Agency received eight comments from industry and industry associations stating that disposal in unlined surface impoundments is not a plausible waste management scenario. Commenters stated that the listing proposed for liquid paint production wastes is driven by risks arising from unlined surface impoundments. One commenter noted that, when EPA contacted 9 of the 24 off-site centralized wastewater treatment (CWT) facilities that were reported to receive liquid wastes from paint manufacturers, EPA found only one facility that used lined surface impoundments. This commenter contacted the remaining centralized wastewater treatment facilities and found that none of these facilities used surface impoundments. The commenter argued that, based on EPA's own statistics, there would only be at most one other unidentified surface impoundment in addition to the identified lined surface impoundment managing waste liquids from paint manufacturing. The commenter concluded that a surface impoundment, particularly an unlined surface impoundment, is not a plausible management scenario, and that using this speculative scenario overestimates potential risks from the disposal of paint manufacturing waste liquids. The same commenter also contacted the one CWT facility that reported a surface impoundment and found that only approximately 3% of all the liquid wastes accepted for treatment in 1998 came from the paint manufacturing industry. This commenter argued that using a more accurate figure for the amount of waste entering surface impoundments in EPA's risk assessment model would significantly reduce or eliminate the modeled risk associated with paint production liquid waste. The commenter also stated that EPA should consider that surface impoundment liners reduce any potential risk, and that state regulations restrict the use of unlined surface impoundments.

VERBATIM COMMENTS

The listing is based on K180 liquid wastes being disposed in unlined surface impoundments. NPCA's research clearly indicates that this is not a waste disposal practice for paint wastes. It is also stated that management of these wastes in tanks or containers does not pose enough risk to warrant listing on that basis.

(PMLP 00003. PPG Industries, page 2)

The proposed Federal hazardous waste designation for liquid paint production wastes is not justified based on only a handful of units that employ management techniques modeled to present an unacceptable risk.

(PMLP 00008. USWAG, page 2, w/attachments)

Despite our support for consistent adoption of the contingent management policy, we caution that EPA should not list any waste as hazardous without documentation that such regulation is necessary to protect human health and the environment. EPA notes that the listing proposal for liquid paint production wastes is driven by "potential risks arising from unlined surface impoundments." *Id.* at 10108. However, EPA identified only one case where a surface impoundment was used to manage these wastes and estimates that a maximum of 4 to 5 units exists nationwide. *Id.*

Such a limited waste management practice cannot be considered a plausible waste management scenario that supports the nationwide designation of this particular waste as hazardous. EPA may not rely on a management scenario as the basis for a hazardous waste determination unless it establishes a "rational relationship" between the wastes and the management scenario. *Edison*

Electric Inst. v. EPA, 2 F.3d 438 (D.C. Cir. 1993); *Columbia Falls Aluminum Co. v. EPA,* 139 F.3d 914, 922-23 (D.C. Cir. 1998). Absent a plausible management scenario that indicates risks at levels of concern, EPA should adopt its alternate proposal and decline to list liquid wastes from paint manufacturing.

(PMLP 00008. USWAG, page 3, w/attachments)

EPA must limit its listings to "plausible" mismanagement scenarios. E.g. Dithiocarbamate Task Force v. EPA, 93 F.3d 1394 (D.C. Cir. 1996). EPA based its proposed listing of liquid paint wastes on the potential risks from the management of liquid wastes in an off-site centralized wastewater treatment system with an unlined surface impoundment. Yet EPA admits that when researching possible risks from management in surface impoundments, EPA found only 1 facility with a lined surface impoundment and extrapolated that finding to estimate a total of 4 or 5 facilities using surface impoundments "of some kind." EPA then thought it "reasonable to assume that some of these impoundments may be unlined for modeling purposes." (66 FR 10108.) This appears to be a purely speculative and not a plausible or realistic scenario, based upon EPA's own confirmation of lack of data and knowledge of the occurrence of this mismanagement scenario.

(PMLP 000015. API, Page 4 [from 9B1])

The lack of surface impoundments used by the paint manufacturing industry, state regulations that require surface impoundment liners, and incorrect surface impoundment assumptions made by the EPA make the use of unlined surface impoundments for the management of paint production wastes implausible. As a result, the EPA should not list paint production liquids as hazardous wastes.

(PMLP 00023. Delta Laboratories Inc., page 1)

In addition, the inclusion of unlined surface impoundments in the risk assessment was inappropriate. EPA extrapolated from a single special circumstance, where evaporation via a double lined surface impoundment was reported, and assumed that disposal in an unlined surface impoundment was a "plausible mismanagement" scenario.

(PMLP 00024. Akzo Nobel, page 2)

The lack of surface impoundments used by the paint manufacturing industry, state regulations that require surface impoundment liners, and incorrect surface impoundment assumptions made by the EPA make the use of unlined surface impoundments for the management of paint production wastes implausible. As a result, the EPA should not list paint production liquids.

(PMLP 00026. Jamestown Paint Company, page 2)

The proposed listing of styrene is based solely on a concern with its occurrence in the groundwater pathway. *See,* 66 Fed. Reg. at 10098 (Table III.E-4). This concern, in turn, is derived from calculated risk-based concentration levels that were developed for a model storage and disposal scenario for which the Agency admits it has no supporting evidence. The Agency did not sample any paint waste stream but instead, relied on a survey from less than a third of paint production facilities and site visits at 10 facilities. Among other factors, the agency's model assumed that the wastewater impoundments were unlined, although the sole facility with wastewater impoundments used lining. In contrast, styrene's physicochemical and biodegradation properties, coupled with extensive groundwater monitoring, show that styrene is not expected to be present or present at any level of concern.[20]

20 These comments address the reasons that styrene should not be listed in the final rule. SIRC is not addressing the issue of whether EPA should delete the paint manufacturing waste liquids (K180) category completely, but these comments would certainly support that conclusion with regard to styrene. Although we have not thoroughly analyzed the issue, SIRC notes that it is not endorsing the treatment level proposed by the agency. Finally, the preamble to the proposal refers to EPA's 1999 and 2000 Hazardous Waste Identification Rule (HWIR) notices. While styrene was evaluated in the 1992 and *1995* HWIR proposals, styrene was dropped from the list of candidate chemicals in subsequent proposals. This further supports the agency's suggestion that styrene not be included in the present rule. *Compare* 57 Fed. Reg. 21450, 21520 (May 20, 1992) and 60 Fed. Reg. 66334, 66450(Dec. 21, 1995) *with* 64 Fed. Reg. 63382 (Nov. 19, 1999) and 65 Fed. Reg. 44491 (July 18, 2000).

(PMLP 00029. SIRC, page 4)

EPA arbitrarily modeled unlined surface impoundments. Only one double lined surface impoundment was reported, yet EPA modeled unlined surface impoundments based upon the "plausible mismanagement" generic scenario and outdated waste management practices. Unlined surface impoundments are simply not plausible and arbitrarily overestimate the potential risk from the disposal of paint production waste liquids. Therefore, in order for the risk assessment for paint production liquids to have been even theoretically useful it would have to rest on a lined surface impoundment, not an unlined surface impoundment model. Any rulemaking that goes forward, despite NPCA objections, must be based on actual waste management practices.

The EPA stated that it is seriously considering not listing paint manufacturing waste liquids, due to the uncertainty in their risk assessment.[29] NPCA also believes the serious inaccuracies caused by EPA's improper assessment of the management of paint manufacturing wastes liquids in surface impoundments, particularly unlined surface impoundments, are so great as to bar the listing of liquid paint production wastes. The lack of surface impoundment use by the paint industry, current state regulations governing the use of surface impoundments, the unique circumstances surrounding the one Waste Water Treatment Facility (WWTF) in use, and other incorrect surface impoundment assumptions made by EPA make the assumption of unlined surface impoundments for the management of paint production wastes implausible and arbitrary.

Because of EPA's serious doubts regarding their risk assessment methodology for paint manufacturing liquids, EPA specifically requested information from stakeholders on the prevalence of surface impoundment management of paint manufacturing waste liquids and data related to the use of surface impoundments.[30] As stated, NPCA agrees that EPA's risk assessment methodology for paint manufacturing wastes is fatally flawed. Accurate information regarding use of unlined surface impoundments is essential since the constituent levels that EPA is proposing are based on the possible risks associated from management of liquid wastes in an off-site centralized wastewater treatment system with an unlined surface impoundment. EPA indicated that the RCRA 3007 ICR showed that 21 paint manufacturers reported sending their liquid wastes to 24 off-site WWTFs. EPA randomly selected and contacted 9 (one was actually a Publicly Owned Treatment Works (POTW) not a WWTF[31]), of the 24 facilities and found one facility that reported the use of a lined surface impoundment to treat liquid wastes from two paint manufacturers. Based on this information EPA estimated that 40 WWTFs might accept paint liquids and estimated that 4-5 of these facilities could be using surface impoundments of some kind.[32] The EPA derived the estimated 4-5 surface impoundments from a probability calculation also based on the random telephone survey.

However, EPA's contractor (Dynamac Corporation, hereinafter referred to as "Dynamac") stated that there would be 2, 3, or 4 WWTFs, that utilize surface impoundments (not 4-5 as noted in the Proposed Rule). In addition, Dynamac also estimated what the number of WWTFs that utilize surface impoundments would be if EPA had called all of the 24 WWTFs, instead of just 9. Dynamac estimated that if all 24 WWTF were contacted and only one of the WWTF utilized a surface impoundment statistically there would only be 2 estimated surface impoundments utilized by the entire paint manufacturing industry.[33] Furthermore, Dynamac made it very clear that the estimated number of WWTFs and WWTFs that utilize surface impoundments are only estimates and that the potential for bias exists.

NPCA contacted the remaining WWTFs and found that of the remaining 12 facilities (three facilities are no longer in business), none used surface impoundments (see "CWT Information Table" attached herewith for details). Based on EPA statistics there would only be one unidentified surface impoundment in addition to the identified McKittrick Waste lined surface impoundment for a total of 2 WWTFs utilizing surface impoundments, less than half of the estimated amount EPA used to justify its risk assessment of unlined surface impoundments.

In addition, the EPA is in the process of characterizing risks to human health and the environment associated with management of decharacterized wastes in impoundments, as they are part of the Clean Water Act (CWA) treatment system. As part of this study EPA screened approximately 2,000 non-hazardous "onsite" surface impoundments and surveyed approximately 150 of these facilities. As stated in the attached memorandum to file, the EPA found no paint manufacturing related non-hazardous "onsite" surface impoundments.[34] Clearly this information again indicates that EPA's assumptions about surface impoundments for the paint manufacturing industry are in error and cannot form the basis for its assumption of a "plausible management scenario."

EPA stated that it was seriously considering not listing paint production liquids because an unlined surface impoundment is not a plausible management scenario since the use of surface impoundments at WWTFs (regardless of liners) was found to occur so infrequently — only 4-5 such impoundments speculated by EPA (2 according to EPA's contractor) may be receiving any of the paint manufacturing liquids from the estimated 972 paint manufacturers.[35] Based on the additional work done by the NPCA, EPA should also make a no-list determination for paint production liquids. Surface impoundments, particularly unlined surface impoundments, are not a plausible risk management scenario and a listing determination based on this assumption is arbitrary and can not be supported.

EPA stated that its surface impoundment waste assumptions are based on an on-site surface impoundment study and may not be realistic for off-site commercial WWTFs.[36] NPCA agrees that EPA's waste assumptions are unrealistic in this regard. EPA database contains units with characteristics that are unlikely for large off-site treatment facilities, i.e. small units (median area 3,200 square meters) and have low flow rates with long retention times (retention time about 0.5 years, percentile retention time of 50 years.). This translates to many of the small impoundments used in the modeling contained a high fraction of paint wastes (90^{th} percentile - all paint waste), not representative of actual management scenarios.[37] The EPA believes, and NPCA agrees, that commercial facilities would be larger and have shorter retention times, thereby reducing the average fraction of paint manufacturing waste in the units.

In fact, NPCA contacted the McKittrick Waste facility and found that of all the liquid wastes accepted for surface impoundment treatment in 1998, only approximately 3% of the wastes came from the paint manufacturing industry.[38] Clearly EPA's surface impoundment assumptions arbitrarily overestimated any surface impoundment risks. Taking into account a more accurate figure for the amount of waste entering surface impoundments in EPA's risk assessment model (e.g. the actual fraction of paint manufacturing waste entering the only documented surface impoundment was 3%), would significantly reduce or eliminate the modeled risk associated with paint production liquid waste. This is yet one more reason for EPA to appropriately make a no-list determination for liquid paint production wastes.

The EPA did not consider the information regarding pretreatment of paint manufacturing liquids prior to further treatment in a surface impoundment. The NPCA found that 9 of the 24 paint manufacturing waste liquids were pretreated prior to being shipped off to a WWTF. In addition, many of WWTFs that accepted paint manufacturing waste liquids also pretreated the liquids prior to other advanced treatment operations. Primary treatment usually included precipitation of solids; some facilities added chemicals to enhance precipitation of solids. The NPCA believes that this pretreatment would result in as much a 90% reduction in the concentration (as a result of removed total suspended solids) of constituents modeled to be present in waste liquids.[39]

The NPCA believes that the EPA inaccurately assessed the risk associated with surface impoundments because the Agency ignored the reduction in waste liquid concentrations as the result of pretreatment of these liquids at the paint manufacturing facility and/or WWTF. If pretreatment of waste liquids was taken into account in EPA's risk assessment, it would significantly reduce the modeled risk associated with paint production waste liquids thereby warranting a no-list determination for this waste stream.

The EPA states that a synthetically lined impoundment with a finite operational life of perhaps 30-50 years is less likely to release wastewater during the life of the unit. During operation, leaks in the liner system would be detected and presumably fixed; active use of an impoundment can be stopped, drained, and liners repaired. Also the leachate collection system is likely to prevent a significant

release during operation.[40] The NPCA emphatically agrees with these liner assumptions. Composite or double lined surface impoundments offer the best level of protection possible, therefore the risks associated with the McKittrick or other lined surface impoundments would be minimal and should be the appropriate standard with which to model the potential risks posed by paint production waste liquids.

EPA based its management scenarios and ultimate listing determination in the Proposed Rule for liquid paint production wastes on unlined surface impoundments. As discussed above, this was due to one WWTF, which actually utilizes double lined surface impoundment as well as solar evaporation due to its unique geographic location. In evaluating plausible waste management scenarios for risk assessment purposes, EPA must take into account a combination of factors, which they failed to do in this rulemaking. Specifically, EPA did not consider the extent to which this "plausible management scenario" which was calculated to cause the highest risk is practiced. Management practices EPA believes probably would occur infrequently are less determinative in the final listing determination process.[41] However in this case there is nothing in the record that even suggests that the practice occurs infrequently if at all. In this case only one surface impoundment was in use by the paint industry and that surface impoundment, uniquely located and able to use evaporation techniques, was double lined. In addition, this surface impoundment only accepted wastes from two identified paint manufacturers, accounting for only 101 metric tons of the EPA estimated 35,983 metric tons of paint production waste liquids (.3%) in the Proposed Rule. Clearly this figure, even based on EPA's overestimation of the wastes volumes of the paint industry as a whole, illustrates how rare the use of surface impoundments are for paint industry waste liquids.

Despite the use by the paint industry of this one lined surface impoundment EPA arbitrarily stated they would not, "at this time, rule out the possibility that some quantities of liquid paint manufacturing wastes may be managed in an unlined impoundment which would present greater risks of release to the environment.[42] By doing so, EPA also ignored another factor essential in assessing risks in listing determinations, particularly for low risk wastes such as here, namely, coverage by other regulatory programs.[43] This is improper, speculative and arbitrary Agency action. EPA improperly assessed potential risks in the Proposed Rule without taking into consideration federal, state or other RCRA programs' regulatory requirements, which provide the control necessary to eliminate any potential risks the listing determination is designed to address. EPA's assumptions regarding current regulatory requirements were based on outdated information, from 1995[44] when only 26 of the 36 States EPA modeled waste management units for had requirements for liners. NPCA, however, researched the remaining 10 states and found that all had requirements for liners, leachate detection systems, and groundwater modeling protection systems, either by regulation or on a permitted case by case basis, for non-hazardous liquids disposal.

Given the current state of regulations, the limited use and scope of surface impoundments in the industry, and the unique circumstances surrounding the one lined surface impoundment in use, there are insurmountable errors that grossly overestimate the potential risks in EPA's risk modeling for paint production waste liquids. If the modeling were rerun taken using a lined surface impoundment, it would significantly reduce the modeled risk associated with paint production waste liquids thereby warranting a no-list determination for this waste stream. Should paint production liquid wastes be arbitrarily listed in the final rule, over NPCA's objections, paint production liquid wastes should be considered non-hazardous, or exempted from the final rule, unless they are managed in unlined surface impoundments.

29 66 Fed. Reg. 10102 (Feb. 13, 2001).

30 Id at 10109.

31 "Memo to David Carver from Paul Denault of Dynamac Corporation," October 4, 2000.

32 66 Fed. Reg. 10108 (Feb. 13, 2001).

33 "Memo to David Carver from Paul Denault of Dynamac Corporation," October 4, 2000.

34 "Memo to File from David Darling of NPCA," Mar. 13, 2001.

35 66 Fed. Reg. 10108 (Feb. 13, 2001).

36 "Screening Survey of Industrial Subtitle D Establishments," Draft Final Report, Schroeder, K., R. Clickner, and E. Miller, 1987, Prepared for the Office of Solid Waste, U. S. Environmental Protection Agency by Westat, Inc., Rockville, MD.

37 66 Fed. Reg. 10109 (Feb. 13, 2001).

38 "Memo to File from David Darling of NPCA" Mar. 20, 2001 (attached herewith and incorporated by reference).

39 "Wastewater Engineering, Treatment, Disposal and Reuse", page 302, Metcalf and Eddy, Inc, 1991.

40 66 Fed. Reg. 10108 (Feb. 13, 2001).

41 66 Fed. Reg. 66075 (Feb. 13, 2001).

42 Id at 10079 (Feb. 13, 2001).

43 "Dye and Pigment Industries; Hazardous Waste Listing Determination Policy," 59 Fed. Reg. 66072 (Dec. 22, 1994).

44 "State Requirements for Industrial Non-Hazardous Waste Management Facilities," U.S. Environmental Protection Agency, October 1995

(PMLP 00033. NPCA, page 21, 22, 23, 24, 25, w/attachments)

RESPONSE

As discussed in Section IV.A of the final determination, we have determined not to list liquid wastes from paint production as proposed (K180). After reviewing the information in the comments and reconsidering the available information, we agree with the commenters that the use of surface impoundments for treatment of paint manufacturing waste liquids appears to be even less frequent than we estimated at the proposal. Our data for the surveyed facilities show that one off-site CWT facility used surface impoundments to treat paint manufacturing wastes, and probably no more than two such facilities are likely to exist nationwide that accept liquid wastes from paint manufacturers.[4] The one facility that we found to use impoundments has only lined impoundments, and we have no indication that off-site unlined impoundments are used for this waste.[5] Therefore, we concur that the management scenario we modeled, an unlined surface impoundment, does not appear plausible, because the factual record does not support a finding that this management scenario is either currently in use or is likely to be used in the future (for further discussion of EPA's concept of plausible management see the proposed rule for solvent wastes at 61 FR 42323, August 14, 1996, and also the final determination for solvents at 63 FR 64384, November 19, 1998).

As noted in the proposed rule, we also believe that the level of protection afforded by a liner system could be significant for a surface impoundment, which will contain liquid wastes only during its operating life (66 FR 10108). A lined impoundment with a finite operational life (30 to 50 years) is less likely to release liquids; releases to the subsurface would be reduced due the liner and leachate collection system in place. If, however, leaks occurred in the liners of such an impoundment during its operating life, the unit can be drained and repaired before continued use. Therefore, we do not believe the risk analysis presented in the proposal for unlined impoundments can be applied to lined impoundments. For this reason, we are not listing the liquid paint wastes. We believe that our decision is further supported by the considerations given below and other considerations presented in the sections in this document related to constituent presence (VIII.A) and other regulatory controls (VIII.J).

In the proposed rule, we also discussed the likelihood that EPA's groundwater modeling scenarios contain impoundments with characteristics that are unlikely for large off-site treatment facilities, i.e., small units with low flow rates and long retention times (66 FR 10108). This is because the database we used for impoundment parameters contained data for on-site units, which may not be

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[4]See Table 4 in the memo from Paul Denault, Dynamac Corp., to Dave Carver of EPA, October 4, 2000. Knowing the "true" value for the number of impoundments for the facilities in the survey to be one, the number of impoundments for the total population of facilities of interest was estimated to be two.

[5]The 3007 Survey data also did not show any facilities using on-site surface impoundments for paint manufacturing wastes.

representative of off-site commercial CWT facilities. This means that many of the small impoundments used in the probabilistic modeling contained a high fraction of paint wastes. We suggested that this may not be representative of actual off-site commercial treatment units, which are likely to be larger, and that paint wastes would make up a smaller fraction of

wastewaters in such units. One commenter contacted the CWT facility that reported a surface impoundment and found that approximately 3% of all the liquid wastes accepted for surface impoundment treatment in 1998 came from the paint manufacturing industry (PMLP 00033, NPCA). The commenter argued that if EPA used a more accurate estimate of the fraction of paint manufacturing wastes managed in surface impoundments (e.g., 3%), then this would significantly reduce or eliminate risks in EPA's assessment.

After considering all the available information, we agree that the assumptions for the unit characteristics that we used for modeling likely resulted in an overestimate of possible risks from a surface impoundment. As noted in the proposal, the database of impoundments we used in modeling yielded a 90th percentile value of one for the fraction of paint manufacturing waste in impoundments, i.e., 100% of the liquid waste was assumed to be from paint manufacturing. While we did not attempt to quantify the effect of changing the waste fraction through modeling, we believe that using the much smaller waste fraction reported for the one known impoundment (3%) would reduce risks by over an order of magnitude. Thus, this is an additional factor that would make any significant risks from an impoundment scenario unlikely.

4. Landfills

SUMMARY OF COMMENTS

The Agency received five comments on this specific issue. Two from associations and two from industry requested that EPA consider disposal in Subtitle C landfills or nonhazardous waste landfills meeting the performance criteria of 40 CFR part 258 as a contingent management alternative for paint production waste solids. Commenter also stated that EPA inappropriately modeled all paint production solid wastes in a Subtitle D unlined landfill when regulations in all 36 states that EPA considered in its modeling currently require liners. Commenters also suggested that a K179 listing only apply to wastes containing antimony and going to a landfill.

VERBATIM COMMENTS

If per chance the listing stands, it should only apply to wastes that contain antimony and are destined for landfilling.

(PMLP 00003. PPG Industries, page 2 [from 9B1])

The Council encourages the EPA to consider direct disposal *(i.e.,* without prior treatment) in Subtitle C landfills or nonhazardous waste landfills meeting the performance criteria of 40 CFR Part 258 as a contingent management alternative for paint manufacturing waste solids, including solid off-specification products. To qualify for the conditional exclusion, generators would need to maintain documentation showing that the waste is not otherwise placed on the land prior to final disposal, similar to the contingent management listing the EPA recently promulgated for EDC/VCM wastewater treatment sludges. See Chlorinated Aliphatics Production Wastes, 65 Fed. Reg. 67068 (Nov. 8, 2000). Such an approach would significantly reduce the overall burden of the listing while ensuring that wastes were managed in facilities equipped with adequate and appropriate controls to prevent releases to air, soil, groundwater and surface water.

As evidenced in responses to the EPA's survey of the industry, management of paint manufacturing waste solids in landfills is predominant, including solid off-specification products. For instance, based upon Table 4-7 in the Listing Background Document, approximately 85% of all paint manufacturing waste solids were discarded in either a Subtitle C hazardous waste landfill, or a Subtitle D municipal or industrial nonhazardous waste landfill. Moreover, approximately 41% of these paint manufacturing waste solids disposed of in landfills were discarded in landfills which clearly meet or exceed the performance criteria of 40 CFR Part 258. Nevertheless, no survey respondents indicated that they were disposing of nonhazardous paint manufacturing waste solids in unlined landfills.

Looking at the same information from a volume perspective is more compelling. Specifically, based upon EPA background documents, of the approximately 54 facilities responding that they disposed of paint manufacturing waste solids in a Subtitle D municipal or industrial nonhazardous waste landfill, 70% of the volume was discarded in confirmed, lined landfills. Further, more than one-third of the remaining 30% was reported to be disposed of in Subtitle D municipal landfills, suggesting that the volume of paint manufacturing waste solids currently managed in lined municipal and industrial nonhazardous waste landfills may be as high as 81%.

The Agency has evaluated potential threats to human health and the environment from disposal in landfills that include a liner, as well as other protective controls. Specifically, the EPA's recent final decision to list VCM-A sludges as hazardous was based upon a Subtitle C landfill scenario. See Chlorinated Aliphatics Production Wastes, 65 Fed. Reg. at 67098. Furthermore, risk assessment modeling underlying the Agency's Draft Guide for Industrial Waste Management also considers liner system design towards guiding facility managers, state and tribal environmental managers and the public through the process of developing protective practices for managing industrial waste. However, the proposed concentrations for the paint waste listing are based on managing the wastes in unlined landfills. Based upon this approach, the Council expects that, if the Agency were to base the risk assessment on lined landfills, the predicted levels of constituents in the proposed paint wastes would increase by at least an order of magnitude. In other words, using lined landfills as the risk assessment basis, concentrations of constituents in paint manufacturing waste solids that indicate a potential threat to human health and the environment would likely exceed those levels reasonably expected to be present in the wastes.

In summary, permitting disposal of paint manufacturing waste solids in a Subtitle C or nonhazardous waste landfill meeting the performance criteria of 40 CFR Part 258 as part of a conditional listing is a sensible, protective solution. Without such an alternative, generators and TSDFs managing these wastes are subject to costly and unnecessary Subtitle C regulation without significant benefit to human health and the environment. Specifically, it results in "treatment for treatment's sake." Thus, the Council strongly recommends that this proposed contingent management alternative be a part of any final decision to list paint manufacturing waste solids as hazardous.

(PMLP 00030. ACC, page 7, 8)

EPA was overly conservative in its landfill risk modeling assumptions. There were 54 facilities that reported on their RCRA ICR sending solid wastes to either municipal or Subtitle D landfills in 26 states. Although EPA had this specific information regarding the amount of solid wastes being disposed of in municipal landfills and Subtitle D landfills, and found no facilities using unlined landfills,[45] EPA inappropriately and arbitrarily modeled all paint production solid wastes (both municipal and Subtitle D) in a Subtitle D unlined landfill. Not only did this modeling mischaracterize current management practices of the industry, it overestimated the amount of wastes being disposed of as Subtitle D industrial landfills, which are smaller than municipal landfills (therefore the proportion of paint waste in Subtitle D landfills would be larger).[46] Given the reported volume information EPA possessed, EPA should have modeled both municipal and Subtitle D landfills separately, thereby accurately assessing any risks posed.

In addition, EPA should not have modeled unlined landfills. Based on the actual survey results, knowledge of the paint industry, disposal and treatment facilities and current state regulations, EPA should not have modeled unlined landfills in this rulemaking. As with surface impoundments, EPA modeled unlined landfills based upon the "plausible mismanagement" generic scenario and outdated waste management practices.

Again, although no unlined landfills were reported, EPA assumed that every landfill in all 26 states reported, and all 36 states modeled, was unlined. This assumption is simply not plausible and arbitrarily overestimates the potential risk from the disposal of paint production waste solids. NPCA member companies have been surveying their waste disposal and treatment facilities and have not found any examples of either an unlined landfill or surface impoundment being used for waste treatment or disposal. Furthermore, based on NPCA research, currently 36 out of 36 States that EPA modeled all require liners either by regulation or on a permitted case by case basis for non-hazardous solid waste disposal. Therefore, in order for the risk assessment for paint production solids to have been even theoretically useful it would have to rest on a lined landfill, not an unlined landfill model. Any rulemaking that goes forward, despite NPCA objections, must be based on actual waste management practices.

45 “Solid Residuals Sent to Municipal Landfills and Subtitle D Industrial Landfills, “(Docket No. PMLP-50321).

46 66 Fed. Reg. 10078 (Feb. 13, 2001).

(PMLP 00033. NPCA, page 25, w/attachments)

NPCA encourages the EPA to consider disposal in a Subtitle C or non-hazardous waste landfill meeting the performance criteria of 40 CFR 258 as a contingent management alternative for paint manufacturing waste solids, including solid off-specification products. Should a hazardous waste listing determination be promulgated over NPCA objection, generators could qualify for the conditional exclusion by maintaining documentation showing that the waste is not otherwise placed on the land prior to final disposal, similar to the contingent management listing the EPA recently promulgated for EDC/VCM wastewater treatment sludges.[64] Such an approach would significantly reduce the overall burden of the listing while ensuring that wastes were managed in facilities equipped with controls to prevent releases to air, soil, groundwater and surface water.

As evidenced in responses to the EPA’s survey of the industry, management of paint manufacturing waste solids in landfills is predominant, including solid off-specification products. For instance, based upon Table 4-7 in the Listing Background Document, approximately 85% of all paint manufacturing waste solids were discarded in either a Subtitle C hazardous waste landfill, or a Subtitle D municipal or industrial non-hazardous waste landfill. Moreover, approximately 41% of these paint manufacturing waste solids disposed of in landfills were discarded in landfills which clearly meet or exceed the performance criteria of 40 CFR 258 (i.e., Subtitle C or Subtitle D municipal waste landfills). Nevertheless, no survey respondents indicated that they were disposing of non-hazardous paint manufacturing waste solids in unlined landfills.

Looking at what NPCA believes to be the same information from a volume perspective is more compelling. Specifically, based upon EPA background documents, of the approximately 54 facilities responding that they disposed of paint manufacturing waste solids in a Subtitle D municipal or industrial non-hazardous waste landfill, 70% of the volume was discarded in confirmed, lined landfills. Further, more than one-third of the remaining 30% was reported to be disposed of in Subtitle D municipal landfills, suggesting that the volume of paint manufacturing waste solids currently managed in lined municipal and industrial non-hazardous waste landfills may be as high as 81%.

EPA has a demonstrated ability to evaluate potential threats to human health and the environment from disposal in landfills that include a liner, as well as other protective controls. Specifically, the EPA’s recent final decision to list VCM-A sludges as hazardous was based upon a Subtitle C landfill scenario.[65] Furthermore, risk assessment modeling underlying EPA’s “Draft Guide for Industrial Waste Management”[66] also considers liner system design towards guiding facility managers, state and tribal environmental managers and the public through the process of developing protective practices for managing industrial waste. Based upon the high concentrations resulting from the EPA’s assessment of risks from modeled unlined landfills, NPCA expects that predicted concentration levels of constituents of concern from evaluating lined landfills would increase by at least an order of magnitude. In other words, we believe concentrations indicia of a potential threat to human health and the environment for constituents of concern in paint manufacturing waste solids would likely exceed those levels reasonably expected to be present in the wastes.

In summary, permitting disposal of paint manufacturing waste solids in a Subtitle C or non-hazardous waste landfill meeting the performance criteria of 40 CFR 258 as part of a conditional listing is a sensible, protective solution. Without such an alternative, generators and TSDFs managing these wastes are subject to costly and unnecessary Subtitle C regulation absent any commensurate benefit to human health and the environment. Rather, it results in "treatment for treatments sake". Thus, NPCA strongly recommends that this proposed contingent management alternative be a part of any final decision to list paint manufacturing waste solids as hazardous.

64 "Chlorinated Aliphatics Production Wastes," 65 Fed. Reg. 67068 (Nov. 8, 2000).

65 Id at 67098.

66 "Technical Background Document: Industrial Waste Management evaluation Model (IWEM), Groundwater Model to Support the Guide for Industrial Waste Management, Draft," April 13, 1999

(PMLP 00033. NPCA, page 37, 38, w/attachments)

ICI Paints encourages the EPA to consider disposal in a Subtitle C or non-hazardous waste landfill meeting the performance criteria of 40 CFR 258 as a contingent management alternative for paint manufacturing waste solids, including solid off-specification products. In order to qualify for the conditional exclusion, generators would need to maintain documentation showing that the waste is not otherwise placed on the land prior to final disposal, similar to the contingent management listing the EPA recently promulgated for EDC/VCM wastewater treatment sludges. Such an approach would significantly reduce the overall burden of the listing while ensuring that wastes were managed in facilities equipped with controls to prevent releases to air, soil, groundwater and surface water.

In reference to EPA's survey of the industry, management of paint production waste solids in landfills is predominant, including solid off-specification products. For instance, based upon Table 4-7 in the Listing Background Document, approximately 85% of all paint manufacturing waste solids were discarded in either a Subtitle C hazardous waste landfill, or a Subtitle D municipal or industrial non-hazardous waste landfill. Moreover, approximately 41% of these paint manufacturing waste solids disposed of in landfills were discarded in landfills which clearly meet or exceed the performance criteria of 40 CFR 258. The use of a Subtitle C or non-hazardous waste landfill meeting the performance criteria of 40 CFR 258 should be included as a contingent management alternative.

(PMLP 00039. ICI Paints North America, page 3)

Lastly, DuPont also supports limiting the scope of the proposed listings to those practices posing unacceptable risks as an adequate and appropriate alternative to defining paint manufacturing waste liquids and solids more generically. For instance, the K180 listing could specify that it would apply only to wastes managed in surface impoundments. Likewise, the K179 listing could specify that it would apply only to wastes managed in unlined landfills.

(PMLP 00041. DuPont, page 19, w/attachments)

DuPont encourages the EPA to consider disposal in a Subtitle C or nonhazardous waste landfill meeting the performance criteria of 40 CFR 258 as a contingent management alternative for paint manufacturing waste solids, including solid off-specification products. In order to qualify for the conditional exclusion, generators would need to maintain documentation showing that the waste is not otherwise placed on the land prior to final disposal, similar to the contingent management listing the EPA recently promulgated for EDC/VCM wastewater treatment sludges. See Chlorinated Aliphatics Production Wastes, 65 FR 67068 (Nov. 8, 2000). Such an approach would significantly reduce the overall burden of the listing while ensuring that wastes were managed in facilities equipped with adequate and appropriate controls to prevent releases to air, soil, groundwater and surface water.

As evidenced in responses to the EPA's survey of the industry, management of paint manufacturing waste solids in landfills is predominant, including solid off-specification products. For instance, based upon Table 4-7 in the Listing Background Document, approximately 85% of all paint manufacturing waste solids were discarded in either a Subtitle C hazardous waste landfill, or a Subtitle D municipal or industrial nonhazardous waste landfill. Moreover, approximately 41% of these paint manufacturing waste solids disposed of in landfills were discarded in landfills which clearly meet or exceed the performance criteria of 40 CFR 258 (i.e., Subtitle C or Subtitle D municipal waste landfills). Nevertheless, no survey respondents indicated that they were disposing of nonhazardous pant manufacturing waste solids in unlined landfills.

Looking at the same information from a volume perspective is more compelling. Specifically, based upon EPA background documents, of the approximately 54 facilities responding that they disposed of paint manufacturing waste solids in a Subtitle D municipal or industrial nonhazardous waste landfill, 70% of the volume was discarded in reportedly lined landfills. Further, more than one-third of the remaining 30% was reported to be disposed of in Subtitle D municipal landfills, suggesting that the volume of paint manufacturing waste solids currently managed in lined municipal and industrial nonhazardous waste landfills may be as high as 81%.

The Agency has a demonstrated ability to evaluate potential threats to human health and the environment from disposal in landfills that include a liner, as well as other protective controls.

Specifically, the EPA's recent final decision to list VCM-A sludges as hazardous was based upon a Subtitle C landfill scenario. See Chlorinated Aliphatics Production Wastes. 65 FR 67098 (Nov. 8, 2000). Furthermore, risk assessment modeling underlying the Agency's draft Guide for Industrial Waste Management, 64 FR 31576 (June 11, 1999) also considers liner system design towards guiding facility managers, state and tribal environmental managers and the public through the process of developing protective practices for managing industrial waste. Based upon the high concentrations resulting from the EPA's assessment of risks from disposal in unlined landfills, DuPont expects that predicted hazard levels from evaluating lined landfills would increase by at least an order of magnitude. In other words, concentrations indicating a potential threat to human health and the environment for constituents of concern in paint manufacturing waste solids would likely exceed those levels reasonably expected to be present in the wastes.

In summary, permitting disposal of paint manufacturing waste solids in a Subtitle C or nonhazardous waste landfill meeting the performance criteria of 40 CFR 258 as part of a conditional listing is a sensible, protective solution. Without such an alternative, generators and TSDFs managing these wastes are subject to costly and unnecessary Subtitle C regulation absent any commensurate benefit to human health and the environment. Thus, DuPont strongly recommends that this proposed contingent management alternative be a part of any final decision to list paint manufacturing waste solids as hazardous.

(PMLP 00041. DuPont, page 24, 25, 26, w/attachments)

RESPONSE

As discussed in Section IV.B of the final determination, we have determined not to list waste solids from paint production as proposed (K179). Therefore, we are not addressing comments specific to various contingent management options, such as certain types of landfills, at this time. We are also not responding to comments related to the effect liners may have on risks from landfills at this time. We agree that liners would decrease releases to some extent, although we believe that the long-term effect of liner systems is uncertain. Thus, given our decision not to list paint waste solids based on our modeling of unlined landfills, any consideration of liners would not materially effect our decision. We also note that, as some commenters conceded, the 3007 survey did not provide sufficient information to state that most facilities did, in fact, dispose of waste solids in landfills equipped with liner systems.

C. Availability of analytical methods

EPA received a number of comments on the availability of analytical methods for constituents of concern in the wastes we proposed for listing. Below we provide a summary of the comments, followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not addressing comments in this section.

SUMMARY OF COMMENTS

The Agency received four comments on this issue. All commenters stated that reliable analytical methods may not exist for all the constituents of concern. Two commenters pointed out that the onus was on EPA, not industry, to ensure reliable analytical methods were available to support the rulemaking. Commenters are concerned about the capability of commercial laboratories to analyze for the chemicals of concern, especially for monomers like acrylamide.

VERBATIM COMMENTS

We are also having difficulty to determining test methods for listed monomers and commercial laboratories that can perform analyses.

(PMLP 00018. Duron Paints & Wall Coverings, page 2 ([from 10B2])

While NPCA strongly supports EPA's move toward a concentration-based listing approach in which wastes are not hazardous if specific constituents are not present above a set standard, however, in this rulemaking, EPA did not appropriately address the analytical methods necessary to implement a concentration-based listing. In fact, as described in the Listing Background Document, EPA, itself, did not perform any sampling and analysis of paint wastes in developing the Proposed Rule.[67] NPCA and member company research has discovered that some of the COCs in the Proposed Rule can not accurately be tested for and others can not be tested for at the proposed levels of concern. EPA can not regulate constituents unless commonly, economically, available analytical technology has been reliably demonstrated to accurately identity those constituents in a matrix and at the appropriate levels of concern. Furthermore, it should not be the burden of industry to demonstrate what analytical methods do and do not work and at what levels. The Proposed Rule does not list specific testing methods and EPA suggested methods are not applicable to the analyte/matrix combinations listed. It would therefore require significant research effort on the part of our industry to find, develop, or modify a method, which would provide usable data for the variety of matrices possible.

NPCA supports the American Council of Independent Laboratories (ACIL) comments (hereby incorporated by reference) on the Proposed Rule. As stated, EPA can only regulate chemicals that can be measured in the matrix of concern and to establish regulatory levels at or above the levels of analytical capability. EPA has provided no information in the administrative record to demonstrate that the COCs in the Proposed Rule can be measured at the concentrations of concern in paint wastes. As ACIL correctly points out, EPA must provide supporting information to demonstrate that such measurement is possible. As stated in a report by the Environmental Laboratory Advisory Board, a Federal Advisory Committee:

> *In support of new regulations, USEPA should employ or develop laboratory methods that have been demonstrated to be capable of achieving the regulatory compliance monitoring requirements. In order to assure the quality of the science used in the development of regulations, USEPA should submit all the technical studies used to develop a regulation to peer review as part of the regulatory process, prior to finalizing any such regulation.*

EPA must demonstrate that any new or revised regulatory measurement requirements are achievable on samples that represent the same level of analytical challenge as the matrix for which the regulation is intended. Supporting data should address not only method development but also the successful application of the method in the context of its intended regulatory use.

For example, a review of SW-846 indicates two possible methods for the measurement of Acrylamide, Methods 8032A and 8316. Method 8032 is a gas chromatography electron capture detection (GC/ECD) method from measuring acrylamide in water. The first step in the procedure is a chemical bromination reaction with detailed steps appropriate for a water sample. The method does not describe how to perform this reaction on non-aqueous matrices. It is likely that this reaction would not be appropriate on highly organic paint wastes. (The method describes pipetting 50 mL of sample, dissolving 7.5 g of Potassium Bromide, adjusting the pH, adding 2.5 mL of saturated bromine water, etc., — all activities that are inappropriate for a highly organic semi-solid matrix.) The next step in the procedure is an extraction with Ethyl Acetate. Again, while this extraction is appropriate for an aqueous sample, it is unlikely that this solvent could be used on paint wastes. The method contains no data that indicates this method has been used on anything other than aqueous matrices.

Method 8316 is a high performance liquid chromatography (HPLC) for water samples. A 200 uL aliquot of the sample is directly injected into the HPLC. The method does not describe how any sample matrix that cannot be injected with a syringe is to be analyzed. No performance data is provided in the method. A review of all SW-846 methods compared to the analytes listed in Tables P1-A and P1-B of the Proposed Rule shows that no performance data exists for any method that demonstrates these constituents can be measured in paint wastes at the regulatory levels proposed.

NPCA contacted a National Environmental Laboratory Accreditation Conference (NELAC) laboratory[68] to verify the analysis of SW-846 methods on paint wastes for the COCs in the Proposed Rule at levels of concern. NPCA asked the lab to analyze paint production waste for the list of constituents in the Proposed Rule. The lab stated that they had not performed testing for Acrylamide by SW-846 8032 or 8316. The lab stated that it would have to develop a method and validation for 8032, and was therefore not able to provide a limit of quantification for Acrylamide. The lab noted that limits of quantification are highly matrix dependent; in other words, the limits of quantification typically presented are for clean soil and water matrices, not paint wastes. Paint wastes are notoriously difficult to test, as they are difficult to digest and contain various amounts of other constituents that throw off calibration. This is particularly problematic with monomeric compounds (i.e. Acrylamide, Acrylonitrile, Methyl Methacrylate) because they are labile (chemically active in the sample). It can also be an issue with the light aromatics since chromatographic interference is often realized from other solvents that may be present. Therefore, when analyzing paint, dilutions of 1 to 10 or 1 to 100 are typically common to offset other solvent constituent in the waste. If an analytical lab has to dilute the sample in order to run the test, the detection limit will likely be at or above the constituent listing standard.

In addition, NPCA's review of the methods to measure monomer concentrations indicates that there is much variability among the analytical methods and the detection limits vary widely. EPA did not evaluate the availability and/or ability of analytical methods to measure the proposed constituents down to the listing levels of concern. in addition, EPA did not actually run any analysis on any paint wastes, did not specify in the Proposed Rule what methods were available for testing or what methods would be used for enforcement purposes, instead, at a meeting with EPA on March 14, 2001, EPA stated that it was the responsibility of the generator to use an effective method. However, if no approved method exists, or if existing methods can not test for the constituents in paint wastes at proposed levels of concern, it is nearly impossible for the paint production industry to comply with this rulemaking. Again, industry should not bear the burden of proving EPA methods do not work or developing new methods that do. Thus, unless EPA can sufficiently demonstrate that "reliable methods are available to test for the presence of the COCs at the concentrations of concern, it should withdraw the Proposed Rule and enter a no-list determination on this basis alone.

Should a hazardous waste listing go forward over NPCA objections, at the very least, Acrylamide and the other monomers should still be removed, in addition, EPA should accept data that are reported as "not detected" or "below the detection limit" as long as an appropriate analytical method was used, the detection limit reported is reasonable for the matrix, and all the required Quality Assurance/Quality Control (QAIQC) information is available and determined by the generator to be adequate. This is consistent in the current "delisting" program.[69]

67 "Listing Background Document For Paint Manufacturing Listing Determination," Dec. 15, 2000, page 2-11.

68 Lancaster Laboratories, 2425 New Holland Pike, P.O. Box 12425, Lancaster, Pennsylvania 17605-2425.

69 61 Fed. Reg. 50241 (Sept. 25, 1996).

(PMLP 00033. NPCA, page 38, 39, 40, w/attachments)

In the Proposed Rule EPA did not appropriately address the analytical methods necessary to implement a concentration-based listing. In fact, as described in the Listing Background Document EPA did not perform any sampling and analysis of paint wastes in development of the Proposed Rule. We are concerned that some of the constituents listed in the Proposed Rule can not accurately be tested for and others can not be tested for at the proposed levels of concern. EPA should not regulate constituents unless commonly, economically, available analytical technology has been demonstrated to accurately identity those constituents at the appropriate levels of concern. EPA has placed the burden on the industry to demonstrate what analytical methods do and do not work. The

Proposed Rule does not list specific testing methods and EPA suggested methods that are not applicable to the analyte/matrix combinations listed.

EPA must demonstrate that any new or revised regulatory measurement requirements are achievable on samples that represent the same level of analytical challenge as the matrix for which the regulation is intended. Supporting data should address not only method development but also the successful application of the method in the context of its intended regulatory use.

(PMLP 00039. ICI Paints North America, page 3 ([from 10B2])

EPA used three criteria to determine which constituents should be considered in this Rule. First there should be available toxicological data, second, there should be adequate physical/chemical data and finally there should be validated analytical procedures for all COPCs. DuPont finds that reliable analytical methods may not exist for all COPCs.

While DuPont supports the general methodology the Agency followed in selecting constituents of potential concern, we remain concerned that the EPA may not fully appreciate the analytical challenges and related costs associated with this proposal. As it relates to the identification of constituents that could be readily tested in paint wastes, the Agency relates in the preamble that it specifically looked for "reliable methods available to test for the presence of constituents at concentrations of concern in order to implement a concentration-based listing". More specifically, the Agency "identified those constituents with available SW-846 analytic methods". 66 FR 10084 (Feb. 13, 2001). With regard to analysis of a paint-related matrix, DuPont is genuinely concerned that the concentration-based listing levels for constituents of potential concern may be significantly lower than achievable Practical Quantitation Limits (PQLs) for the methods commonly used to analyze for these constituents. Moreover, we are particularly concerned about the capability of commercial laboratories regarding analysis for acrylamide.

In the preamble to the proposed rule, the EPA sought comments and supporting information with respect to the proposed list of constituents and the levels at which they are likely to appear in paint wastes. 66 FR 10103 (Feb. 13, 2001). In response, DuPont contacted two nationally accredited commercial laboratories and requested that each lab develop an "analytical action plan", considering the list of available SW-846 analytical methods provided by the Agency and other methods which the lab deemed appropriate. Both responses, including anticipated costs associated with each proposal, are included in Attachment B.

In general these responses relate the difficulties, likely interferences and significant inexperience among both labs in analyzing for the constituents of concern in a paint or paint-related matrix. Further, these labs have little or no experience analyzing for acrylamide in any matrix. Thus, as many, if not most, of the available methods are not applicable to a paint-related matrix, with the possible exception of wash water (which can contain up to 12% solids, i.e., binder), it would require a significant research effort to find, develop, or modify a method which would provide usable data. The monomeric compounds listed (acrylamide, acrylonitrile and methyl methacrylate) are particularly problematic because they are labile (chemically active in the sample). Analysis can also be an issue with the light aromatics since chromatographic interference is often realized from other solvents that may be present. Therefore, when analyzing paint-related matrices, dilutions of 1 to 10 or 1 to 100 are typically common to offset other solvent constituents in the waste. If an analytical lab has to dilute the sample in order to run the test, the quantitation limit will likely be at or above the constituent listing level.

While DuPont, conceptually, supports a concentration-based listing approach, in this case, the Agency clearly has not demonstrated that "reliable methods [are] available to test for the presence of constituents at concentrations of concern in order to implement a concentration-based listing". 66 FR 10084 (Feb. 13, 2001). In fact, as described in the Listing Background Document, the Agency, itself, did not perform any sampling and analysis of paint wastes in developing the proposed rule. As a general rule, the EPA should not regulate constituents unless available analytical technology has been demonstrated to accurately identify those constituents in a germane matrix and at the appropriate levels of concern. Otherwise, if no appropriate method exists, or if existing methods cannot test for the constituents in paint wastes at proposed levels of concern, it is nearly impossible for the regulated community to comply. It should not be the burden of industry to demonstrate what analytical methods do and do not work and at what levels.

Thus, unless the Agency can sufficiently demonstrate that "reliable methods [are] available to test for the presence of [any one or more] constituents at concentrations of concern in order to implement a concentration-based listing", it should withdraw its proposal to list paint manufacturing wastes as hazardous. 66 FR 10084 (Feb. 13, 2001). At the very least, acrylamide should be removed from the list of constituents of concern.

Should the Agency reject our recommendation in whole or in part, if a chemical otherwise expected to be present in the waste cannot be detected, the EPA should then accept data that are reported as "not detected" or "below the detection limit" as long as an appropriate analytical method was used, the detection limit reported is reasonable for the matrix, and all of the required Quality Assurance/Quality Control information is available and determined by the generator to be adequate. This is consistent with the approaches taken in the current delisting program. See 61 FR 50241 (Sept. 25, 1996).

(PMLP 00041. DuPont, page 11, 12, w/attachments)

RESPONSE

As discussed in Section IV of the final determination, we have determined not to list waste solids or waste liquids from paint production as proposed (K179 and K180). As a result, we are no longer requiring any analyses of these wastes under a listing for paint wastes. Therefore, we are not addressing comments related to the availability of analytical methods for the proposed constituents of concern.

D. Defining waste solids and liquids

EPA received a number of comments on the definition of waste solids and liquids in the proposed rule. Below we provide a summary of the comments, followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not addressing comments in this section.

SUMMARY OF COMMENTS

The Agency received six comments, two from associations and four from industry on the definition of waste solids and liquids. Five of the commenters supported the use of the Paint Filter test to distinguish between paint waste liquids and solids. One of the trade associations deferred to comments from specific paint manufacturers on this question.

VERBATIM COMMENTS

The paint filter test has been used by industry for a number of years to distinguish solids from liquids. If the listings go forward, PPG would support using this test to define liquids and solids.

(PMLP 00003. PPG Industries, page 2)

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EPA seeks comment on whether and how to distinguish solids from liquids for listing determination purposes. API is opposed to the introduction of any mechanism to generically make this determination. However, if EPA deems it necessary to develop a clear definition for this rulemaking, API recommends Option 2 - the "Paint Liquids Filter Test" -- which has been a longstanding and seemingly suitable method for paint waste determinations. API concurs with EPA that this approach appears logical, since it is already used as a waste disposal criterion for ensuring compliance with the prohibition of liquids in landfills. API urges EPA not to further complicate the determination of liquids and solids by introducing a new definition that would base the distinction on defining what constitutes a "solid," using a solids percentage, as suggested in Option 1.

Option 3, which follows the current definition of wastewater and non-wastewater for land disposal restrictions purposes should also not be adopted for waste determination purposes. The low total suspended solids (TSS) percentage of 1% that distinguishes a wastewater from a non-wastewater does not define a "solid" material or logically distinguish between landfill and wastewater treatment management methods.

Therefore, if absolutely necessary to select among these three options for distinguishing between a solid and a liquid waste, API recommends adopting the Paint Liquids Filter Test. Additionally, API urges EPA to clarify that the selected definition is specific to this rulemaking and should not be utilized for any other regulatory purposes, except where already used.

(PMLP 00015. API, page 4)

Furthermore, it is our belief that the Paint Filter test should be used to distinguish between paint waste liquids and solids. The paint filter test has a long history in RCRA as being used to distinguish liquid wastes from solids. The test is obviously well understood and accepted in the paint industry. It is also a test that is easily conducted and without expensive and in some cases unavailable equipment and without much technical expertise. Its simplicity, availability and reliability should make the Paint Filter Test the mechanism to distinguish between a liquid waste and a solid waste, as is presently the case with RCRA.

(PMLP 00023. Delta Laboratories Inc., page 2)

The EPA is proposing different listing levels for waste solids and waste liquids. These levels are based on the risk assessment for various scenarios for disposal of solids (landfill) and the liquids (surface impoundments). At the same time, EPA is soliciting comments on whether or not it should set a clear definition of solid and liquid.[74] It is unclear how EPA proposed any listing determination for paint production waste solids or liquids without first defining these terms and then appropriately analyzing potential risks based on these defined categories. While NPCA appreciates the difficulty with which these terms may be defined in the context of paint and paint related materials, this did not excuse EPA from its RCRA mandated task. Furthermore, should this listing determination go forward over NPCA's objections, and EPA finalizes a rule based on a definition not already used to accurately assess any potential risks posed by paint production wastes, the listing determination would have to be reopened for comment. The lack of EPA analysis on this issue is particularly disturbing given the proposed "concentration based" listing and proposed contingent management scenarios. Both these concepts demand an accurate and appropriate definition of solid and liquid before they can be adequately assessed. Any change in the definition (assuming EPA used any definition to begin with) would necessarily require a change in the assessment of particular COCs, concentration levels of concern, and contingent management scenarios. The request for comment on whether or not to set a clear definition of these terms in the Proposed Rule is additional evidence of EPA's lack of fact data and arbitrary reliance on speculative and hypothetical scenarios.

NPCA is concerned, should a listing determination be promulgated over NPCA objections, without a clear definition with which to comply with, that the implementation and enforcement of any listing would subject industry to various and indiscriminate interpretation. For this reason, NPCA and its members support a clear definition, and NPCA defers to company specific comments in this regard.

74 66 Fed. Reg. 10104 (Feb. 13, 2001)

(PMLP 00033. NPCA, page 45, w/attachments)

In the Proposed Rule EPA request comments on three options that address the specific definitions for distinguishing paint manufacturing waste liquids and solids. The three options presented are: (1) define paint manufacturing waste solids as those wastes containing 15% or more solids, by weight (2) use the Paint Filter Liquids Test to determine if the waste is a liquid or solid and (3) use the existing LDR definitions of wastewater (liquid) and nonwastewater (solid).

Based upon review of the above three options ICI Paints would support adoption of the Paint Filter Liquids Test for use on distinguishing between paint production waste liquids and solids.

(PMLP 00039. ICI Paints North America, page 4)

In the proposed rule, the Agency seeks comment on the need for specific definitions for distinguishing paint manufacturing waste liquids and solids, and the relative merits of three options presented or other similar options. 66 FR 10104 (Feb. 13, 2001). The three options presented may be summarized as follows:

- Define paint manufacturing waste solids as those wastes containing *15%* or more solids, by weight. By deference, wastes containing less than *15%* solids would be considered liquids.
- Use the Paint Filter Liquids Test to determine if the waste is a liquid or solid.
- Use the existing LDR definitions of wastewater (liquid) and nonwastewater (solid).

Of the three options, the EPA has historically indicated preference to using the first option (i.e., 15% solids, by weight), citing consistency with the general approach used in the risk assessment for landfills and its belief that wastes containing less than 15% solids will more frequently be managed in units associated with wastewater treatment, such as tanks and surface impoundments. 60 FR 66388 (Dec. 21, 1995) and 66 FR 10104 (Feb. 13, 2001). DuPont generally agrees with the Agency on both points and further notes the consistency between this option and the approach the EPA recently proposed for low risk wastes. See Hazardous Waste Identification Rule (HWIR), 64 FR 6343 1-3 (Nov. 19, 1999).

The principal disadvantage of this option, however, is its inconsistency with the existing definitions of wastewater and nonwastewater in Part 268 (i.e., the land disposal restrictions program or LDRs).

For example, under this option, certain paint manufacturing liquid wastes will likely be considered nonwastewaters for purposes of the LDRs. However, as the Agency

indicates in its most recent HWIR proposal, “liquid nonwastewaters” is a meaningful term and is generally recognized as a waste category distinguishable from more traditional wastewaters, both in terms of treatment alternatives and environmental concerns. Once understood, the presence of these two terms should not be expected to create difficulties for the regulated community. 64 FR 63433 (Nov. 19, 1999).

The Agency could adopt the LDR definitions of wastewater and nonwastewater (i.e., the third option) towards resolving any inconsistency between Parts 261 and 268; however, despite such an approach possibly being consistent with the risk modeling for tanks and surface impoundments, it would define all wastes containing 1% or more suspended solids or TOC as nonwastewaters. Many of these nonwastewaters are likely to be managed in wastewater treatment systems, which is inconsistent with the manner in which the concentrations for defining K179 listed hazardous wastes were derived (i.e., landfill scenario). As the Agency stated in its most recent HWIR proposal, “risk levels derived from the landfill. . . [are] not directly comparable to other units”. 64 FR 63432 (Nov. 19, 1999). Furthermore, under an LDR approach, the benefits of the Agency’s proposed contingent management listing would be severely limited.

The EPA has also proposed using the Paint Filter Liquids Test (Method 9095 in SW-846) as another option for determining whether paint manufacturing wastes are liquid or solid (i.e., second option). As the Agency correctly indicates, this method is currently used in defining the term “liquid waste” in the solid waste disposal criteria for determining compliance with the prohibition on disposing of bulk or containerized liquids in municipal landfills, and is also used in a similar manner for hazardous waste landfills. 66 FR 10104 (Feb. 13, 2001). DuPont notes that this approach is also consistent with the definition of “non-liquid PCBs” under TSCA and somewhat consistent with current Agency guidance for determining whether a liquid exists for the purpose of testing for the hazardous waste characteristics of ignitability and corrosivity. 63 FR 35387 (June 28, 1998) and 60 FR 3092 (January 13, 1995). Given that the concentration-based listing approach presented in the proposed rule draws from the concept of the toxicity characteristic to define a hazardous waste, using the Paint Filter Liquids Test to distinguish between liquids and solids could be a logical approach.

Another advantage of the second option is its consistency with the manner in which the proposed concentrations for defining K179 and K180 listed hazardous wastes were derived. That is, the concentrations for defining K180 listed hazardous waste were derived on a wet basis, whereas the concentrations for defining K179 listed hazardous waste were derived on a dry basis. Thus, for the landfill scenario, the underlying modeling begins with the premise that the waste passes the Paint Filter Liquids Test.

Application of this option would certainly not result in any increased potential threat to human health or the environment. In fact, we believe it may be the most conservative of the options presented (i.e., the majority of paint manufacturing wastes would then require evaluation opposite the broader and more conservative list of constituent concentrations for K180). Further, this approach would also provide generators of paint manufacturing wastes with the greatest degree of flexibility by not unnecessarily limiting the benefits of any contingent management approach based upon a wastes percent solids content. This is also consistent with DuPont’s experience, where paint manufacturing wastes containing as high as 50-60% solids have been effectively and efficiently managed in an off-site, tank based wastewater treatment system prior to discharge under a NPDES permit.

The only perceived disadvantage of this option is its inconsistency with the existing definitions of wastewater and nonwastewater in Part 268 (i.e., the land disposal restrictions program or LDRs). However, for the same reasons stated above for option one, DuPont believes the differences between Parts 261 and 268, once understood, would not create difficulties for the regulated community.

Therefore, based upon its consistency with the risk assessment, other Agency guidance and regulations, its added level of protectiveness, contingent management benefits, cost-effectiveness and ease of implementation, DuPont supports adoption of the Paint Filter Liquids Test towards generically distinguishing between paint manufacturing waste liquids and solids. Should the Agency decide on this or any alternative percent solids approach as part of any final rule, DuPont also recommends a testing approach consistent with that taken in the PCB Megarule. In the PCB Megarule, except in cases where it is visually determined that the waste does not flow at room temperature, testing is required to determine the presence of free liquids. 63 FR 35387 (June 28, 1998).

Lastly, DuPont also supports limiting the scope of the proposed listings to those practices posing unacceptable risks as an adequate and appropriate alternative to defining paint manufacturing waste liquids and solids more generically. For instance, the K180 listing could specify that it would apply only to wastes managed in surface impoundments. Likewise, the K179 listing could specify that it would apply only to wastes managed in unlined landfills.

(PMLP 00041. DuPont, page 17, 18, 19, w/attachments)

RESPONSE

As discussed in Section IV of the final determination, we have determined not to list waste solids or waste liquids from paint production as proposed (K179 and K180). As a result, we are no longer requiring any analyses of these wastes to distinguish liquids from solids. Therefore, we are not addressing comments related to defining wastes solids and liquids.

E. Use of totals rather than TCLP for constituent concentrations

EPA received two comments supporting the use of total constituent concentration rather than TCLP constituent concentrations. Below we provide the verbatim comments received. We have determined not to list waste solids from paint production as proposed, therefore, we are not addressing comments in this section.

VERBATIM COMMENTS

The use of total constituent concentrations in the waste has several advantages. First, although NPCA was not able to evaluate the partitioning model used to establish the totals concentrations, in the limited time allotted for comments on the Proposed Rule, NPCA generally agrees that it is appropriate to account for periodic placement of the waste in a unit, closure of the unit after an appropriate number of years, as well as volatilization and biodegradation of any constituents while in the unit in establishing concentration-based listing levels. As EPA correctly points out, a test method like the TCLP does not reflect these factors.

Second, prescribing a leachate method, such as the TCLP, as part of any final rule severely limits the flexibility of the analytical laboratory to modify test methods or use more updated analytical techniques to deal with the anticipated analytical challenges associated with paint waste matrices. Thus, use of total constituent concentrations in the waste would allow laboratories the flexibility to determine the most appropriate and reliable analytical methods and techniques, resulting in the most accurate and precise measurement of any potential constituents of concern.

Third, as discussed elsewhere in these comments, NPCA fully supports the use of process knowledge by all generators towards determining whether or not their paint manufacturing wastes are hazardous. Thus, use of total constituent concentrations in paint wastes better facilitates the use of process knowledge by generators because it is more directly related to the exacting formulas followed to produce paints and coatings, versus predicting the concentration of a constituent that may leach from a paint waste.

Finally, use of total constituent concentrations in the waste avoids any potential inconsistency with the manner in which EPA completed its risk modeling. In establishing the leachate concentrations for paint waste solids, EPA arbitrarily modeled disposal in an unlined industrial non-hazardous waste landfill, whereas the TCLP is intended to represent the amount of a constituent that would be expected to leach from a waste if co-disposed in an unlined municipal waste landfill. NPCA objects to any modelling based on an unlined landfill, although this inconsistency could be overcome by specifying a leaching procedure that is more consistent with the risk modeling (e.g., the Synthetic Precipitation Leaching Procedure (SPLP)), this would result in inconsistencies with the existing hazardous waste characteristic program (i.e., TCLP) and possibly lead to confusion for the regulated community.

In light of the above, NPCA urges EPA to adopt its proposed use of total constituent concentrations in the waste as the concentration-based listing levels for paint waste solids if, in fact, a hazardous waste listing determination is promulgated over NPCA objection.

(PMLP 00033. NPCA, page 40, 41, w/attachments)

The Agency has proposed to set the concentration levels for defining hazardous paint manufacturing waste solids using the total concentrations measured in the waste itself, but seeks comment on the alternative option of using leachate concentrations from its modeling as the listing levels for these same solids. 66 FR 10105 (Feb. 13, 2001). DuPont supports the EPA's proposal to use total constituent concentrations in the waste as the concentration-based listing levels for paint manufacturing waste solids.

The use of total constituent concentrations in the waste has several advantages. First, although we have not evaluated the partitioning model used to establish the totals concentrations, conceptually we agree that it is appropriate to account for periodic placement of the waste in a unit, closure of the unit after an appropriate number of years, as well as volatilization and biodegradation of any constituents while in the unit in establishing concentration-based listing levels. As the Agency correctly points out, a test method like the Toxicity Characteristic Leaching Procedure (TCLP) does not reflect these factors.

Second, prescribing a leachate method, such as the TCLP, as part of any final rule severely limits the flexibility of the analytical laboratory to modify test methods or use more updated analytical techniques to deal with the anticipated analytical challenges associated with paint waste matrices. Thus, use of total constituent concentrations in the waste would allow laboratories the flexibility to determine the most appropriate and reliable analytical methods and techniques, resulting in the most accurate and precise measurement of any potential constituents of concern.

Third, as discussed elsewhere in these comments, DuPont fully supports the use of process knowledge by all generators towards determining whether or not their paint manufacturing wastes are hazardous. Thus, use of total constituent concentrations in paint wastes better facilitates the use of process knowledge by generators because it is more directly related to the exacting formulas followed to produce paints and coatings, versus predicting the concentration of a constituent that may leach from a paint waste.

Finally, use of total constituent concentrations in the waste avoids any potential inconsistency with the manner in which the Agency completed its risk modeling. In establishing the leachate concentrations for paint waste solids, the EPA modeled disposal in an unlined industrial non-hazardous waste landfill, whereas the TCLP is intended to represent the amount of a constituent that would be expected to leach from a waste if co-disposed in an unlined municipal waste landfill. Although this inconsistency could be overcome by specifying a leaching procedure that is more consistent with the risk modeling (e.g., the Synthetic Precipitation Leaching Procedure (SPLP)), this would result in inconsistencies with the existing hazardous waste characteristic program (i.e., TCLP) and possibly lead to confusion for the regulated community.

In light of the above, DuPont urges the Agency to adopt its proposed use of total constituent concentrations in the waste as the concentration-based listing levels for paint waste solids if, in fact, it is determined that the proposed listing is warranted.

(PMLP 00041. DuPont, page 19, 20, w/attachments)

RESPONSE

As discussed in Section IV of the final determination, we have determined not to list waste from paint production as proposed (K179). As a result, we are no longer requiring any analyses of these wastes under a listing using either total constituent analyses or TCLP methods. Therefore, we are not addressing comments related to the alternative of using leaching methods vs. total constituent analyses.

F. Change to "derived from" rule (use of listing level for exit levels)

EPA received a number of comments on the changes to the "derived-from" rule we proposed. Below we provide a summary of the comments, followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not addressing the comments in this section.

SUMMARY OF COMMENTS

The Agency received five comments, three from associations and two from industry on the relationship between the proposed listings and the "derived-from" rule. Most comments supported the use of the concentration levels as exit levels for paint production waste solids. Two comments also stated that the concentration levels should be exit levels for paint production waste liquids. One stated that if dilution is the Agency's concern, it should be specifically prohibited instead of limiting the paint production waste liquids from the exit levels.

VERBATIM COMMENTS

If either listing goes forward, the delisting criteria should be applied to both waste listings. The delisting logic implies that concentration levels are such that the wastes no longer hazardous to human health or the environment. This would apply to surface impoundments as well as landfills.

(PMLP 00003. PPG Industries, page 2)

Nonetheless, SOCMA supports this further approach to tailoring the scope of the listing rules. To date, much of the focus on "fixing" this aspect of the RCRA program has been on the various efforts to establish numerical concentration-based exit levels under the Hazardous Waste Identification Rule (HWIR). The HWIR approach relies on frequent testing and overly broad analysis of waste streams. The testing and analytical requirements associated with HWIR exit levels have been a significant concern for SOCMA members from both a cost and feasibility perspective. Consequently, SOCMA supports efforts, such as this proposal, to identify circumstances in which the automatic application of the mixture and derived-from rules is not justified. Carefully crafted listing descriptions better fulfill the mandate that the RCRA Subtitle C program should focus on high-risk wastes.

SOCMA also would like to emphasize the need for EPA to pursue additional mechanisms for resolving the unduly broad scope of the mixture and derived-from rules. In conjunction with its recent proposal to reinstate the mixture and derived-from rules, EPA described and sought comment on a number of potential exclusions from the mixture and derived-from rules developed by the American Chemistry Council (formerly the Chemical Manufacturers Association).[4] In comments on that proposal, SOCMA expressed strong support for these exclusions and urged EPA to pursue rulemaking to implement these exclusions.[5] SOCMA again urges EPA to move forward to implement these five regulatory options. Substantive relief from the mixture and derived-from rules is long overdue.

4 These regulatory options were described in some detail in the preamble to the HWIR Proposal. <u>See</u> 64 Fed. Reg. 63386-88.

5 SOCMA Comments on "_Proposed Hazardous Waste Identification Regulation. Identification and Listings of Hazardous Waste. 64 FR 63381, Nov. 19, 1999, dated February 23, 2000.

(PMLP 00012. SOCMA, page 7, 8)

API's prime concern with EPA's proposed approach for mixtures and derived-from residuals from K179 and K180 is EPA's preclusion of the use of "exit levels" for liquid wastes derived from K180 wastes. EPA proposes not to allow the use of listing concentrations as "exit levels," even after treatment. API is sensitive to EPA's concern about improper and unnecessary dilution being used as a means for some generators to avoid regulation, but we do not believe that the mixture and derived-from rules are the appropriate mechanism to address that concern. By limiting liquid residues from qualifying for exit levels, EPA is overreaching its authority to prevent abuse of RCRA regulations. The mixture and derived-from rules sweep far too broadly and bring solutions, mixtures, and liquid residues that are a legitimate result of proper management under RCRA regulation, even when the resultant mixture or residue poses little or no risk. This has always been a fundamental problem with the mixture and derived-from rules. A better way to address improper dilution is to simply prohibit it directly and expressly, with clear enforcement actions against those practicing unnecessary dilution to merely escape Subtitle C regulation. Thus, exit levels should be allowed for liquid mixtures and residues resulting from the legitimate treatment of liquid hazardous wastes.

(PMLP 00015. API, page 3)

We are interested in the Agency's proposed creation of hazardous waste listing K179 - paint manufacturing waste solids. In particular we are interested in, and support, the proposed changes in the procedure for listing and de-listing this hazardous waste, and the associated change in the "derived-from" rule. As we understand the proposal, a generator of waste, which is potentially within the K179 category, would first determine if the concentration-based listing criteria were met. If those criteria were not met, the waste would be properly classified as non-hazardous. Likewise, if a K179 hazardous waste were treated, and were thereby changed such that material analysis showed results below all of the concentration-based listing criteria, the treatment facility could de-list the material. These decisions would be self-implementing.

We understand that these proposed changes would only be applicable to waste solids from paint production, usually not involving precious metals. But we would nevertheless like to support the Agency proposal as valid in its own right and as a precedent for similar changes for other types of waste.

We believe that the general terminology presently used in some listing descriptions, and the application of the derived-from and mixture rules, have caused a number of materials to be thought to be listed hazardous wastes, even though these materials present no risk to human health and the environment because the materials are not hazardous or because there is no plausible mismanagement scenario.

A clear, self-implementing procedure is needed in such circumstances to avoid over-classification, and its unnecessary costs, by the Agency as well as by generators and treatment facilities. Your proposal establishes such a procedure.

If you have any questions or would like additional information, please let me know.

(PMLP 00038. IPMI, page 1, 2)

Another significant benefit of this approach is relief from the perverse effects of RCRA's mixture and derived-from rules. Without a concentration-based listing, the only relief from these rules requires a formal rulemaking process (i.e., delisting), unnecessarily subjecting DuPont and the overseeing agency to all the delays and costs attendant to this burdensome process.

(PMLP 00041. DuPont, page 17, w/attachments)

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RESPONSE

As discussed in Section IV of the final determination, we have determined not to list waste solids or waste liquids from paint production as proposed (K179 and K180). As a result, there is no need to consider how the derived-from rules might apply. Therefore, we are not addressing comments related to the this issue.

G. Status of landfill leachate

EPA received a number of comments supporting the temporary deferral from the listing for landfill leachate. Below we provide a summary of the comments, followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not addressing the comments in this section.

SUMMARY OF COMMENTS

The Agency received three comments, two from associations and one from industry all supporting the temporary deferral from the listing for landfill leachate. One commenter suggested that in addition to the deferral, EPA should re-evaluate the F039 multi-source leachate listing and establish concentration levels for leachate to enable them to exit Subtitle C regulation. Another commenter suggested deferring the Subtitle C regulation of landfill leachate until a separate rule making for management of residues from previously disposed of paint manufacturing wastes is promulgated. This commenter also stated that it is not clear if the deferral applies to remediation sites and the wastes generated from those sites, or if the deferral applies to wastes derived from previous leachate, gas condensate and other residues derived from previously disposed, newly listed wastes.

VERBATIM COMMENTS

WM's landfills generate hundreds of millions of gallons of leachate annually, all of which is managed in accordance with federal, state, and local regulations to ensure proper treatment prior to discharge. A variety of means are used for leachate management, to include recirculation back into the landfill, direct discharge to sewers for treatment at a Publicly Owned Treatment Works (POTW), truck hauling to a POTW, on-site pretreatment and hauling to an industrial wastewater pretreatment plant prior to POTW treatment, and direct discharge under terms of an National

Pollutant Discharge Elimination System (NPDES) permit. In establishing its Clean Water Act effluent guidelines for landfills (63 FR 6426), EPA determined that the practices described above which lead to treatment at a P0TW were protective of public health and the environment, and has identified specific effluent standards only for direct discharges. It is appropriate for EPA to defer application of the derived-from rule to MSW landfill leachate at landfills which may have historically received the subject waste streams.

The diverse methods that EPA now uses for listing hazardous waste demonstrates the need for a single, environmentally effective solution to the derived-from rule as it applies to MSW leachate. In the petroleum refinery listing, EPA employed a standard method for listing certain waste streams. As a result, with adequate records, MSW landfills could relatively easily identify whether any of the waste streams had been received prior to its designation as a hazardous waste, thereby triggering the concern with the derived-from rule for leachate. In the case of the listings for the pigment and dye industry, EPA employed a concentration-based approach, which significantly complicates the determination regarding the leachate because it requires knowledge and records not only of having received the waste stream, but also records of the precise concentration of contaminants of concern. In the listing for chlorinated aliphatics, EPA employed a third approach by granting a conditional exemption for MSW landfill leachate based on risk assessment methodology. In this listing, EPA again employs a concentration-based listing. Without judging the legitimacy of any of these approaches, WM is concerned that the result for the MSW landfill operator is one of increasing uncertainty of leachate management requirements based on which approach EPA may use for any individual listing. Although on a national scale the number of affected landfills may be relatively small for any individual listing, the cost implications for the individual landfill may be staggering, given the difference in management costs between ordinary MSW leachate and hazardous waste leachate. WM continues to believe that it is in the best interests of EPA and the MSW landfill operators, both publicly-owned and privately-owned, to develop a single solution for the derived-from issue as it applies to MSW leachate. The CWA effluent guidelines present such an opportunity, as does the pending proposed Hazardous Waste Identification Rule (HWIR), although there are now indications that EPA may not pursue the replacement of the derived-from rule with a comprehensive HWIR proposal in favor of selected management standards (such as hazardous waste combustion ash). This liability limbo for leachate management costs will continue to be of concern as long as each new hazardous waste listing must re-address the MSW landfill leachate issue.

(PMLP 00013. Waste Management/Government Affairs, page 1, 2)

EPA proposes to temporarily defer from the listings any leachate from landfills that managed these paint production wastes before they are listed as K179 and K180 hazardous wastes. EPA has often adopted this approach in its listing determinations over the past few years. In addition to continuing with these routine deferrals, EPA should re-evaluate the F039 multi-source leachate listing and establish concentration levels for leachate that would enable low concentration, low risk residuals and mixtures to exit Subtitle C.

(PMLP 00015. API, page 5)

For the newly listed wastes that could be classified as subject to Subtitle C, EPA proposes a two year deferral of regulation of leachate and gas condensate generated by such wastes so as to not disrupt the current leachate management at existing landfills.[89] This is consistent with several other similar deferrals such as for petroleum refining wastes, and wastes from the dye and pigment industries, inorganic chemical manufacturing industries, and the chlorinated aliphatics industry.

Should the listing determination go forward over NPCA objections, it is suggested that EPA defer the Subtitle C regulation of such residues until a separate rule making for management of residues from previously disposed of paint manufacturing wastes is promulgated. This would allow consistent application of standards for such wastes. Such a rulemaking would also allow for a thorough consideration of the economic impact and the impact on remediation of previously disposed wastes.

It is not clear if this deferral applies to remediation sites and to the wastes that were generated from those sites. It is not clear if this deferral also applies to wastes derived from previous leachate, gas condensate and other residues derived from previously disposed, newly listed wastes. Such wastes may have been sent to other locations that would also potentially now be required to regulate their residues under Subtitle C. NPCA suggests that should the listing determination move forward over NPCA objections, EPA defer the Subtitle C regulation of such residues until appropriate regulations governing such is promulgated, or, in the alternative, the two years proposed.

89 66 Fed. Reg. 10112-13 (Feb. 13, 2001).

(PMLP 00033. NPCA, page 52, 53, w/attachments)

RESPONSE

As discussed in Section IV of the final determination, we have determined not to list waste solids or waste liquids from paint production as proposed (K179 and K180). As a result, there is no need to consider how the derived-from rules might apply to landfill leachate. Therefore, we are not addressing comments related to the this issue for K179 and K180. Commenters also suggested that we re-evaluate the F039 multi-source leachate listing and consider a general solution for the derived-from issue as it applies to MSW leachate. The purpose of the temporary deferral was to avoid disrupting ongoing leachate management and to allow EPA to decide if any further integration is needed of the RCRA and CWA regulations consistent with RCRA Section 1006(b(1). We believe that it is appropriate to defer regulation on a case-by-case basis, when necessary. A *broader exemption for landfill leachate or F039 wastes is beyond the scope of the current rulemaking.*

H. General comments

EPA received a number of general comments on the proposed listing determinations.. Below we provide a summary of the comments, followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not addressing the comments in this section. However, Section III of this document contains detailed discussions on our use of the survey data and provides our responses to more specific comments in this area.

SUMMARY OF COMMENTS

The Agency received 22 general comments, three from associations and 19 from industry on the listing determination. Eighteen commenters did not support the listing determination and requested that the Agency promulgate a no-list determination for paint production wastes. Most of these commenters stated that the listing determination was not based on an actual assessment of the paint industry practices and that the listing would create costly and burdensome requirements on the industry. They also stated that the Agency did not factually demonstrate that the proposed listed wastes present a substantial threat to the environment. Many commenters also stated that if the Agency does finalize the proposed listing that paint production waste liquids should only be listed if they are disposed in an unlined surface impoundment. One commenter recommended that the Agency include as-generated off-specification liquid paints and coatings within the scope of proposed K180 listing or develop a conditional exemption for this wastestream from the proposed K179 listing if the waste is disposed of in non-land based units. Two commenters stated that the proposed listing will deny them options to manage their current material. One commenter stated that it supported the EPA's decision to exclude phthalate esters from the chemicals of concern.

VERBATIM COMMENTS

PPG Industries, Inc., PPG, has been monitoring the development of the above referenced rule with great interest, not only as a coatings manufacturer, but also as a respondent to the listing survey.

PPG is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments. PPG is concerned that the proposed waste listing determination does not adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. In addition, we are concerned that the proposed rule is not based on actual assessment of our industry practices. As such, the rule does not bear a realistic rational relationship to the paint manufacturing industry and the actual risks posed by the industry's waste streams. As proposed, the rule creates costly and unnecessary burdens for both our industry and the national system for managing hazardous wastes. PPG believes that paint production wastes, as defined in this rule, should not be regulated as hazardous wastes since they do not pose a significant risk to humans or the environment as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. The purpose of this letter is to request a no-list determination for paint production wastes and to document our concerns with this rulemaking should a listing determination move forward.

(PMLP 00003. PPG Industries, page 1)

PPG Industries, Inc. believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. We believe that upon further review of the above issues, EPA should conclude that a hazardous waste listing determination is unwarranted.

(PMLP 00003. PPG Industries, page 2)

The regulations propose a concentration-based listing approach for paint production waste where the RCRA status of the waste would be determined by the concentration of certain components. EPA modeled potential risks posed by a number of paint components, including three phthalate esters - butylbenzylphthalate (BBP), di(2-ethylhexyl)phthalate (DEHP), and dibutylphthalate (DBP). EPA determined that the potential risk posed by the presence of phthalate esters in paint production waste was insufficient to warrant the inclusion of phthalate esters on the list of component chemicals which may trigger RCRA listing of paint waste. We agree with EPA that phthalate esters in paint production waste pose minimal risk to human health or the environment. Therefore, EPA made the appropriate decision in excluding phthalate esters from the list of component chemicals which may trigger RCRA listing of paint production waste.

(PMLP 00007. ACC Phthalates Esters Panel, page 1)

Kelley Technical Coatings is concerned that the proposed waste listing determination does not adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. In addition, we are concerned that the proposed rule is not based on actual assessment of our industry practices. As such, the rule does not bear a realistic rational relationship to the paint manufacturing industry and the actual risks posed by the industry's waste streams. As proposed, the rule creates costly and unnecessary burdens for both our industry and the national system for managing hazardous wastes. We believe that paint production wastes should not be regulated as hazardous wastes since they do not pose a significant risk to humans or the environment as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. The purpose of this letter is to request a no-list determination for paint production wastes.

Kelley Technical Coatings believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. Upon promulgation of the final rule, should EPA review the above issues and more appropriately assess the actual risks imposed by the industry, we believe that a hazardous waste listing determination will be unwarranted.

(PMLP 00009. Kelley Technical Coatings, page 1, 2)

Star Bronze believes that latex paint production waste should not be regulated since they do not pose a risk to humans or the environment. We recently invested over $20,000 on a solvent recovery system that allows for the recycling of dirty or contaminated water or solvent, allowing for the use of the recycled material in our formulations that would have otherwise been sent to a TSD (Treatment, Storage, or Disposal Facility). The solid waste from this process that has 100% of the solvent or water fraction evaporated through baking at temperatures in excess of 300 degrees Fahrenheit is certainly not a health threat. This legislation would render our investment useless. Furthermore, existing Federal and State regulations are adequate to protect any potential risks associated with human health and the environment from paint production wastes as a whole. Therefore, Star Bronze Company respectfully requests a no-list determination for paint production wastes.

(PMLP 00014. Star Bronze Company, page 1)

First, EPA needs to revise its estimates of residual levels of the targeted hazardous constituents in paint formulations and in associated wastes. In the *Listing Background Document,* EPA explains that it "decided early on not to perform waste sampling and analysis at manufacturing facilities" (pp. 2-11) and instead chose to "use a set of known constituents in waste streams and a predetermined risk level from a set of exposure pathways to establish a protective concentration level in wastestreams."

EPA's election to forego getting real-world information on the actual composition of paint wastestreams represents, in EPC's view, a fundamental flaw in EPA's overall scheme of analysis for this rule. As was noted at the outset of these comments, the threshold question in deciding whether to list a waste stream as "hazardous" ought to be whether, and to what extent, there is a realistic human health or environmental concern that would warrant such regulation. As EPA's own analysis has shown, many of the chemicals on EPA's initial list do not occur in paint waste or do not occur at a level that would present a risk. As the next section of these comments will demonstrate, that logic should be extended to most, if not all, of the remaining chemicals EPA has targeted for regulation.

(PMLP 00017. EPC, page 7, w/attachments (from 1A))

The rule creates costly and unnecessary burdens for both Duron, Inc. and our contractors used for managing hazardous wastes. Duron, Inc. believes that paint production wastes should not be regulated as hazardous wastes since they do not pose a significant risk to humans or the environment as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. Duron, Inc. is requesting a no-list determination for paint production wastes and to document our concerns with this rulemaking should a listing determination move forward.

(PMLP 00018. Duron Paints & Wall Coverings, page 1)

Duron, Inc. believes that EPA did not meet their obligation with regard to the intent of RCRA's waste listing determination for paint production wastes. Upon promulgation of the final rule, should EPA review the above issues and more appropriately assess the actual risks imposed by the industry, we believe that a hazardous waste listing determination will be unnecessary.

(PMLP 00018. Duron Paints & Wall Coverings, page 2)

The proposed waste listing determination fails to consider and evaluate information needed to propose a rule and is not properly based on an actual assessment of industry practices. As such, the rule does not bear a rational relationship to the paint manufacturing industry and the actual risks posed by the industry' s waste streams.

EPA bases the proposed regulation on erroneous assumptions, and the proposal is therefore arbitrary and capricious, and contrary to law. As detailed in the NPCA comments, EPA's assumptions of an unlined surface impoundment in developing the paint liquids listing determination and an unlined landfill in developing the paint solids listing determination are not supportable. EPA uses numerous assumptions which arbitrarily bias the risk determinations and the proposed rule The NPCA comments clearly demonstrate that the proposed rule should be withdrawn

A proper assessment would indicate that paint production wastes should not be regulated as hazardous wastes since they do not pose a significant risk to humans or the environment as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. The proposed rule thus creates unnecessary burdens for the paint manufacturing industry Sherwin-Williams shares in NPCA's request for a no-list determination for paint production wastes.

(PMLP 00019. Sherwin Williams Co., page 1)

We are a very small business in a mature industry. The ever increasing costs of new and existing federal regulations threaten the very survival of this business and the employment of my 24 coworkers.

Cintech Industrial Coatings respectfully requests a no-list determination for paint production wastes.

(PMLP 00022. Cintech, page 1)

The Resource Conservation and Recovery Act (RCRA) permits EPA to list as hazardous only those wastes that EPA has demonstrated to present a substantial threat to the environment. RCRA requires a factual showing, rather than a mere presumption of potential harm. The required showing has not been met in this rulemaking. EPA has proposed to subject all paint manufacturing wastes to a stringent regulatory system based on broad, technically unsound assumptions and faulty statistical measures. It is clear that EPA operated under an unnecessarily accelerated schedule to finish this rulemaking and as a result failed to adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. If, in spite of our objections to the listing determination, the EPA does decide to move forward and list paint production liquids, liquids should only be listed if they are disposed of in unlined surface impoundments, all other liquids should be exempted from the rule.

(PMLP 00023. Delta Laboratories Inc., page 1, 2)

Delta Laboratories believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. Had EPA based the rulemaking on actual current industry information and practices, and not just presumptions, Delta Laboratories believes that the EPA would have realized a hazardous listing determination for paint production wastes would be unnecessary. Delta Laboratories strongly urges EPA to make a no-listing determination with regard to paint wastes in the paint manufacturing industry.

(PMLP 00023. Delta Laboratories Inc., page 4)

We are concerned that the proposed waste listing determination does not adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. In addition, we are concerned that the proposed rule is not based on actual assessment of our industry practices. As such, the rule does not bear a realistic rational relationship to the paint manufacturing industry and the actual risks posed by the industry's waste streams.

As proposed, the rule creates costly and unnecessary burdens for both our industry and the naflonal system for managing hazardous wastes. Akzo Nobel Coatings believes that paint production wastes should not be regulated as hazardous wastes, since they do not pose a significant risk to humans or the environment, as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. <u>The purpose of this letter is to request a no-list determination for paint production wastes and to document our concerns with this rulemaking should a listing determination move forward</u>.

(PMLP 00024. Akzo Nobel, page 1)

EPA's risk determination is inaccurate and unrealistic. Assumptions used in the risk determination do not represent industry wastes or disposal practices.

Data gathered via the industry survey, and subsequent extrapolation by EPA, do not adequately represent the actual practices and results of the industry.

(PMLP 00024. Akzo Nobel, page 2)

Akzo Nobel Coatings believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. Upon promulgation of the final rule, should EPA review the above issues and more appropriately assess the actual risks imposed by the industry, we believe that a hazardous waste listing determination will be unwarranted.

(PMLP 00024. Akzo Nobel, page 2)

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The paint industry agrees with and is working on the objective to reduce the use of hazardous materials in our process and our products. Industry trends clearly show this. Our customers are demanding this, as is the public and the current base of regulations. Furthermore, we are all working to reduce production of hazardous waste, not just because of regulations, but because of the loss in value associated with its creation and the cost associated with its disposal. If the definition of what constitutes hazardous waste is broadened and we are denied options to manage our current materials, I do not see how this moves us closer to our mutual goal.

(PMLP 00025. Davis Paint Company, page 1)

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Jamestown Paint Company is concerned that the proposed waste listing determination does not adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. In addition, we are concerned that the proposed rule is not based on an actual assessment of our industry practices. As such. the rule does not bear a realistic rational relationship to the paint manufacturing industry and the actual risks posed by the industry's waste streams.

(PMLP 00026. Jamestown Paint Company, page 1)

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The Resource Conservation and Recovery Act (RCRA) permits EPA to list as hazardous only those wastes that EPA has demonstrated to present a substantial threat to the environment. RCRA requires a factual showing, rather than a mere presumption of potential harm. The required showing has not been met in this rulemaking. EPA has proposed to subject all paint manufacturing wastes to a stringent regulatory system based on broad, technically unsound assumptions and faulty statistical measures. It is clear that EPA operated tinder an unnecessarily accelerated schedule to finish this rulemaking and as a result failed to adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. If the EPA does decide to move forward and list paint production liquids, liquids should only be listed if they are disposed of in unlined surface impoundments. all other liquids should be exempted from the rule.

Jamestown Paint Company believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. Had EPA based the rulemaking on actual current industry information and practices, and not just presumptions, Jamestown Paint Company believes that the EPA would have realized a hazardous listing determination for paint production wastes would be unnecessary.

(PMLP 00026. Jamestown Paint Company, page 2, 3)

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The paint industry agrees with and is working on the objective to reduce the use of hazardous materials in our process and our products. Industry trends clearly show this. Our customers are demanding this, as is the public and the current base of regulations. Furthermore, we are all working to reduce production of hazardous waste, not just because of regulation, but because of the loss in value associated with its creation and the cost associated with its disposal. If the definition of what constitutes hazardous waste is broadened and we are denied options to manage safely our current materials, I do not see how this moves us closer to our mutual goal.

(PMLP 00027. Aexcel Corp., page 1)

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In addition, the paint industry is a mature industry with sales growth of only 2% per year, so any increase in production cost associated with this rulemaking will significantly impact these small businesses. This is because, if traditionally non-hazardous latex paint wastes become hazardous wastes, many small paint manufacturing facilities will be, for the first time, fully regulated under RCRA, and therefore will be faced with additional personal, analytical and reporting, and equipment requirements. This, for an industry where, by EPA's own estimates, over half generate less than 5 metric tons of waste each year (hazardous and non-hazardous combined).

Kelley Technical Coatings believes that latex paint production waste should not be regulated since they do not pose a risk to humans or the environment. Furthermore, existing Federal and State regulations are adequate to protect any potential risks associated with human health and the environment from paint production wastes as a whole. Therefore, we respectfully request a no-list determination for paint production wastes.

(PMLP 00028. Kelley Technical Coatings, page 1, 2)

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Rohm and Haas agrees that most paint wastes are managed appropriately in tanks and containers. Rohm and Haas believes, therefore, that the proposed rule is not necessary and should not be promulgated. The paint industry operates in a responsible manner with respect to the management of paint waste. This is demonstrated by the data provided by the surveys and is reiterated in the preamble to the proposed rule. The environmental benefits of the rule will be minuscule, but the costs to paint producers, their suppliers, and the economy will be enormous.

Rohm and Haas suggests the Agency decide not to list the monomers in Appendix VIII, and not to list paint wastes as K179 and K180.Section 1004(B) of the RCRA statute defines hazardous waste as "those wastes that may present a hazard when improperly. . . managed." Under this test, these waste streams do not meet the criteria for listing as hazardous waste.

(PMLP 00031. Rohm and Haas, page 5)

NPCA is especially concerned that EPA has failed to consider and adequately evaluate essential information so that the Proposed Rule does not bear a rational relationship to the paint manufacturing industry or to its waste streams. As proposed, the rule creates costly and unnecessary burdens for both our industry and the national system for managing hazardous wastes. In general, we believe that given the tight timeframe, EPA has made broad unsound and arbitrary technical assumptions and rash decisions that would not have happened if time permitted further investigation. NPCA believes that paint production wastes should not be regulated as hazardous wastes since they do not pose a significant risk to humans or the environment as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. Further, NPCA believes that there are enough uncertainties in EPA's risk modeling for EPA to make a no-list determination for paint manufacturing wastes. The purpose of these comments is to request a no-list determination for paint production wastes and to document NPCA's serious concerns with this rulemaking should a listing determination move forward over our objections.

EPA proposed, in 1979, and again in 1980, comprehensive hazardous waste listings for paint production wastes. Wisely, EPA dropped those proposals once the Extraction Procedure (EP) Toxicity and later the Toxicity Characteristic Leaching Procedure (TCLP) criteria had been adopted. Both these tests addressed the major aspects of solvent-based paint wastes, the only element of the paint manufacturing solid waste stream that was partially problematic once EPA banned disposal of liquids in landfills. Twenty years ago EPA decided not to proceed with an unwarranted industry-wide listing not only because it had already addressed any potential concern under RCRA, but also because EPA realized it lacked the facts necessary to justify, as a matter of law, any further regulation.[2] Importantly, in the intervening score of years, nothing has changed that could justify such regulation including most assuredly the Proposed Rule. The lack of information on non-RCRA waste volumes and any potential risk that they may pose to the environment still bars EPA from regulating the industry's waste as hazardous. No real world environmental risk data has been developed; no health hazard information has been adduced that would reliably suggest that the small volume of industrial solid waste generated by paint manufacturers constitutes any risk to public health or the environment or rises to the significance required for listing as hazardous under RCRA.

The law requires a factual showing, rather than an unsubstantiated presumption of harm before a solid waste stream can be subjugated to the very expensive and burdensome regime of RCRA. There is no factual showing of harm or even of a realistic potential for harm. EPA has made no such showing; nor could it do so since in the intervening 20 years, much has happened that eliminated even a theoretical potential for risk of any significance. Industry as a whole, including the paint industry has adopted a much more cautious approach to where and how their wastes are disposed due to strict regulations. This incentive alone would assure safe disposal, but added to it is the presence of a comprehensive regulatory regime of both federal and state regulations over waste disposal. Because of this the paint industry uses only lined landfills and only one reported lined surface impoundment, routinely practices waste minimization and pollution prevention, and as an ongoing regulatory benefit will continue to reduce the amount of potentially hazardous materials in its wastes, while responding to market demand as well as an array of federal and state standards.

EPA has merely pieced together and hastily proposed a wholly new regulatory framework that supplants objective conclusions with theoretical speculations. EPA substitutes specious statistical projections for realistic environmental hazard analysis and fills their enormous void in the realm of real factual data with contrived, albeit computerized, modeling of hypothetical scenarios that are both counter-intuitive, flatly contrary to actual practice and reality, and refuted by all existing actual fact. This Proposed Rule would strongly suggest the EPA is either in denial with respect to the facts of the paint manufacturing industry, or simply chose to ignore actual information in this regard.

This comment letter will detail, not only the current and future regulations EPA failed to analyze in light of adding a new regulatory regime, but the gross errors and false assumptions EPA used in assessing any potential risks associated with paint production wastes, including the volumes of waste disposed of by the industry, the list of constituents, the concentration at which they may pose a hazard, the likelihood that they would be found in paint productions wastes, the lack of biodegradation modeling, and the waste management practices likely to lead to potential hazards. In addition, NPCA comments specifically on provisions in the Proposed Rule and provides EPA with comments on requested issues, should EPA go forward with a hazardous waste listing determination despite all evidence to the contrary. Lastly, NPCA details the economic costs to the industry, which EPA substantially underestimates. NPCA believes, however, that if EPA truly analyzes the comments herein and moves forward under RCRA authority, and not merely on the impetus of a Consent Decree, EPA will make a no-list determination for paint production wastes. RCRA mandates that EPA make a determination as to whether or not to list wastes and for paint production wastes no listing is warranted.

2 See NPCA Comments of 1979 and 1980, submitted herewith and incorporated by reference.

(PMLP 00033. NPCA, page 2, 3, 4, w/attachments)

Lacking the data to make sound and reasonable risk assessment judgments, EPA calculated theoretical risk-based concentration limits for groundwater modeling, by back-calculating from receptor protective concentrations using waste volumes collected in the RCRA 3007 ICR. Further complicating the risk assessment and ultimately destroying any value that could be attributed to their analysis, EPA arbitrarily combined wastes streams, used unrealistic waste volume distributions, included powder coatings without accurately characterizing them, and made grave omissions in their landfill and surface impoundment assumptions, most notably biodegradation in groundwater. These problems, as outlined throughout this comment letter, substantially overestimated and mischaracterized any potential risk associated with paint production wastes.

There are enough errors and uncertainties in EPA's risk modeling, that a no-list determination is clearly warranted for paint wastes.

Under the current listing charge, EPA was to evaluate four specific waste streams, namely, solvent cleaning wastes from equipment and tank cleaning, waste and/or caustic cleaning wastes from equipment and tank cleaning, wastewater treatment sludge, and emission control dust/sludge. A fifth waste stream, off-specification wastes, was added by Consent Decree.[4] The goal of collecting information on these five discrete waste streams was to model and determine the risk to the environment for disposal of these streams.

In order to understand the significant problems with the development of this rule, a brief and general description of the process EPA used to develop this regulation must be discussed. The rulemaking included a waste survey of a supposedly representative population of paint manufacturing plants (approximately 300 sites) in an attempt to determine volume and composition of these waste streams. EPA then took this information on waste volumes and extrapolated the total volume of these wastes for the entire industry. The survey established two general methods of treatment and disposal of these waste streams that were of concern to EPA, namely the treatment of liquid wastes in surface impoundments and the landfilling of solids.

In order to assess the potential impact to the environment, EPA used EPA's Composite Model for Leachate Migration with Transformation Products (EPACMTP) model to evaluate any risks of treating liquid waste in surface impoundments and solid waste in landfills. The primary potential risk pathway was determined to be waste releasing (leaching) constituents of concern to ground water.

EPA ran numerous models of surface impoundments and landfills. The general modeling procedure took assumed volumes of waste material (solid or liquid), entered factors on the size of the waste unit and distribution (i.e., percent) of waste in the unit, and factors for the construction of the waste unit and assumed distance to a receptor (i.e., drinking water well). The model was then run starting with the maximum acceptable drinking water concentration (i.e., exceeded drinking water standard) for each constituent of concern in a hypothetical monitoring well. Using the drinking water standard for the constituents of concern, EPA back calculated the concentration in the waste that would have to be present to cause this concentration in groundwater. This modeling approach was repeated until a list of Constituents of Concern (COC) was established with maximum concentration in liquids and solids that could safely be treated or disposed in unlined landfills and unlined surface impoundments.

As stated, there are numerous flaws and mistakes that were made in establishing these COC and their respective levels of concern. These include but are not limited to:

- Overestimates of waste volumes from the survey in total paint manufacturing plants
- inaccurate and inflated weighting factors
- Combining waste streams
- Assumption about waste unit construction (lined verses unlined)
- Waste distributions in landfill or surface impoundment (all or some percent)
- Assumption about degradation rates of COCs

- Infiltration rates of rainfall
- Rates metals leach into groundwater
- Presumption of Reliable Analytical Methods

Any one or all of these factors have an affect on getting a level of concern for COCs. If the model were re-run correcting the numerous errors and the model assumption were further validated and corrected, the levels of concern for the listed COC would greatly increase to a point where the potential risks posed by these constituents would be minimal.

It is also important to note that EPA developed this rule making with little or no data on the actual concentration of the constituents of concern in these waste streams. Since many of these constituents of concern identified are new to the RCRA system (especially paint waste), industry has little analytical data available for the listed waste streams. Furthermore, as discussed herein, some of the COCs cannot be measured at the established level of concern. NPCA obtained information from raw material suppliers to help determine the concentrations of the listed COC in paint products, which can be used to predict whether any significant portion of the listed waste streams would exceed the proposed levels of concern.

4 Environmental Defense Fund v. Browner, D.D.C. Civ. No. 89-0598 (hereby incorporated by reference).

(PMLP 00033. NPCA, page 6, 7, w/attachments)

In conclusion, EPA has failed to base the Proposed Rule on specific evidence of any potential hazard associated with the various constituents, concentration levels, migration potential, and persistence for individual waste streams containing some paint wastes in the Proposed Rule. This arbitrary mischaracterization of paint production wastes will not withstand scrutiny under RCRA. EPA carries the basic legal obligation to provide proper support for a rulemaking. Although, EPA had 20 plus years to make an accurate and valid listing determination for paint production wastes, they instead waited until a court ordered deadline was upon them. EPA's reliance, in the Proposed Rule, on speculation and categorical assumptions about the potential hazard posed by the generic classes of paint production waste solids and paint production waste liquids is supplemented only by inadequate data and statistical theories. EPA has failed to support their determination, providing no specific data and relying only on conjecture and surmise.

Paint production wastes, as currently managed, do not pose any risks warranting a listing. Current and state and federal regulations adequately eliminate the need for this listing and current waste management practices will be further strengthened by new regulations already in pre-proposal state. EPA did not adequately address these regulations, since if they had, a no-list determination would have been proposed. Furthermore, EPA's risk assessment errors, incorrect assumptions, and arbitrary omissions, fatally flawed any potentially significant results from their modeling efforts regarding possible risks associated from paint production wastes.

EPA makes numerous mistakes and assumptions in the Proposed Rule, which have no basis in the record and can not be used to support a hazardous waste listing determination. These include, but are not limited to the arbitrary modeling of unlined surface impoundments and unlined landfills, improper combination of specific waste streams, inaccurate calculation and distribution of waste volumes, lack of groundwater biodegradation modeling. The only conclusion the record supports in this case is a withdrawal of the Proposed Rule and a no-list determination.

NPCA has also been adversely affected in our ability to appropriately respond to the Proposed Rule hereby reserves the right, absent a formal extension of the comment period, to submit comments based on our continuing work reviewing and validating the Proposed Rule. Nonetheless, the Proposed Rule is not legally supportable and the Consent Decree can not mandate a listing regulation. EPA has failed to support a listing determination under the standards of RCRA and EPA can not hide this fact behind flawed statistics and theoretical hypothesis offered in support of the Proposed Rule. Therefore, NPCA strongly urges EPA to review the comments received herein and make a no-list determination for paint production wastes.

(PMLP 00033. NPCA, page 58, w/attachments)

RPM is concerned that the proposed waste listing determination does not adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. In addition, we are concerned that the proposed rule is not based on an actual assessment of our industry practices. As such, the rule does not bear a realistic rational relationship to the paint manufacturing industry and the actual risks posed by the industry’s waste streams.

(PMLP 00035. RPM, Inc., page 1)

The Resource Conservation and Recovery Act (RCRA) permits EPA to list as hazardous only those wastes that EPA has demonstrated to present a substantial threat to the environment. RCRA requires a factual showing, rather than a mere presumption of potential harm. The required showing has not been met in this rulemaking. EPA has proposed to subject all paint manufacturing wastes to a stringent regulatory system based on broad, technically unsound assumptions and faulty statistical measures. It is clear that EPA operated under an unnecessarily accelerated schedule to finish this rulemaking and as a result failed to adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule.

(PMLP 00035. RPM, Inc., page 3)

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RPM believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. Had EPA based the rulemaking on actual current industry information and practices, and not just presumptions, RPM believes that the EPA would have realized a hazardous listing determination for paint production wastes would be unnecessary.

(PMLP 00035. RPM, Inc., page 3)

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Valspar is concerned that the proposed waste listing determination does not adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. In addition, we are concerned that the proposed rule is not based on actual assessment of our industry practices. As such, the rule does not bear a realistic rational relationship to the paint manufacturing industry and the actual risks posed by the industry's waste streams. As proposed, the rule creates costly and unnecessary burdens for both our industry and the national system for managing hazardous wastes. Valspar believes that paint production wastes should not be regulated as hazardous wastes since they do not pose a significant risk to humans or the environment as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. The purpose of this letter is to request a no-list determination for paint production wastes and to document our concerns with this rulemaking should a listing determination move forward.

(PMLP 00036. Valspar Corp., page 1)

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Valspar believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. Upon promulgation of the final rule, should EPA review the above issues and more appropriately assess the actual risks imposed by the industry, we believe that a hazardous waste listing determination will be unwarranted.

(PMLP 00036. Valspar Corp., page 2)

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ICI Paints is concerned that the proposed paint production waste listing determination does not adequately consider and evaluate information that is essential to develop an effective and reasonable rule. In addition, we are concerned that the Proposed Rule is not based on actual assessment of our industry practices for managing paint production waste steams. As such, the rule does not bear a realistic rational relationship to the paint manufacturing industry and the actual risks posed by the industry's waste streams. ICI Paints believes that paint production wastes should not be regulated as hazardous wastes since they do not pose a significant risk to humans or the environment as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. The purpose of this letter is to request a no-list determination for paint production wastes and to document our concerns with this rulemaking should a listing determination move forward.

(PMLP 00039. ICI Paints North America, page 1)

ICI Paints believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. Had EPA based the rulemaking on actual industry practices, a hazardous listing determination for paint production wastes would be unnecessary.

(PMLP 00039. ICI Paints North America, page 6)

The P.D. George Co. is concerned that the proposed waste listing determination does not adequately consider and evaluate information that is essential in order to propose an effective and reasonable rule. In addition, we are concerned that the proposed rule is not based on actual assessment of our industry practices. As such, the rule does not bear a realistic rational relationship to the paint manufacturing industry and the actual risks posed by the industry's waste streams. As proposed, the rule creates costly and unnecessary burdens for both our industry and the national system for managing hazardous wastes. The P. D. George believes that paint production wastes should not be regulated as hazardous wastes since they do not pose a significant risk to humans or the environment as currently managed under the Resource Conservation and Recovery Act's (RCRA) Subtitle D program. The purpose of this letter is to request a no-list determination for paint production wastes and to document our concerns with this rulemaking should a listing determination move forward.

(PMLP 00040. P.D. George Co., page 1)

The P. D. George Co. believes that EPA did not meet their obligation with regard to the original intent of RCRA's waste listing determination for paint production wastes. Upon promulgation of the final rule, should EPA review the above issues and more appropriately assess the actual risks imposed by the industry, we believe that a hazardous waste listing determination will be unwarranted. The P. D. George Co. is available to discuss these issues, should EPA require further information to support our views.

(PMLP 00040. P.D. George Co., page 2)

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The EPA is to be commended for its efforts in the Paint Production Wastes proposal regarding its use of a technical approach that incorporates risk assessment to develop concentration-based listing levels. Also, the inclusion of contingent management is consistent with the risk assessment approach and is fully supported by DuPont. Further, EPA makes use of state of the science modeling techniques, such as probabilistic analysis, that is also supported.

(PMLP 00041. DuPont, page 7, w/attachments)

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In issuing the Risk Characterization Policy and Guidance in 1995, Carol Browner, then EPA Administrator stressed the need for realistic assessments grounded in common sense. We concur with Ms. Browner's statements as follows and suggest that these targets are also consistent with this philosophy:

> *While I believe that the American public expects us to err on the side of protection in the face of scientific uncertainty, I do not want our assessments to be unrealistically conservative. We cannot lead the fight for environmental protection into the next century unless we use common sense in all we do.*

(PMLP 00041. DuPont, page 8, w/attachments)

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Therefore, prior to the proposed listing moving forward, DuPont recommends that the Agency either include as-generated off-specification liquid paints and coatings within the scope of the listing for paint manufacturing waste liquids (e.g., K180) or develop a conditional exemption from the proposed K179 listing for as-generated off-specification liquid paints and coatings disposed of in non-land based units, such as via combustion. It would appear that either of these alternatives, based upon how the proposed rule has been crafted, would also encourage effective treatment of wastes over land disposal, consistent with the Agency's own waste management hierarchy.

(PMLP 00041. DuPont, page 13, w/attachments)

Based on the inappropriateness of the data that formed the basis for developing the waste management and exposure scenarios, DuPont believes that the results are flawed and should not be used to develop concentration-based limits. Even more important, however, is that the results of more realistic modeling (even without correcting for this initial flaw in the basis), materials never reach receptors in concentrations that would be considered toxic. Therefore, DuPont strongly discourages the Agency from finalizing this proposed rule. DuPont believes that paint wastes are currently managed in a manner that is protective of human health and the environment without the need for a hazardous waste listing.

(PMLP 00041. DuPont, page 14, w/attachments)

Adheron Coatings Corporation believes that latex paint production waste should not be regulated since they do not pose a risk to humans or the environment. Furthermore, existing Federal and State regulations are adequate to protect any potential risks associated with human health and the environment from paint production wastes as a whole. Therefore, Adheron Coatings Corporation respectfully requests a no-list determination for paint production wastes.

(PMLP 00042. Adheron Coatings Corp.,page 1)

RESPONSE

As discussed in Section IV of the final determination, we have determined not to list waste solids or waste liquids from paint production as proposed (K179 and K180). Given that we have decided not to list the wastes at issue, there is no need to provide any further response to the general comments in this section. However, we take exception to comments that the proposed rule was not based on actual assessment of the industry, and that data gathered via the industry survey do not adequately represent the actual practices of the industry. To the contrary, we believe our survey provided detailed and reliable data for this industry on waste management practices, waste volumes, and waste constituents. Section III of this document contains detailed discussions on our use of the survey data and provides our responses to more specific comments in this area.

I. Relationship to HWIR

EPA received a number of general comments on the relationship of the proposed listing to the Hazardous Waste Identification Rule (HWIR). Below we provide a summary of the comments, followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not addressing the comments in this section.

SUMMARY OF COMMENTS

The Agency received three comments from associations on the relationship of the proposed listing to the Hazardous Waste Identification Rule (HWIR). One commenters stated that EPA should clarify that concentration-based threshold values have no relevance beyond the specific waste streams addressed in the risk assessment, specifically that have no relevance to the HWIR exit levels being developed under a separate rulemaking. Another commenter was concerned that the levels established for MMA in the proposed rulemaking could be different from the exit levels established under HWIR making management of MMA difficult. They recommended that MMA be removed from the list of chemicals of concern in the proposed listings. The third commenter stated that styrene was evaluated in the 1992 and 1995 HWIR proposals and was dropped from list of candidate chemicals in subsequent proposals and therefore styrene should be dropped from the proposed listings.

VERBATIM COMMENTS

In addition, EPA should clarify the distinction between the concentration-based approach for this waste stream and the HWIR exit levels being developed for previously listed hazardous wastes.

(PMLP 00008. USWAG, page 2, w/attachments)

For solid paint production wastes, the establishment of exit levels sets an important precedent that increases the utility of the concentration-based approach and has potential to reduce the overbreadth of hazardous waste listings. It is logical that risk-based constituent concentrations used to determine whether a waste is hazardous should also be available to determine that a waste is no longer hazardous at a point subsequent to generation. Most significantly, the exit provision would replace the derived-from rule for residues from treatment of paint production waste solids. *Id.* at 10110. USWAG welcomes this expansion of the concentration-based listing approach and encourages EPA to expand it to liquid paint production wastes as well.

Although we are encouraged by this development, we are concerned that it might be misperceived in other regulatory contexts. We request that EPA should clarify that concentration-based threshold values have no relevance beyond the specific waste streams addressed in the underlying risk assessment.

The development of risk-based "exit levels" for previously listed hazardous wastes is the focus of the Hazardous Waste Identification Rule ("HWIR"), which EPA has been developing for years. *See* 64 Fed. Reg. 63382 (Nov. 19, 1999). Throughout the development of HWIR, we have emphasized that EPA must make clear that HWIR exit levels are not intended to be used as an indicator whether wastes that contain constituents above the proposed exit levels should be regulated as hazardous waste. EPA has specifically stated that the purpose of HWIR "is to exempt from hazardous waste regulation those solid wastes currently designated as hazardous waste even though they contain constituent concentrations at levels that pose very low risk to human health and the environment." 60 Fed. Reg. 66344, 66347(Dec. 21, 1995). Since Therefore, HWIR exit levels have no relevance in determining whether a waste that contains constituents with concentrations above the HWIR exit levels meets either the statutory or regulatory definitions of hazardous waste.

To avoid the potential misuse of the concentration-based threshold values, EPA should explicitly clarify in the preamble to the final rule that the they are designed to be used solely in determining whether a relevant paint production waste is subject to

Subtitle C regulation. Furthermore, EPA should clarify that those values have no bearing on whether other wastes should be regulated as hazardous wastes.

(PMLP 00008. USWAG, page 6, 7, w/attachments)

Sixth, MPA is concerned that this proposal will create a separate scheme of regulations that could be inconsistent with the exit levels established under the Hazardous Waste Identification Rule (HWIR). For example, it is possible that different exit levels for MMA could be specified under the proposed paint waste rule and under the separate HWIR process. If the HWIR exit levels for MMA are set lower than those for paint waste, the effect of the Proposed Rule would be nullified. Conversely, if HWIR exit levels are set higher than those for paint waste, the illogical end result would be that wastes with identical concentrations of MMA could have to be managed differently depending on whether they were generated from a paint manufacturing process or some other non-paint related process. EPA can avoid this possibility by removing MMA from the list of paint waste constituents under the Proposed Rule.

(PMLP 00016. MPA, page 14, w/attachments)

Footnote 20. These comments address the reasons that styrene should not be listed in the final rule. SIRC is not addressing the issue of whether EPA should delete the paint manufacturing waste liquids (K180) category completely, but these comments would certainly support that conclusion with regard to styrene. Although we have not thoroughly analyzed the issue, SIRC notes that it is not endorsing the treatment level proposed by the agency. Finally, the preamble to the proposal refers to EPA's 1999 and 2000 Hazardous Waste Identification Rule (HWIR) notices. While styrene was evaluated in the 1992 and 1995 HWIR proposals, styrene was dropped from the list of candidate chemicals in subsequent proposals. This further supports the agency's suggestion that styrene not be included in the present rule. Compare 57 Fed. Reg. 21450, 21520 (May 20, 1992) and 60 Fed. Reg. 66334, 66450(Dec. 21, 1995) with 64 Fed. Reg. 63382 (Nov. 19, 1999) and 65 Fed. Reg. 44491 (July 18, 2000).

(PMLP 00029. SIRC, page 4, 5)

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RESPONSE

As discussed in Section IV of the final determination, we have determined not to list waste solids or waste liquids from paint production as proposed (K179 and K180). As a result, there is no need to consider how the derived-from rules might apply to these wastes. Therefore, we are not addressing comments related to the this issue for K179 and K180.

J. Reliance on other regulatory programs

EPA received a number of general comments on other regulatory programs affecting the paint production industry. Below we provide a summary of the comments, followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not providing a detailed response to these comments. However, at the end of this section we discuss how we considered the impact of other regulations as supporting information in our listing decision.

SUMMARY OF COMMENTS

The Agency received three comments from industry and one from an association on other regulatory programs affecting the paint production industry. Commenters stated that EPA did not consider the full effect of existing or upcoming rules under the Clean Air Act (CAA) that would limit the potential risks from paint production wastes. Commenters cited several regulations, including the National Volatile Organic Compound Emissions Standards for Architectural Coatings and Industrial Maintenance Coatings (AIM) rule. They stated that regulations severely limiting the use of volatile organic compounds (VOCs) in paint products would greatly reduce VOCs in paint production waste as well. One commenter indicated that, because our survey collected 1998 data, it does not take into account the changes that have or will be made in paint formulation to meet the AIM Rule regulatory levels.[6] This would include changes required by many states in ozone non-attainment areas, which have developed even more stringent VOC regulations than the National AIM Rule.

Commenters pointed out that there are currently 14 major federal National Emission Standards for Hazardous Air Pollutants (NESHAP) surface coatings categories with Maximum Achievable Control Technology (MACT) standards that have been (or shortly will be) issued for a wide variety of industries. The commenters said that these "Surface Coating MACTs" will force coating application facilities to use coatings with low levels of Hazardous Air Pollutants (HAPs) to avoid installing expensive control technologies. The commenters argued that many customers will demand the production of low-HAP coatings, because most MACTs will require at least a 90-95% reduction in surface coating HAP emissions. The commenter noted that nearly all the proposed paint production waste constituents of concern in the proposed rule are HAPs. The commenters suggested that eliminating most of the HAPs in paint products will eliminate most HAPs in paint production waste. Finally, commenters stated that the planned MACT covering paint manufacturers (Miscellaneous Organic Chemical and Coatings Manufacturing) will similarly reduce HAPs in paint formulations, and consequently production wastes.

VERBATIM COMMENTS

We believe that the EPA did not consider existing or soon to be promulgated Federal and State regulations that will appropriately address potential risks to human health and the environment from paint production wastes. In particular, the EPA did not consider how the National Volatile Organic Compound Emissions Standards for Architectural Coatings and Industrial Maintenance Coatings (AIM) rule will impact the concentration of VOCs in paint production wastes. The EPA must take into account that if the use of VOC's are limited in the final paint product as a result of these regulations. VOCs will also be reduced in the paint production waste as well. In addition, the EPA did not take into account the fact that many states in including California and other ozone non-attainment areas have and probably will develop much more stringent VOC regulations then the National AIM Rule.

Furthermore, EPA did not take into consideration the 14 major National Emission Standards for Hazardous Air Pollutants (NESHAP) surface coatings categories with maximum Achievable Control Technology (MACT) (hereinafter referred to as "Surface Coating MACTs") standards that have, or will be finalized within the next year. The EPA did not take into consideration that these Surface Coating MACTs would significantly reduce the concentrations of the paint production waste listing constituents of concern.

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[6]The final rule entitled National Volatile Organic Compound Emission Standards for Architectural Coatings (40 CFR 59, Subpart D) was published September 11, 1998 (FR 63 48848).

The Surface Coating MACTs will force many surface coating application facilities to use low-HAP coatings instead of installing expensive controls. With an increased use of low-HAP coatings by surface coating facilities, the paint production industry will follow our customers lead and produce low-HAP "compliant' coatings. Most if not all will require at least a 90-95% reduction in surface coating HAP emissions. Most of these reductions will be the result of reformulation by the paint production industry. With the exception of Antimony, all the proposed paint production waste constituents of concern are HAPs. If 90-95% of the HAPs in paint products are removed, as much as 90-95% of the HAPs in paint production waste will be removed as well, including those constituents listed in the Proposed Rule.

Another MACT rule currently being drafted is the Miscellaneous Organic NESHAP (MON MACT). This rule will reduce the potential risks specifically associated with paint production wastes via air and waste water pathways as it will require covers and controls on process tanks, require wastewater to be shipped off-site for treatment, control of emissions from storage tanks and transfer operations. and leak detection and repair programs for equipment. Instead of installing expensive control equipment many paint manufacturers will reduce the amount of HAPs in their products, and thereby reduce the amount of HAPs in their paint production waste as well.

(PMLP 00026. Jamestown Paint Company, page 1, 2)

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Furthermore, existing Federal and State regulations are adequate to protect any potential risks associated with human health and the environment from paint production wastes as a whole. Therefore, we respectfully request a no-list determination for paint production wastes.

(PMLP 00028. Kelley Technical Coatings, page 2)

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"Where another Federal or State program or other RCRA requirements clearly will provide the type of control needed to eliminate the risk associated with a certain type of waste management, a RCRA listing may be considered unnecessary or redundant."[3] NPCA believes that existing Federal and State regulations appropriately address any potential risks to human health and the environment from paint production wastes.

In the Paint Manufacturing Listing Determination Listing Background Document the EPA mentions the National Volatile Organic Compound Emissions Standards for Architectural Coatings [and Industrial Maintenance Coatings] (hereinafter referred to as the "National AIM Rule"), but arbitrarily does not consider how this regulation will impact the concentration of VOC's in paint production wastes. Specifically, the EPA estimated that the National AIM Rule would reduce VOC emissions by 113,500 tons per year by requiring manufacturers and importers to limit the VOC content of architectural coatings. EPA issued the final rule for AIM coatings on September 11,

1998. Provisions of this rule apply to AIM coatings manufactured or imported on or after September 13, 1999.

The EPA must take into account that severely limiting the use of VOCs in paint products greatly reduces VOCs in paint production waste as well. Since the paint production waste RCRA Section 3007 Information Collection Request (ICR) (hereinafter referred to as the "RCRA 3007 ICR") elicited only 1998 data, it does not take into account changes in paint production formulation that were made in 1999 and further changes that will be made to meet the National AIM Rule regulatory levels, and those of the many states, including California and those in other ozone non-attainment areas, which have developed even more stringent VOC regulations than the National AIM Rule. Based on work done by the Ozone Transport Commission (OTC), it would appear that another 13 states will adopt VOC standards more stringent than the National AIM Rule.

In addition, EPA failed to consider that in April 1998, the Occupational Safety and Health Administration (OSHA) lowered the Permissible Exposure Limit (PEL) for Methylene Chloride (one of the constituents of concern in the Proposed Rule). The PEL for Methylene Chloride was reduced from 100 ppm to 25 ppm. This rulemaking, which EPA ignored, has greatly reduced, if not eliminated, the use of this chemical as a raw material in paint and as a cleaning substance in paint production.

Furthermore, EPA did not take into consideration federal rules that are currently proposed and statutorily mandated. There are currently 14 major federal National Emission Standards for Hazardous Air Pollutants (NESHAP) surface coatings categories with Maximum Achievable Control Technology (MACT) (hereinafter referred to as "Surface Coating MACTs") standards that have (i.e. shipbuilding, wood furniture, and aerospace), or will be finalized within the next year (i.e. fiberglass boat, metal coil, paper & other web, metal furniture, large appliance, wooden building, plastic parts, fabric coating, miscellaneous metal parts, auto & light duty truck, metal can). These Surface Coating MACTs would significantly reduce the concentrations of most of the paint production waste listing constituents of concern to EPA in the Proposed Rule.

The Surface Coating MACTs will force surface coating application facilities to use low-HAP coatings instead of installing expensive controls. Instead of incurring the significant capital costs associated with pollution control devices, the paint production industry will choose, and many customers will demand the production and use of low-HAP coatings. Most if not all will require at least a 90-95% reduction in surface coating HAP emissions. Most of these reductions will be the result of reformulation by the paint production industry. With the exception of Antimony, all the proposed paint production waste constituents of concern in the Proposed Rule are HAPs. Eliminating 90-95% of the HAPs in paint products will eliminate 90-95% of the HAPs in paint production waste, including those constituents listed in the Proposed Rule.

EPA is also preparing another MACT rule - the Miscellaneous Organic NESHAP (MON MACT), which will reduce HAPs in paint formulations, and consequently production wastes, as an alternative to facilities installing expensive control technologies on tanks, wastewater treatment operations, transfer operations and tank cleaning operations. This will result in the reduction of HAPs in products as well as the reduction in the use of HAPs containing solvents for tank cleaning operations.

NPCA believes that EPA did not appropriately take into consideration the impact of other federal, state and local regulations governing the paint industry when making this listing determination. Taking into consideration paint waste VOC reductions as a result of the National AIM Rule regulations and HAP reductions as a result of MACT regulations would significantly reduce the modeled risk associated with paint production waste.

Just these few examples of current and future regulations affecting the volume and content of paint production wastes, demonstrates that a hazardous listing determination for paint production wastes is unnecessary under RCRA.

3 "Dye and Pigment Industries; Hazardous Waste Listing Determination Policy," 59 Fed. Re& 66077 (Dec. 22, 1994) (rule and administrative record hereby incorporated by reference).

(PMLP 00033. NPCA, page 4, 5, w/attachments)

We believe that the EPA did not consider existing or soon to be promulgated Federal and State regulations that will appropriately address potential risks to human health and the environment from paint production wastes. In particular, the EPA did not consider how the National Volatile Organic Compound Emissions Standards for Architectural Coatings and Industrial Maintenance Coatings (AIM) rule will impact the concentration of VOC's in paint production wastes. The EPA must take into account that if the use of VOC's are limited in the final paint product as a result of these regulations, VOC's will also be reduced in the paint production waste as well. In addition, the EPA did not take into account the fact that many states in including California and other ozone non-attainment areas have and probably will develop much more stringent VOC regulations then the National AIM Rule.

Furthermore, EPA did not take into consideration the 14 major National Emission Standards for Hazardous Air Pollutants (NESHAP) surface coatings categories with Maximum Achievable Control Technology (MACT) (hereinafter referred to as "Surface Coating MACTs") standards that have, or will be finalized within the next year. The EPA did not take into consideration that these Surface Coating MACTs would significantly reduce the concentrations of the paint production waste listing constituents of concern.

The Surface Coating MACTs will force many surface coating application facilities to use low-HAP coatings instead of installing expensive controls. With an increased use of low-HAP coatings by surface coating facilities, the paint production industry will follow our customers lead and produce low HAP "compliant" coatings. Most if not all will require at least a 90-95% reduction in surface coating HAP emissions. Most of these reductions will be the result of reformulation by the paint production industry. With the exception of Antimony, all the proposed paint production waste constituents of concern are HAPs. If 90-95% of the HAPs in paint products are removed, as much as 90-95% of the HAPs in paint production waste will be removed as well, including those constituents listed in the Proposed Rule.

Another MACT rule currently being drafted is the Miscellaneous Organic NESHAP (MON MACT). This rule will reduce the potential risks specifically associated with paint production wastes via air and waste water pathways as it will require covers and controls on process tanks, require wastewater to be shipped off-site for treatment, control of emissions from storage tanks and transfer operations, and leak detection and repair programs for equipment. Instead of installing expensive control equipment many paint manufacturers will reduce the amount of HAPs in their products, and thereby reduce the amount of HAP's in their paint production waste as well.

(PMLP 00035. RPM, Inc., page 1, 2)

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RESPONSE

In general, we agree that the existing and upcoming regulations on air releases will limit the levels of many organic chemicals of concern in paint wastes. As we noted in the proposal (66 FR 10103), regulations that limit air releases from off-site CWT facilities are also likely to keep the levels of organic constituents low, including in impoundments that might exist. See Subpart DD in 40 CFR 63 sets NESHAPs for off-site waste and recovery operations, which may include off-site centralized wastewater treatment facilities. The impacts of this and the other regulations cited on paint wastes are difficult to quantify. However, such standards provide incentives to reduce HAPs through source reduction or pretreatment to avoid costly engineering controls. Therefore, the impact of these other existing and potential regulatory controls contribute to our belief that listing of this waste is not warranted.

K. Impact on remediation activities

EPA received a number of general comments on the potential impact of the proposed listings on remediation activities. Below we provide a summary of the comments, followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not providing responses to these comments.

SUMMARY OF COMMENTS

The Agency received comments from two commenters on the impact of the proposed listing on remediation activities. One stated that adequate regulatory controls exist for remediation wastes and additional requirements add burden without benefit. The other commenter stated that previously disposed wastes should not be listed and the costs associated with covering remediation activities outweigh any potential benefits.

VERBATIM COMMENTS

Inclusion of remediation wastes in the rule. Adequate regulatory controls already exist for remediation wastes, and additional requirements simply add burden with benefit.

(PMLP 00024. Akzo Nobel, page 2)

NPCA is concerned that the Proposed Rule is silent on the topic of remediation wastes. NPCA expressed the concern to the EPA at the March 14, 2001 meeting, where EPA stated that remediation wastes would be covered should the listing determination go forward for K179 and K180 wastes. EPA did not, however, evaluate the potential impact of such a determination on the remediation of sites containing previously disposed paint manufacturing wastes.

Remediation of previously disposed wastes is currently being conducted under several overlapping regulatory schemes which serve to make sure that disposal of any wastes from such remediation is conducted in a safe manner. A determination that previously disposed wastes and residues are subject to Subtitle C regulation may also have the unintended consequence of discouraging the remediation of contaminated sites by imposing significant regulatory and economic burden without the commensurate benefit to either protection of human health or the environment.

The Proposed Rule does address the requirement that "previously disposed wastes now meeting a listing description, including residues such as leachate that are derived from such wastes, and that are managed actively do become subject to Subtitle C regulation."[86] Furthermore, EPA states that "We don't anticipate that records documenting the concentrations of proposed constituents of concern for these wastes exist for previously disposed wastes. Therefore, absent a finding that the disposed wastes would have met the listing being proposed today, it is unlikely that the previously disposed wastes would be classified as K179, and thus unlikely that landfill leachate and gas condensate derived from these wastes that are actively managed would be K 179."[87] This statement is completely arbitrary, as it is not supported by any study or documentation.

Certainly, EPA is well aware that the availability of information for historical waste disposal, particularly prior to 1980, is uneven at best. EPA has acknowledged this in its guidance for remediation that provides when the source of a waste is unknown, one is not required to presume that it is hazardous.[88] The unsound impact of EPA's position is that when Subtitle C regulation would not be required according to the characteristics of the wastes, it would be required where there is the possibility of finding information about the composition of previously disposed wastes.

Thus, potentially significant implications for the management of wastes from a remediation site would be driven by the chance act of discovery of information that previously disposed of waste was paint manufacturing wastes that might meet the criteria for K179 or K180. In fact, the costs of remediation of such a site could be significantly impacted by such a discovery. This may lead to selection of a remedy that would be less effective or less protective without significant additional protectiveness in the handling of the wastes compared to another similar site at which such documentation is not found. Such additional regulatory and economic burden may also discourage brownfields redevelopment of such an impacted site.

It would be reasonable for EPA to consider excluding previously disposed, newly-listed wastes from Subtitle C regulation on a similar basis as the exclusion for waste liquids managed in tanks. It is unlikely that additional significant risk would result from management of these wastes. If EPA promulgates any hazardous waste listing determination over NPCA objection, it is suggested that EPA exempt the Subtitle C regulation of previously disposed K179 and K180 paint manufacturing wastes on the following bases:

- No additional environmental protectiveness would be offered by such regulation
- Mere chance could determine the availability of documentation that would require classification as K179 and/or K180
- Potentially significant economic burden may be imposed indiscriminately
- Regulation could lead to remedy selection that would be less effective or less protective

86 66 Fed. Reg. 10112 (Feb. 13, 2001).

87 66Fed.Reg. 10112 (Feb. 13, 2001).

88 "EPA Memorandum, Management of Remediation Waste Under RCRA, "Oct. 1998.

(PMLP 00033. NPCA, page 51, 52, w/attachments)

RESPONSE

As discussed in Section IV of the final determination, we have determined not to list waste solids or waste liquids from paint production as proposed (K179 and K180). As a result, there is no need to consider how the listings might apply to remediation wastes. Therefore, we are not addressing comments related to the this issue for K179 and K180.

IX. IMPLEMENTATION REQUIREMENTS

EPA received a number of comments on its proposed rule provisions to implement the hazardous waste listings for paint production wastes. The summary of comments and verbatim comments received on the various aspects of the proposed implementation requirements are provided below. Because the Agency has determined not to list any of the paint production wastes as proposed, the proposed provisions to implement the listings are no longer necessary . Therefore, the Agency is not addressing the comments on the proposed implementation provisions for paint wastes at this time.

A. Making a hazardous waste determination (general)

SUMMARY OF COMMENTS

The Agency received six comments, three from associations and three from industry. Three comments supported the proposed rules self-implementing contingent management exemption. The other three commenters supported the self-implementing framework for determining if a paint production waste is a hazardous waste under the proposed listing.

VERBATIM COMMENTS

USWAG supports the proposed self-implementing framework for determining whether a relevant waste is a hazardous waste. This is a significant improvement over the requirement in the dyes and pigments production waste proposal to require submittal of written certification that a target waste stream is indeed nonhazardous. Such a requirement in a concentration-based listing would be contrary to EPA's approach in the TC regulations and would create an undue burden.

(PMLP 0008. USWAG, association, page 6, w/attachments)

Under the proposed contingent management listing for paint manufacturing liquid wastes, no overseeing agency notification, review or approval is required prior to the exemption becoming effective. Rather, facilities storing or treating paint manufacturing waste liquids on-site prior to off-site disposal, would need to maintain documentation showing that the wastes were stored or treated exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. 66 Fed. Reg. at 10116. Maintaining supporting documentation on-site eliminates the need for the overseeing agency to establish special controls regarding the submission, maintenance and public distribution of such information, particularly that which is confidential, and correctly places the burden upon the generator to maintain such information, confidential or otherwise. The Council strongly supports the Agency's proposed concept of a self-implementing contingent management exemption for paint manufacturing waste liquids and likewise supports its extension to the additional contingent management options discussed above.

In addition to being an efficient approach, self-implementation is a logical extension of the current waste characterization process that is, itself, self-implementing. A contingent management exemption is simply a determination that a certain material is not a solid waste or is conditionally exempt from regulation. 40 C.F.R. §§ 261.2 through 261.6. We believe such a self-implementing program will be more useful to regulators <u>and</u> the regulated community than would a complicated and convoluted agency notification, review and approval procedure.

A self-implementing exemption approach is also consistent with EPA's own prior position regarding conditional listings. Specifically, in the Chlorinated Aliphatics Production Wastes final rule. EDC/VCM wastewater treatment sludges are considered listed hazardous wastes unless the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. 65 Fed. Reg. 67068 (Nov. 8. 2000). We believe the Agency should also take a similar approach here in terms of the the flexibility provided generators regarding how such a demonstration may be satisfied *(i.e.,* contracts, bills-of-lading or other shipping papers, invoices, permits, etc.).

Furthermore, self-implementation represents a more appropriate use of limited resources by the overseeing agencies. In the November 1999 HWIR notice, the Agency noted case-by-case review and approval "could create undue expense, administrative burden and numerous legal and practical complications." 64 Fed. Reg. 63395 (Nov. 19, 1999). Self-implementation, on the other hand, provides overseeing agencies access to all the supporting documentation, while allowing those agencies to set the manner, timing and focus of any review, rather than being bound by an inflexible directive requiring the consumption of scarce administrative resources.

The Council, therefore, urges EPA to retain the proposal's self-implementing contingent management exemption for paint manufacturing wastes if, in fact, it is determined that the proposed listing is warranted.

(PMLP 00030. ACC, association, page 8, 9)

Rohm and Haas believes that this rule should be self-implementing. The track record at EPA and the states in responding to delistings, permits, and interpretations has at times been frustrating and slow. Current budgetary and personnel pressures at the agencies do not allow for the dramatic increase in workload that would be required if the exemption were not self-implementing, and many of the 800 paint producers were forced to file delisting petitions. While they were waiting, the manufacturers would incure enormous costs to manage waste as hazardous until the EPA or state approved the exemption.

(PMLP 00031. Rohm and Haas, industry, page 4) (moved from 1B)

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Currently, any facility that generates a solid waste must determine if that waste is a hazardous waste (§262.11). Thus, allowing the generator of paint wastes to characterize them as hazardous or nonhazardous, based on regulatory limits, is reasonable and expected.

(PMLP 000032 Eastman Chemical Co., industry, page 11)

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NPCA strongly supports self-implementation without prior agency notification, review and approval. Under the proposed contingent management listing for paint manufacturing liquid wastes, no overseeing agency notification, review or approval is required prior to the exemption becoming effective. Rather, if you are storing or treating paint manufacturing waste liquids on-site prior to off-site disposal, you would need to maintain documentation showing that the wastes will be stored or treated exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit.[52] Maintaining supporting documentation on-site eliminates the need for the overseeing agency to establish special controls regarding the submission, maintenance and public distribution of such information, particularly that which is confidential, and correctly places the burden upon the generator to maintain such information confidential. NPCA strongly supports the Agency's proposed concept of a self-implementing contingent management exemption.

In addition to being an efficient approach, self-implementation is a logical extension of the current waste characterization process that, itself, is self-implementing. A contingent management exemption is nothing more than a determination that a certain material is not a solid waste or is conditionally exempt from regulation. 40 C.F.R. §§ 261.2 through 261.6. We believe such a self-implementing program will be more useful to regulators and the regulated community than would a complicated and convoluted agency notification, review and approval procedure.

A self-implementing exemption approach is also consistent with EPA's own prior position regarding conditional listings. Specifically, in the Chlorinated Aliphatics Production Wastes final rule (rule and administrative record hereby incorporated by reference), EDCIVCM wastewater treatment sludges are considered listed hazardous wastes unless . . . the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill.[53] We believe EPA should also take a similar approach here in terms of the flexibility provided generators regarding how such a demonstration may be satisfied (i.e., contracts, bills-of-lading or other shipping papers, invoices, permits, etc.).

Furthermore, self-implementation represents a more appropriate use of limited resources by the overseeing agencies. Case-by-case review and approval "could create undue expense, administrative burden and numerous legal and practical complications."[54] Self-implementation, on the other hand, provides overseeing agencies access to all the supporting documentation, while allowing those agencies to set the manner, timing and focus of any review, rather than being bound by an inflexible directive requiring the consumption of scarce administrative resources.

Finally, there is no advantage to the public in establishing any prior notification, review and approval period; the public has received notice and had an opportunity to comment or request more information without any time limits, and to initiate all supportable actions including inspections. Delay has no meaningful effect on legitimate public input.

NPCA, therefore, urges EPA to retain the proposal's self-implementing contingent management exemption for paint manufacturing liquid wastes if, over NPCA's objection, any proposed listing is pursued.

52 66 Fed. Reg. 10116 (Feb. 13, 2001).

53 65 Fed. Reg. 67068 (Nov. 8, 2000).

54 64 Fed. Reg. 63395 (nov. 19, 1999).

(PMLP 000033. NPCA, association, page 32, 33, w/attachments)

Under the proposed contingent management listing for paint manufacturing liquid wastes, no overseeing agency notification, review or approval is required prior to the exemption becoming effective. Rather, if you are storing or treating paint manufacturing waste liquids on-site prior to off-site disposal, you would need to maintain documentation showing that the wastes will be stored or treated exclusively in tanks or containers off-site prior to discharge to a POTW or under a NPDES permit. 66 FR 10116 (Feb. 13, 2001). Maintaining supporting documentation on-site eliminates the need for the overseeing agency to establish special controls regarding the submission, maintenance and public distribution of such information, particularly that which is confidential, and correctly places the burden upon the generator to maintain such information, confidential or otherwise. DuPont strongly supports the Agency's proposed concept of a self-implementing contingent management exemption for paint manufacturing waste liquids and likewise supports its extension to the additional contingent management options discussed above.

In addition to being an efficient approach, self-implementation is a logical extension of the current waste characterization process that is, itself, self-implementing. A contingent management exemption is simply a determination that a certain material is not a solid waste or is conditionally exempt from regulation. 40 C.F.R. §§ 261.2 through 261.6. We believe such a self implementing program will be more useful to regulators and the regulated community than would a complicated and convoluted agency notification, review and approval procedure.

A self-implementing exemption approach is also consistent with EPA's own prior position regarding conditional listings. Specifically, in the Chlorinated Aliphatics Production Wastes final rule, EDC/VCM wastewater treatment sludges are considered listed hazardous wastes unless the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. 65 FR 67068 (Nov. 8, 2000). We believe the Agency should also take a similar approach here in terms of the flexibility provided generators regarding how such a demonstration may be satisfied (i.e., contracts, bills-of-lading or other shipping papers, invoices, permits, etc.).

Furthermore, self-implementation represents a more appropriate use of limited resources by the overseeing agencies. Case-by-case review and approval "could create undue expense, administrative burden and numerous legal and practical complications." 64 FR 63395 (Nov. 19, 1999). Self-implementation, on the other hand, provides overseeing agencies access to all the supporting documentation, while allowing those agencies to set the manner, timing and focus of any review, rather than being bound by an inflexible directive requiring the consumption of scarce administrative resources.

DuPont, therefore, urges EPA to retain the proposal's self-implementing contingent management exemption for paint manufacturing wastes if, in fact, it is determined that the proposed listing is warranted.

(PMLP 000041. DuPont, industry, page 26, 27, w/attachments)

In addition to being an efficient approach, self-implementation is a logical extension of the current waste characterization process that is, itself, self-implementing. Once a waste falls below established concentration levels, it is outside RCRA Subtitle C, and there should be no further delays to its management as a non-hazardous material. We believe such a self-implementing program will be more useful to regulators and the regulated community than a complicated andconvoluted agency review procedure.

Furthermore, self-implementation represents a more appropriate use of limited resources by the overseeing agencies. Case-by-case review and approval "could create undue expense, administrative burden and numerous legal and practical complications." 64 FR 63395 (Nov. 19, 1999). Self-implementation, on the other hand, provides overseeing agencies access to all the supporting documentation, while allowing those agencies to set the manner, timing and focus of any review, rather than being bound by an inflexible directive requiring the consumption of scarce administrative resources.

DuPont, therefore, urges EPA to retain the proposal's self-implementing concentration-based listing approach for paint manufacturing wastes if, in fact, it is determined that the proposed listing is warranted.

(PMLP 000041. DuPont, industry, page 29, 30, w/attachments) (from 10B2)

B. Tiered testing requirements

SUMMARY OF COMMENTS

The Agency received twelve comments, four from associations and eight from industry on the tiered testing requirement based on generated waste volume. All of the commenters supported using generator knowledge in lieu of testing for hazardous waste identification and most commenters did not support the two tiered testing requirement. Only SOCMA stated that if the Agency decides not to allow general use of process knowledge then they support the concept of the two-tiered approach.

VERBATIM COMMENTS

The EPA should keep in mind that the costs of analysis to prove continuously that each batch of discharged water complies with the non-hazardous designation of the Proposed Rule may be expensive redundant and unnecessary. To the extent that EPA decides to use a concentration based approach, we support strongly the allowance for knowledge of the waste as a substitute for analysis. Our production quantities would require unnecessary testing under the Proposed Rule. 66 Fed. Reg. 10134

(PMLP 00001. Magruder, industry, page 7,8)

At present, generators of hazardous waste can use analytical or generator knowledge to determine waste status under RCRA. The listing rule proposes that generators who generate more than 40 metric tons of K 179 waste or 100 metric tons of K 180 waste will be required to develop a waste analysis plan that includes analytical testing. Because paints are formulated with specific chemicals, manufacturers can readily identify those wastes that are RCRA regulated.

The 40 and 100 ton thresholds should be eliminated in lieu of using acceptable analytical or generator knowledge data.

(PMLP 00003. PPG Industries, industry page 2)

The EPA should keep in mind that the costs of analysis to prove continuously that each batch of discharged water complies with the non-hazardous designation of the Proposed Rule may be expensive, redundant and unnecessary. To the extent that EPA decides to use a concentration based approach, we support strongly the allowance for knowledge of the waste as a substitute for analysis. Our production quantities would require unnecessary testing under the Proposed Rule. 66 Fed. Reg. 10134.

(PMLP 00004. BF Goodrich Hilton Davis, Inc., industry, page 7)

The EPA should keep in mind that the costs of analysis to prove continuously that each batch of discharged water complies with the non-hazardous designation of the Proposed Rule may be expensive, redundant, and unnecessary. To the extent that EPA decides to use a concentration-based approach, we support strongly the allowance fcr knowledge of the waste as a substitute for analysis. Our production quantities would require unnecessary testing under the Proposed Rule. 66 Fed. Reg. 10134.

(PMLP 00005. CDR Pigments & Dispersions, industry, page 7)

USWAG generally supports the concentration-based listing approach. In particular, the proposed self-Implementing framework is an essential element of the proposal. However, the proposed limitations on the generator's ability to apply process knowledge to determine waste status is inconsistent with EPA's approach in the toxicity characteristic regulations and would frustrate implementation of the concentration-based listing.

(PMLP 00008. USWAG, association, page 2, w/attachments)

EPA should allow the use of process knowledge for determining the status of wastes subject to a concentration based listing in a manner consistent with its toxicity characteristic (TC) waste determination regulations, 40 C.F.R. § 262.11. The proposed approach to process knowledge is a welcome improvement over that set forth in the dyes and pigments production waste proposal.[5] However, the restriction on the use of process knowledge by large quantity generators of paint production wastes is inconsistent with the TC approach and unjustified.

The proposal limits the use of process knowledge to two situations. First, process knowledge may be used for the threshold determination whether the identified constituents of concern are present in an affected waste stream. 66 Fed. Reg. at 10113. Second, EPA would allow generators of small quantities of paint production wastes (40 metric tons or less per year of paint waste solids or 100 metric tons or less per year of paint was liquids) to use process knowledge to determine whether the constituent concentrations exceed listing thresholds. *Id.* But EPA would require generators of larger amounts to test their wastes annually, regardless of process knowledge that might indicate such testing is pointless. *Id.* There is no environmental benefit in requiring sample collection and analysis when process knowledge is adequate to demonstrate a waste stream's status. EPA's concern for minimizing the burden on small generators *(Id.* at 10114) is commendable, but it is not a justification for imposing unnecessary burdens on large generators.

EPA's alternate proposal to allow use of process knowledge for all generators avoids this disparity. EPA describes the alternate proposal as a "streamlined implementation approach" similar to the approach under the TC regulations. *Id.* at 10114-115. The TC regulations have worked effectively for close to 20 years, enabling scientific and cost-effective waste determinations based on process knowledge for the broad spectrum of potentially hazardous waste streams. We urge EPA to adopt this alternate approach in this and all other concentration-based listings.

5 EPA's proposal for dyes and pigments production wastes would expressly limit the use of process knowledge to a determination whether a constituent is or is not present in a waste stream from the dyes and pigments industries. 64 Fed. Reg. at 40210.

(PMLP 00008. USWAG, association, page 5, w/attachments)

Many SOCMA members use batch-manufacturing operations and generate multiple wastes in conjunction with their specialty and custom chemical manufacturing operations. These companies place a priority on managing their wastes in a responsible manner that satisfies applicable requirements of both federal and state hazardous waste regulations. At the same time, given the substantial cost and burden that can be imposed by these regulations, SOCMA members also seek to minimize the cost and impact of the hazardous waste regulations on their manufacturing operations. Consequently, SOCMA and its members are pleased that EPA has focused on the cost and feasibility of the implementation procedures set out in the Proposed Rule for generators of multiple hazardous waste streams.

SOCMA commends EPA's proposal to allow the use of generator process knowledge to determine whether regulated constituents are present in a waste stream. EPA is correct in stating that generators will have an appropriate basis upon which to make this determination. Under the Proposed Rule, if these constituents are not present, then the generators are able to conclude based on process knowledge that the wastes are outside the scope of the listings and are not subject to any further obligations under the Proposed Rule. 66 Fed. Reg. at 10073. Like generators of other wastes, paint production waste- generators have the option of using either process knowledge or testing to determine whether a waste is hazardous. 40 C.F.R. § 262.11. If they fulfill that obligation and the waste is determined to be nonhazardous, then Subtitle C regulations no longer apply.

SOCMA believes EPA should go a step further and allow use of process knowledge in all instances even for those waste streams where regulated constituents are known to be present in a waste. This would essentially be the same approach relied upon by EPA with respect to the regulations governing characteristic hazardous wastes:

> These regulations classify wastes that exhibit certain properties as having the characteristic of ignitability, corrosivity, reactivity, or toxicity. As a generator, you must identify wastes as characteristic wastes by sampling a waste, or by using appropriate company records concerning the nature of the waste, to determine whether a waste has the relevant properties (see § 262.11(c)). There is no regulatory requirement to conduct sampling, but persons improperly managing materials that are found to be characteristic are subject to enforcement actions under RCRA. (64 Fed. Reg. at 40194.)

As EPA has noted in other contexts, failure to assess accurately whether or not a waste is "hazardous" subjects a generator to enforcement action. EPA has taken the position that there is no "good faith error" defense in the event of inaccurate waste classifications, and generators are well aware of the significant liability that can result from a failure to identify and manage a waste as hazardous in accordance with applicable regulations. Thus, the existing incentives to make an accurate waste classification for characteristic wastes should be equally compelling with respect to concentration-based listings.

However, in the event that EPA decides not to allow general use of process knowledge, then SOCMA supports the concept of a two-tiered approach set out in the Proposed Rule. As EPA noted in the proposal, a substantial portion of the generators covered by the rule generate only a relatively small percentage of the wastes projected to be regulated under the listings:

> It was evident from these distributions that a relatively large percentage of the total hazardous and nonhazardous paint manufacturing wastes are generated by a relatively small percentage of the paint production facilities. For both paint manufacturing waste solids and liquids, approximately 90 percent of the total hazardous and nonhazardous wastes are generated by fewer than 20 percent of the paint production facilities. Based on this observation and in order to minimize the burden on small generators, we decided to propose this two-tiered implementation approach for the concentration-based listings. The tiered approach will allow small generators the option of testing or using knowledge of their wastes to determine whether or not their wastes are hazardous. (66 Fed. Reg. at 10114.)

These facilities can be expected to represent the small business end of the spectrum and have more limited resources. To the extent that these facilities generate relatively lower volumes of listed wastes and also have economic and other resource constraints that may impact their ability to test, SOCMA considers it an appropriate option to allow these entities to rely on process knowledge rather than mandate testing.

SOCMA is pleased that EPA has acknowledged the need to consider the economic and practical impact of mandating testing. For small companies and smaller volume generators, an obligation to test to qualify for an exemption can make claiming the exemption cost-prohibitive. This is particularly true in the context of batch production facilities that may generate multiple low-volume waste streams.

(PMLP 00012. SOCMA, association, page 11, 12)

We are also very concerned about analytical costs with this rulemaking. We are having a difficult time figuring out exactly how to properly test waste streams, e.g., how many samples, how often, etc.). The EPA said that we could use generator's knowledge, but some chemical levels are so low, it may be tough to rely only on formulation data. We are also having difficulty to determining test methods for listed monomers and commercial laboratories that can perform analyses.

(PMLP 00018. Duron Paints & Wall Coverings, industry, page 2)

Under the Agency's proposal, generators can use knowledge of the wastes (based on existing sampling and analysis, information about raw materials used, production processes, or degradation products formed) to determine whether any of the constituents of concern are present. If the wastes do not contain any of the proposed constituents of concern, further evaluation is not needed and the waste is not hazardous. This approach, which the Council strongly supports, is consistent with existing waste determination requirements under 40 CFR § 262.11(c).

The Council does not support EPA's proposed tiered waste analysis requirements. Generators are accustomed to conducting waste characterizations and evaluating waste compositions against regulatory limits. There is no basis to limit the use of generator knowledge by the amount of waste generated or to create a more burdensome analytical regime for potential hazardous wastes. The proposed two-tiered threshold approach creates an additional burden for industry without realizing any actual benefit to the environment.

(PMLP 00030. ACC, association, page 3)

Eastman does not support the proposed two-tiered threshold approach basis, based on the amount of waste generated, believing it is unnecessary and of no benefit.

(PMLP 00032. Eastman Chemical Co., industry, page 11)

Under RCRA's hazardous waste determination a person who generates a solid waste must determine whether or not it is hazardous by either "testing the waste . . . or applying knowledge of the hazard characteristic of the waste in light of the materials and processes used." 40 C.F.R. 262.1

l(c)(l), (2) Not only are generators accustomed to conducting waste characterizations, they are accustomed to evaluating waste compositions against regulatory limits. In addition, the nature of paint manufacturing, a batch process with specific constituent used and no reactions taking place, make generator knowledge a reliable source for characterizing any waste stream. There is no basis to limit the use of generator knowledge by the amount of waste generated or to create a new arduous analytical regime. The proposed two-tiered threshold approach merely creates an additional burden for industry without realizing any actual benefit to the environment. EPA's proposed tiered waste analysis requirements are arbitrary, and should favor the traditional regulatory approach under RCRA of generator knowledge or testing.

(PMLP 00033. NPCA, association, page 41, 42, w/attachments)

Under RCRA's hazardous waste determination a person who generates a solid waste must determine whether or not it is hazardous by either "testing the waste . . or applying knowledge of the hazard characteristic of the waste in light of the materials and processes used." 40 C.F.R. 262.1 1(c)(l), (2). There is no basis to limit the use of generator knowledge by the amount of waste generated. The proposed two-tiered threshold approach merely creates an additional burden for industry without realizing any actual benefit to the environment. EPA's proposed tiered waste analysis requirements should be revised to include the traditional regulatory approach under RCRA of generator knowledge or testing.

(PMLP 00039. ICI Paints North America, industry, page 4)

The Agency is proposing that generators could use knowledge of their wastes to make initial determinations as to whether any portion of their wastes contain any of the constituents of concern, regardless of the quantity of wastes generated. If any portion of the wastes will not contain any of the constituents of concern at the point of generation (or in the case of paint waste liquids, the waste is managed in compliance with the conditional exemption), further evaluation is not necessary, and the waste would be considered nonhazardous. 66 FR 10113 (Feb. 13, 2001). DuPont strongly supports this approach, which is consistent with current waste determination requirements under 40 CFR 262.11(c).

On the other hand, should a generator determine that its paint manufacturing waste could reasonably contain one or more constituents of concern, the EPA has proposed that the generator would then either use a two-tiered approach to determine whether the waste is nonhazardous or manage it as a hazardous waste. [Under the proposed two-tiered approach, if you generate more than a prescribed weight, based upon waste form, of paint manufacturing wastes annually, you would be required to test the waste versus having the option of testing or relying upon process knowledge]. The Agency also seeks comment on an alternative approach of allowing all generators to rely on process knowledge or testing, regardless of the volume of waste generated annually. 66 FR 10113-5 (Feb. 13, 2001). DuPont strongly supports the streamlined alternative approach, whereby all generators could rely on process knowledge or testing of the waste, regardless of the volume of waste generated annually.

As the Agency notes in the preamble to the proposed rule, a concentration-based listing approach draws from the concept of the toxicity characteristic to define a hazardous waste based on concentration levels of key constituents in the wastes. 66 FR 10073 (Feb. 13, 2001). Current waste determination requirements at 40 CFR 262.11(c) allow generators to determine whether their wastes exhibit a hazardous waste characteristic (e.g., Toxicity Characteristic) by either testing the waste or applying knowledge of the hazard characteristic of the waste in light of the materials or processes used. Generators have, therefore, become accustomed to complying with these waste determination requirements and evaluating waste compositions against regulatory limits for over the past 20 years. We believe that this system has worked reasonably well, both for the regulated community and the overseeing agencies.

As the Agency also notes in the Listing Background Document, manufacturers follow fairly exacting formulas towards producing paints and coatings. Specifically, the paint manufacturing process is basically a blending process, which does not involve chemical reactions; hence, the paint raw materials will pass unchanged into the waste streams generated during production. Thus, based upon the high total constituent concentrations proposed, manufacturer's, small or large, are likely to be able to readily determine, based upon process knowledge, whether any constituents of concern are present at or above the proposed concentration-based listing levels. Nevertheless, even if the Agency were to choose to adopt the alternative leachate concentrations as the concentration-based listing levels for paint waste solids, these proposed leachate concentrations are not significantly different than the existing Toxicity Characteristic levels.

Finally, a mandatory testing requirement under the two-tiered approach would lead to serious and significant economic impacts not fully accounted for in the Agency's economic analysis. For example, based upon a quotation for services provided by Lancaster Laboratories (See Attachment B), DuPont estimates that the cost to potentially generate statistically significant data at $13,680-$20,520 for each paint waste solid matrix and $26,680-$40,020 for each paint waste liquid matrix. This estimate excludes costs to determine which method may be viable for acrylamide analysis (i.e., $5,000) and the method validation costs that would follow should any of the methods be determined to be viable. All said, there is no guarantee that the methods will provide meaningful data opposite the proposed listing levels, nor do these costs reflect what the costs to analyze an "appropriate" number of samples would be (i.e., the above estimates are based upon four samples being collected). [NOTE: DuPont does not endorse the alternative of spiking analytes in actual samples matrices because we do not believe it would adequately test selectivity, nor would it provide precision data].

While DuPont appreciates the Agency's attempt to minimize the burden on small generators, we see no good reason why implementation requirements under a concentration-based listing approach should be significantly different than current waste determination requirements under 40 CFR. 262.11(c). The proposed two-tiered approach does nothing more than create an additional burden for industry without realizing any actual benefit to human health and the environment. DuPont, therefore, recommends the EPA adopt its proposed streamlined implementation approach as part of any final rule.

(PMLP 00041. DuPont, industry, page 30, 31, w/attachments)

C. Testing of wastes

SUMMARY OF COMMENTS

The Agency received eight comments, three from associations and five from industry on testing of wastes. Most commenters did not support the maximum concentration approach for waste characterization. Instead most supported the proposed alternative to use averaging for demonstrating compliance, with an 80 percent upper confidence limit as currently required by SW-846. A few commenters also suggested a third alternative not discussed in the proposed rule, long-term rolling average. Many commenters also did not support the use of grab samples for enforcement purposes. DuPont also recommended that whichever approach is used to demonstrate compliance, the same approach should be used for enforcement purposes. DuPont and NPCA did not support the proposed annual follow-up testing for wastes previously determined to be non hazardous. Instead, they both recommended that there be no prescribed frequency of re-analysis. The subsequent re testing should be determined based on changes in materials used or processes generating the waste. Both commenters also stated that if retesting is necessary, the same sampling and analysis scheme should not be required for the initial and subsequent testing. DuPont did state that if the Agency adopts the proposed annual sampling and analysis requirements they support suspending the annual testing requirement when the waste has been determined to be NonHazardous for three consecutive years. NPCA noted that there is no clear guidance for how to determine if the appropriate number of samples are collected or how to compare the results to demonstrate compliance. NPCA also expressed support for EPA's definitions of requirement and condition in the proposed rule.

VERBATIM COMMENTS

In the Proposed Rule, EPA takes many productive steps to structure the proposed listing in a manner that takes account of the unique nature of batch production operations. However, EPA thus far has failed to acknowledge the need to provide comparable flexibility with respect to waste sampling and characterization:

> We are proposing that the maximum concentration of any constituent detected in any sample must be below the established listing level in order for you to determine that the waste is nonhazardous. We are proposing this approach because we believe that it is the most

straightforward to ensuring concentrations are below risk-based levels. (66 Fed. Reg. at 10116.)

Under this approach, a single sample from a batch production run will determine whether or not the waste stream from that batch is “hazardous”, regardless of whether that single sample is a “representative sample” of the waste stream as a whole.

SOCMA is concerned since this “maximum concentration” approach appears to obviate the concept of a “representative sample” as the basis for waste characterization. The risk posed by the waste stream and hence its status as “hazardous” or “nonhazardous” cannot be characterized based upon a single sample. The variability of the waste stream must also be taken into account. Accordingly, SOCMA urges EPA to modify this position in the final rule. The preamble discussion indicates that the Agency recognizes this issue and the potential merit of characterizing the waste through an averaging approach, which would incorporate waste variability into the waste characterization process. SOCMA strongly supports this alternative.

The more comprehensive waste characterization approach should be the basis for any enforcement with respect to these waste listings as well. The preamble to the Proposed Rule indicates that EPA would still intend for enforcement actions by federal or state officials to be based upon a “grab sample” approach. Insofar as waste characterization under RCRA is predicated upon “representative sample” concept, and risk characterization under EPA’s guidelines is meant to be based upon comprehensive use of data, it is time for EPA to move forward and develop a more sophisticated basis for waste characterization in the context of enforcement under RCRA. The one-shot “grab sample” approach may have the benefit of simplicity, but it does not represent good science or good policy.

(PMLP 00012. SOCMA,, page 13, 14)

Added costs for testing and disposal of water based wastes, which represent no harm to human health or the environment.

(PMLP 00024. Akzo Nobel, page 2)

When testing is necessary, the Council supports EPA’s representative sampling methodology. Rather than prescribing a specific number of samples for all waste streams, the proposed rule allows a generator to develop a waste sampling and analysis plan for determining that the constituents of concern in the wastes are below listing levels. 66 Fed. Reg. at10115.

However, The Council cannot support the proposal that grab samples would be used for enforcement purposes. Having to meet concentration-based levels on a per-sample basis does not consider the expected variability in both manufacturing and waste treatment processes, as well as testing and analysis. Most sampling and analytical methodologies actually recognize the probability of sampling or analytical variability inherent in the methodology. In other words, the methods themselves are not expected to be accurate 100% of the time!

Variability should be taken into account, as it is inherent whenever a waste stream is analyzed and compared to a regulatory standard. As an alternative to the strict maximum standard, the Council supports, with modification, EPA's proposed alternative to use averaging for demonstrating compliance; however, the Council further recommends using an 80 percent upper confidence limit. In the proposed rule, EPA requests comments on whether, as an alternative to using the strict maximum standard for compliance, the generator should be allowed to average the concentrations of constituents detected in multiple waste samples taken from some quantity of waste generated or collected over a certain period of time. 66 Fed. Reg. at 10116. Under this approach EPA would require the generator to calculate concentrations using an upper confidence limit associated with the mean concentration in the candidate waste to compare to the listing levels established for the constituents. The Council agrees that this approach allows for a degree of variability in the concentration of individual samples in the waste. That is, it allows occasional values above the exemption level.

However, a higher (*e.g.*, 95 percent) upper confidence limit would provide very little improvement over the maximum standard. Even at 80 percent, as is the standard practice per SW-846, the number of samples required might be great enough (depending on the number and variability of constituents being analyzed) that the cost for sampling and analysis could outweigh any benefits to be gained from a non-hazardous determination. Thus, the Council supports using an 80 percent upper confidence limit.

Another alternative not proposed in this rulemaking, but relevant is the use of a long-term rolling average. Using this alternative, facilities could use long-term average data to demonstrate compliance without consideration of the upper confidence limit. Occasional samples could fall above the exit levels without affecting the non-hazardous determination. What is important is that over a period of time, the average concentration is at or below the concentration-based levels of concern. The Council recommends EPA include this alternative, if a listing determination is warranted. This approach would provide greater flexibility to industry in complying with the final rule. Furthermore, the Council recommends identifying a set of alternative approaches as discussed above and allow a facility to select the one that best represents the conditions of its waste stream(s), rather than select a single statistical method. However, it is important that the alternative the facility selects is the same alternative that would be used in an enforcement context to evaluate the facility's compliance.

(PMLP 00030. ACC, page 3)

EPA should continue to apply the 80 percent confidence limit for determining the RCRA regulatory status of waste stream as set forth in SW-846. There is no justification for applying a different confidence limit to paint waste. Since EPA will be basing compliance on grab samples of a highly variable waste stream, the 80 percent confidence interval allows for that variability without compromising environmental concerns.

(PMLP 00031. Rohm and Haas, page 4)

In multiple comments on past HWIR rulemakings, Eastman has taken a strong position relevant to sampling/analysis and demonstration that a concentration-based exemption is met. We do not support the Agency's preferred option of never exceeding the listing levels. This option will work only for waste streams with just one or a very few chemicals of concern, all of which are many standard deviations below the listing level. Otherwise, it is a statistical certainty that sooner or later, at least one of the chemicals will test "out." Eastman strongly supports a statistical approach, such as an 80 percent confidence limit or a long-term rolling average. The Agency's suggested 95th percentile under a confidence limit approach (66 FR 10116) is hardly an improvement over the strict maximum standard option, and Eastman can only support a more reasonable level, such as 80 percent.

(PMLP 00032. Eastman Chemical Co., page 12)

If a listing determination moves forward, despite NPCA objection, NPCA supports EPA's representative sampling methodology when testing is considered necessary to make a determination. Rather than prescribing a specific number of samples for all waste streams, the Proposed Rule allows a generator to develop a waste sampling and analysis plan that accurately determines that the concentrations of constituents of concern in wastes are below listing levels.[70] This is consistent with RCRA's characteristic program's foundation. Representative samples, as defined in 40 CFR 260.10, are expected to exhibit the average properties of the universe or whole. The basis for this rule is the variability of waste. However, the Proposed Rule states that for enforcement purposes grab samples would be used.[71] Having to meet concentration-based levels on a per-sample basis does not take into consideration the expected and unavailable variability in both manufacturing or waste treatment processes, but also testing and analysis and is in conflict with existing RCRA policy. Most sampling and analytical methodologies actually recognize the probability of samplin g or analytical variability inherent in the methodology. In other words, the methods themselves are not expected to be accurate 100% of the time.

Variability should be taken into account, as it is inherent whenever a waste stream is analyzed and compared to a regulatory standard. As an alternative to the strict maximum standard, NPCA supports EPA's alternative for demonstrating compliance, averaging, with modification. In its request for comments, EPA asks whether, as an alternative to using the strict maximum standard for compliance, EPA should allow the generator to average the concentrations of constituents detected in multiple waste samples taken from some quantity of waste generated or collected over a certain period of time?[72] Under this approach EPA would require the generator to calculate concentrations using an upper confidence limit (set at some level of confidence, such as 95 percent) associated with the mean concentration in the candidate waste to compare to the listing levels established for the constituents. NPCA agrees that this approach allows for a degree of variability in the concentration of individual samples in the waste. That is, it allows occasional values above the exemption level. However, NPCA would support this alternative at an 80 percent confidence limit.

It is NPCA's opinion that EPA's reference to a 95 percent upper confidence limit in the Proposed Rule is unreasonable and that this alternative would provide very little improvement over the strict maximum standard. Even at a more reasonable 80 percent, as is the standard practice per SW-846, the number of samples required might be great enough (depending on the number and variability of constituents being analyzed) that the cost for sampling and analysis could outweigh any benefits to be gained from a non-hazardous determination. Thus, NPCA cannot support this alternative if the upper confidence limit is set at 95 percent, but could more easily support it if set at 80 percent.

Another alternative not proposed in this rulemaking, but relevant is the long-term rolling average. Using this alternative, facilities could use long-term average data to demonstrate compliance without consideration of the upper confidence limit. Occasional samples could fall above the exit levels without affecting the non-hazardous determination. What is important is that over a period of time, the average concentration is at or below the concentration-based levels of concern. NPCA suggests EPA include this alternative (assuming any listing is warranted), in order to provide greater flexibility to industry in complying with the final rule. And rather than select a single statistical method, NPCA recommends EPA identify a set of alternative approaches as discussed above and allow a facility to select the one that best represents the conditions of its waste stream(s).

It is important, however, that whichever alternative the facility selects is the same alternative that would be used in an enforcement context to evaluate the facility's compliance. As long as the methods meet the "reliability" test, enforcement officials should use the same test methods as the generator to evaluate compliance. There is precedent for this approach in the RCRA Subpart CC requirements.

Should a hazardous waste listing determination move forward, over NPCA objection, the variability and other characteristics of the waste stream should largely determine how frequently testing and follow-up testing should be conducted. Therefore, NPCA does not agree with the proposed annual follow-up sampling and analysis for wastes that were previously determined to be non-hazardous. NPCA believes that, as with the existing characteristic program, that there should be no prescribed frequency of re-analysis. Rather, such re-analysis should be dictated by changes in the materials used or process generating the waste, which might cause the waste to contain or exceed concentration levels of constituents of concern. Where testing is required to make a non-hazardous determination, the facility should only have to provide a representative number of samples.

The Proposed Rule states the "number of samples required to determine that the concentrations of constituents of concern in your wastes are below the listing levels for these constituents would depend on how close the actual concentrations were to the listing concentrations and on the variability of the wastes you generated during the course of the year.[73] A background document prepared by an EPA contractor for the Hazardous Waste Identification Rule (HWIR), *Estimates of Sample Sizes Required for a Generator to Demonstrate a Waste Qualifies for Exemption Under HWIR* indicates that much more guidance is needed on how to determine how many samples are appropriate. As shown in Tables 2, 3, and 4 in this document, the minimum number is 4. However, this minimum number only applies if the sample concentration is well below the regulated level and the method used is fairly accurate. Where the analyte concentration is 25% of the regulated level, and the method is less precise and more biased (methods used for the analyses of paint wastes are likely to show significant imprecision and bias as discussed below), this document states “the interval cannot be achieved at the selected confidence level with any number of samples.”

The Proposed Rule goes on to indicate that the results are to be compared to the listing levels to determine if the wastes are non-hazardous and that the generator is to “consider any expected fluctuations in concentrations.” There is no clear guidance for how to determine if the appropriate number of samples were collected or how to compare the results to demonstrate compliance.

As stated previously, the nature of paint manufacturing, in batch processes with specific raw materials and no reactions, allows for reliable generator knowledge. It also allows for reliable representative analysis. As long as the process does not change, the waste stream will remain constant and substantial follow-up testing is redundant and burdensome.

If a process does change or follow-up testing is required, NPCA does not believe EPA should require the same knowledge or testing scheme for both initial and subsequent sampling and analysis of waste streams. NPCA agrees that a facility should employ the same method for both the initial and subsequent evaluations, but we do not believe that the same constituents, or the same number of samples, if testing is warranted, are always necessary. Depending on the variability of the waste stream, it may be necessary for a facility to take the same number of samples used in the initial characterization. However, for very consistent streams, process knowledge or many fewer samples may be necessary to provide the same level of confidence that the waste stream does not contain constituents of concern at the listed levels. Similarly, the results of the initial characterization may demonstrate a need to analyze different constituents more or less frequently. There may be little value in frequent analysis for constituents far below listed levels of concern. However, more frequent analysis may be needed for constituents near the listed levels.

In addition to differences in constituent concentrations within a waste stream, the actual composition of the waste stream may change in response to process changes. Where a change results in the removal of a constituent from a waste stream, the facility should be able to document the change and no longer analyze for that constituent. For these reasons, we recommend that EPA not require the same sampling and analysis for the initial and subsequent testing, when required. Rather, EPA should allow facilities to develop subsequent analytical protocols based on the features of their waste streams.

NPCA, however, supports EPA’s definitions of requirement and condition in the Proposed Rule. Condition is read as an obligation that demonstrates that the paint manufacturing waste is not hazardous. In other words, the waste does not exceed the proposed levels of concern or is managed exclusively in tanks and containers prior to discharge under the Clean Water Act (CWA). If a condition is not fulfilled, then the waste is hazardous and subject to RCRA Subtitle C management. Requirements, on the other hand, do not affect the listing determination of the waste, but speak to the compliance aspects of the rule. If a recordkeeping requirement were not met, it would not affect the non-hazardous status of the waste; it would be deemed a violation under RCRA. As read, the Proposed Rule does not appear to intend to condition the regulatory status of the waste upon recordkeeping or paper work requirements. This would be consistent with current RCRA rules.

Non-hazardous waste does not become hazardous based on non-compliance of recordkeeping and documentation requirements. While enforcement actions result from violations of such requirements, such violations do not convert a non-hazardous waste into a hazardous waste. The same concept applies in RCRA's Used Oil program and the recently promulgated Cholorinated Aliphatics Production Waste Listing and the proposed Dye and Pigment Industries Waste Listing (hereby incorporated by reference). NPCA agrees with this approach and requests that it remains an element in any final paint production waste listing.

70 Fed. Reg. 10115 (Feb. 13, 2001).

71 66 Fed. Reg. 10115 (Feb. 13, 2001).

72 Id at 10116.

73 66 Fed. Reg. 10116 (Feb. 13, 2001).

(PMLP 00033. NPCA, page 42, 43, 44, w/attachments)

The Proposed Rule allows a generator to develop a waste sampling and analysis plan that accurately determines that the concentrations of constituents are below listing levels. However, the Proposed Rule states that for enforcement purposes grab samples would be used. Meeting concentration-based levels on a per-sample basis does not take into consideration the expected and unavailable variability in both manufacturing or waste treatment processes. Most sampling and analytical methodologies actually recognize the probability of sampling or analytical variability inherent in the methodology. Variability should be taken into account, as it is inherent whenever a waste stream is analyzed and compared to a regulatory standard.

In its request for comments, EPA asks whether, as an alternative to using the strict maximum standard for compliance, the generator be allowed to average the concentrations of constituents detected in multiple waste samples taken from some quantity of waste generated or collected over a certain period of time. Under this approach EPA would require the generator to calculate concentrations using an upper confidence limit (set at some level of confidence, such as 95 percent) associated with the mean concentration in the candidate waste to compare to the listing levels established for the constituents.

This approach allows for a degree of variability in the concentration of individual waste samples where it would allow occasional values above the exemption level. ICI Paints would support this approach but not at a 95 percent confidence limit as referenced in the Proposed Rule. The 95 percent upper confidence limit is unreasonable and that this alternative would provide very little improvement over the strict maximum standard. ICI Paints request that EPA use a 80 percent confidence limit for testing.

(PMLP 00039, ICI Paints North America, page 4)

When testing is necessary in order to properly characterize paint manufacturing wastes, DuPont supports the EPA's proposed representative sampling and analysis approach for both initial and any subsequent testing. Rather than prescribing a specific number of samples for all waste streams, the proposed rule allows a generator to develop a waste sampling and analysis plan that accurately determines that the concentrations of constituents of concern in wastes are below listing levels. 66 FR 10115 (Feb. 13, 2001). This is consistent with current waste determination requirements under 40 CFR 262.11(c).

On the other hand, for enforcement purposes, the proposed rule states that grab samples would be used. 66 FR 10115 (Feb. 13, 2001). Having to meet concentration-based levels on a per-sample basis does not take into consideration the expected variability in both manufacturing and waste treatment processes, but also testing and analysis. Most sampling and analytical methodologies actually recognize the probability of sampling or analytical variability inherent in the methodology. In other words, the methods themselves are not expected to be accurate 100% of the time. Ideally, enforcement officials should be expected to follow the same sampling and analysis methodology used by the generator, but practically this may not be possible. Nevertheless, at the very least, consistent with the EPA's prior positions for evaluating compliance with RCRA Air Emission Standards, enforcement officials should be required to use the same analytical methods employed by the generator, provided appropriate and reliable analytical methods were used.

As the Agency notes in the preamble to the proposed rule, the concentration-based listing approach draws from the concept of the toxicity characteristic to define a hazardous waste. 66 FR 10073 (Feb. 13, 2001). However, the Agency's proposed "maximum concentration approach" seems to more closely resemble its implementation policy for the delisting program.

Variability should be taken into account, as it is inherent whenever a waste stream is analyzed and compared to a regulatory standard. As an alternative to the strict maximum standard, DuPont supports the EPA's proposed alternative to allow averaging for demonstrating compliance, with some modification. In its request for comments, the EPA asks whether, as an alternative to using the strict maximum standard for compliance, EPA should allow the generator to average the concentrations of constituents detected in multiple waste samples taken from some quantity of waste generated or collected over a certain period of time. 66 FR 10116 (Feb. 13, 2001). Under this approach the Agency would require the generator to calculate concentrations using an upper confidence limit (set at some level of confidence, such as 95 percent) associated with the mean concentration in the candidate waste to compare to opposite the listing levels established for the constituents. DuPont agrees that this approach allows for a degree of variability in the concentration of individual samples in the waste. That is, it allows occasional values above the exemption level.

It is DuPont's opinion, however, that a 95 percent upper confidence limit is unreasonable and this alternative would provide very little improvement over the strict maximum standard. Even at a more reasonable 80 percent, as is the standard practice per SW-846, the number of samples required might be great enough (depending on the number and variability of constituents being analyzed) that the cost for sampling and analysis could outweigh any benefits to be gained from a non-hazardous determination. Thus, DuPont does not support this alternative if the upper confidence limit is set at 95 percent, but could more easily support it if set at 80 percent.

Another alternative not proposed in this rulemaking, but relevant, is the long-term rolling average. Using this alternative, facilities could use long-term average data to demonstrate compliance without consideration of the upper confidence limit. Occasional samples could fall above the listing levels without affecting the non-hazardous determination. What is important is that over a period of time, the average concentration is at or belowthe concentration-based levels of concern. DuPont recommends the EPA include this alternative if, in fact, a listing is warranted. This approach would provide greater flexibility to industry in complying with the final rule.

Rather than select a single statistical method, DuPont recommends EPA identify a set of alternative approaches as discussed above and allow a facility to select the one that best represents the conditions of its waste stream(s). It is important, however, that whichever alternative the facility selects is the same alternative that would be used in an enforcement context to evaluate the facility's compliance.

DuPont believes that the variability and other characteristics of the waste stream should largely determine how frequently follow-up sampling and analysis should be conducted. Therefore, we do not agree with the proposed annual sampling and analysis requirements for wastes previously determined to be nonhazardous. Rather, as with the existing characteristic program (i.e., the same program that a concentration-based listing approach conceptually draws from), there should be no prescribed frequency of re-analysis. That is, subsequent sampling and analysis should be dictated by changes in the materials used or process generating the waste, which might cause the waste to contain or exceed concentration levels of constituents of concern. As long as the process does not change, the waste stream(s) will normally be expected to remain constant (due to the exacting formulas followed in producing paints and coatings) and substantial follow-up testing is redundant and unnecessarily burdensome.

If a process change should occur or subsequent testing otherwise be deemed necessary, DuPont does not believe the EPA should require the same sampling and analysis scheme for both initial and subsequent testing. We agree that a facility should employ the same test method(s) for both the initial and subsequent evaluations, but we do not believe that the same constituents, or the same number of samples, if testing is warranted, are always necessary. Depending on the variability of the waste stream, it may be necessary for a facility to take the same number of samples used in the initial characterization. However, for very consistent streams, process knowledge or many fewer samples may be adequate to provide the same level of confidence that the waste stream does not contain constituents of concern at or above the listing levels. (Most importantly, the facility should simply be expected to collect a representative number of samples). Similarly, the results of the initial characterization may demonstrate a need to analyze different constituents more or less frequently. There may be little value in frequent analysis for constituents far below listing levels. On the other hand, more frequent analysis may be needed for constituents near the listed levels.

In addition to differences in constituent concentrations within a waste stream, the actual composition of the waste stream may change in response to process changes. Where a change results in the removal of a constituent from a waste stream, the facility should be able to simply document the change and no longer analyze for that constituent.

Conversely, where a process change results in the addition of new chemicals or increases chemical concentrations, re-analysis may be necessary. DuPont supports this approach because any subsequent sampling and analysis is triggered based upon the expected impact of the change.

For these reasons, we recommend that the EPA not require the same sampling and analysis for the initial and subsequent testing, when necessary. Rather, EPA should allow facilities the flexibility to develop subsequent sampling and analytical protocols based on the unique features of their waste streams.

Alternatively, should the Agency adopt its proposed annual sampling and analysis requirements, DuPont supports the notion of suspending annual testing requirements when the generator has appropriately determined that its waste(s) are nonhazardous for three consecutive years.

(PMLP 00041. DuPont, page 31, 32, 33, 34, w/attachments)

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D. Recordkeeping provisions

SUMMARY OF COMMENTS

The Agency received five comments, three from associations and two from industry, all supporting EPA's distinction between requirements and conditions with respect to recordkeeping provisions supporting the contingent management exemption. All the commenters agreed that not meeting a requirement should not affect the non-hazardous status of paint manufacturing wastes.

VERBATIM COMMENTS

For affected wastes to qualify as non-hazardous under either the contingent management or the concentration based approach, EPA would require generators to maintain on-site documentation of specific supporting facts for the most recent three year period. 66 Fed. Reg. at 10116. EPA has appropriately designated these recordkeeping provisions "requirements" rather than "conditions". *Id.* The distinction is significant to the implementation of the regulations and progress towards the underlying goal of targeted regulation of hazardous wastes. As "requirements," the provisions are enforceable by EPA under RCRA § 3008. However, failure to comply with a requirement does not result in the sacrifice of the non-hazardous status of an otherwise qualifying waste.

EPA has correctly recognized that failure to comply with a recordkeeping requirement does not render hazardous a waste that is not a threat to human health and the environment. To regulate such wastes as hazardous wastes would conflict with the fundamental directive of RCRA § 3001(b) to list as hazardous those solid wastes that "pose a substantial present or potential hazard to human health or the environment" (RCRA § 1004(5)). We encourage EPA to adopt a consistent approach throughout the hazardous waste management program.

(PMLP 00008. USWAG, page 7, w/attachments)

At the same time, EPA has proposed specific record keeping requirements to be met by generators claiming that their wastes are nonhazardous based upon either composition or upon the contingent management exemption. In this regard, the preamble discussion in the Proposed Rule draws an important distinction between regulatory requirements that are determinative of the "hazardous" status of a waste, as opposed to other regulatory requirements that serve to document compliance. EPA thus draws a distinction between what it terms "requirements" versus "conditions":

> We are proposing to require record keeping under the authority of sections 2002 and 3007 of RCRA. These are requirements and not conditions of the waste being nonhazardous. A condition is a standard that you or your waste must meet in order for your waste to become or remain nonhazardous. If a condition is not fulfilled, then the waste is hazardous and subject to RCRA Subtitle C requirements. A requirement is not an obligation whose violation would affect the nonhazardous status of the waste but would be a violation under RCRA. Failure to comply with these requirements could result in an enforcement action under section 3008 of RCRA. (66 Fed. Reg. at 10116.)

SOCMA supports EPA's distinction between requirements and conditions and recommends that the Agency address and expand upon this distinction in guidance separate and apart from the Proposed Rule.

(PMLP 00012. SOCMA, page 13)

In the proposed rule, EPA differentiates between a "condition" and a "requirement". 66 Fed. Reg. at 1011. For paint manufacturing waste, the Council would define a "condition" as an obligation that demonstrates that the waste does not exceed specified concentration-based hazard levels or, in the case of contingent management, that the waste is actually managed exclusively in tanks and containers prior to discharge to a POTW or under a NPDES permit. If a "condition" is not fulfilled, then the waste is hazardous and subject to RCRA Subtitle C requirements.

In turn, we would define a "requirement" as other obligations that do not, in themselves, affect the non-hazardous status of the waste *(e.g.,* record keeping requirements). If a "requirement" were not met, that would not affect the non-hazardous status of the paint manufacturing waste, but would be a violation under RCRA. Thus, we agree that EPA not condition the regulatory status of wastes upon a record keeping or paperwork requirement. See Chlorinated Aliphatics Production Wastes, 64 Fed. Reg. 46509 (Aug. 25, 1999).

Under current RCRA rules, non-hazardous waste does not become hazardous because a person fails to comply with an administrative requirement. Violation of essentially administrative requirements can, and in appropriate cases should, result in enforcement action, but such a violation cannot convert a non-hazardous waste that was never subject to Subtitle C into a hazardous waste. The same rule applies in RCRA's Used Oil program and the recently promulgated Chlorinated Aliphatics Production Wastes conditional listing for EDC/VCM wastewater treatment sludge, and was also an element of the Dye and Pigment Industries proposed rule. It should remain an element in any Paint Manufacturing Production Wastes final rule.

(PMLP 00030. ACC, page 11)

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Eastman agrees with the differentiation EPA has made between a condition and a requirement. That is, a condition is an obligation that must be met for a listed waste to be considered and managed as nonhazardous. If such condition, such as not exceeding specified concentration-based levels, is not met, the waste loses its nonhazardous status and must be managed as hazardous. Requirements are obligations, such as recordkeeping, that do not affect the status of the waste as hazardous or nonhazardous, but if not met, would be a violation under RCRA. The distinction between these two terms is consistent with current RCRA rules.

(PMLP 00032. Eastman Chemical Co., industry, page 11)

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NPCA, however, supports EPA's definitions of requirement and condition in the Proposed Rule. Condition is read as an obligation that demonstrates that the paint manufacturing waste is not hazardous. In other words, the waste does not exceed the proposed levels of concern or is managed exclusively in tanks and containers prior to discharge under the Clean Water Act (CWA). If a condition is not fulfilled, then the waste is hazardous and subject to RCRA Subtitle C management. Requirements, on the other hand, do not affect the listing determination of the waste, but speak to the compliance aspects of the rule. If a recordkeeping requirement were not met, it would not affect the non-hazardous status of the waste; it would be deemed a violation under RCRA. As read, the Proposed Rule does not appear to intend to condition the regulatory status of the waste upon recordkeeping or paper work requirements. This would be consistent with current RCRA rules. Non-hazardous waste does not become hazardous based on non-compliance of recordkeeping and documentation requirements. While enforcement actions result from violations of such requirements, such violations do not convert a non-hazardous waste into a hazardous waste. The same concept applies in RCRA's Used Oil program and the recently promulgated Cholorinated Aliphatics Production Waste Listing and the proposed Dye and Pigment Industries Waste Listing (hereby incorporated by reference). NPCA agrees with this approach and requests that it remains an element in any final paint production waste listing.

(PMLP 00033. NPCA, page 43 w/attachments ([from 10B2])

In the proposed rule, EPA differentiates between a "condition" and a "requirement". 66 ER 10116 (Feb. 13, 2001). For paint manufacturing waste, DuPont would define a "condition" as an obligation that demonstrates that the waste does not exceed specified concentration-based hazard levels or, in the case of contingent management, that the waste is actually managed in accordance with the conditional exemption. If a "condition" is not fulfilled, then the waste is hazardous and subject to RCRA Subtitle C requirements.

In turn, DuPont would define a "requirement" as other obligations that do not, in themselves, affect the non-hazardous status of the waste (e.g., record keeping requirements). If a "requirement" were not met, that would not affect the non-hazardous status of the paint manufacturing waste, but would be a violation under RCRA. Thus, we are in apparent agreement that it is not [EPA's] intent to condition the regulatory status of the waste upon a record keeping or paperwork requirement. See Chlorinated Aliphatics Production Wastes, 64FR 46509 (Aug. 25, 1999).

Under current RCRA rules, non-hazardous waste cannot become hazardous because a person fails to comply with an administrative requirement. Violation of essentially administrative requirements can, and in appropriate cases should, result in enforcement action, but such a violation cannot convert a non-hazardous waste that was never subject Subtitle C into a hazardous waste. The same rule applies in RCRA's Used Oil program and the recently promulgated Chlorinated Aliphatics Production Wastes conditional listing for EDC/VCM wastewater treatment sludge, and was also an element of the Dye and Pigment Industries proposed rule. It should remain an element in any Paint Manufacturing Production Wastes final rule.

(PMLP 00041. DuPont, page 34, 35, w/attachments)

E. Self-implementing approach for the proposed listings

SUMMARY OF COMMENTS

The Agency received two comments, one from SOCMA and one from DuPont, both supporting the self-implementing approach of the proposed rule. SOCMA also supports the use of routine records to document the exempt status of wastes stored in tanks or containers prior to discharge to a POTW or an NPDES-permitted system. DuPont supports the maintenance of documentation for three years.

VERBATIM COMMENTS

SOCMA supports EPA's proposal to rely on routine records to document the exempt status of wastes stored in tanks and containers prior to discharge to a POTW or an NPDES-permitted system. Given the exempt status of these wastes, it would be inconsistent and potentially confusing to require the use of hazardous waste manifests to track and document shipments. Routine business and waste management records can and should be relied upon by EPA as sufficient and appropriate documentation of the ultimate disposition of these wastes. Separate Subtitle C paperwork and recordkeeping requirements for these wastes would be redundant.

Forgoing any separate Subtitle C paperwork requirements for these materials is also consistent with EPA's commitment to the Office of Solid Waste Burden Reduction Project. As EPA has recognized, the cumulative paperwork burden associated with RCRA compliance is substantial and in need of reduction. See 64 Fed. Reg. 32859 (June 18, 1999). Given that over 70% of SOCMA's members qualify as "small businesses" that may have limited staff and resources, SOCMA commends the Agency for not creating unnecessary paperwork burdens in conjunction with these exclusions. SOCMA urges EPA to continue to look for additional opportunities to reduce the existing RCRA recordkeeping burden and would be pleased to meet with the Agency on this issue.[6]

6 SOCMA's perspective on the Impact of unnecessary recordkeeping and reporting requirements on its members is addressed at greater length in its comments on the Office of Solid Waste Burden Reduction Project, dated Sept. 17, 1999, Docket No. F-1999-IBRA-FFFFF.

(PMLP 00012. SOCMA, page 8, 9)

SOCMA is pleased that EPA has used a self-implementing approach for both the concentration-based listings and the contingent management exemption from the proposed listings. EPA has appropriately determined that generators should not be required to give any advance notice in order to qualify paint production wastes as exempt based on a waste composition that does not trigger the waste listings. Since the basis for this exemption is a determination that the wastes do not meet the threshold concentration levels for regulation under Subtitle C, it would not be appropriate to impose specific notification or filing requirements on these generators pursuant to Subtitle C.

Similarly, EPA has determined that no advance notice is required to enable paint production facilities to claim and rely on the contingent management exemption for paint production wastes managed in tanks and containers prior to discharge to a POTW or NPDES permitted facility. This exemption is fundamentally similar in its defining elements, i.e., storage in tanks or containers prior to a Clean Water Act permitted discharge, to the wastewater treatment unit exemption. The management practices are well defined, and normal operating records are available to document the basis for the exemption if needed. Thus, SOCMA concurs with EPA's assessment that advance notice or filing requirements should not be imposed on facilities that rely on the contingent management exemption.

(PMLP 00012. SOCMA, page 12, 13)

The Agency is proposing that the concentration-based listing for paint manufacturing wastes be self-implementing. 66 ,FR 10113 (Feb. 13, 2001). That is, no prior overseeing agency notification, review or approval is required before a determination by the generator that its paint manufacturing are nonhazardous becomes effective. Rather, the generator would need to maintain supporting documentation showing that the wastes are nonhazardous based upon process knowledge, testing or both. Maintaining supporting documentation on-site eliminates the need for the overseeing agency to establish special controls regarding the submission, maintenance and public distribution of such information, particularly that which is confidential, and correctly places the burden upon the generator to maintain such information, confidential or otherwise. DuPont strongly supports this approach.

(PMLP 00041. DuPont, page 29, w/attachments)

The record retention, maintenance and access requirements that the EPA has included in the proposal appear to be reasonable and not unduly burdensome, with the exception of the proposed two-tiered approach towards determining whether testing is required to complete a nonhazardous waste demonstration. DuPont supports maintenance of documentation relied for the most recent three years.

(PMLP 00041. DuPont, page 34, w/attachments)

X. LDRs

A. Treatment standards

SUMMARY OF COMMENTS

The Agency received four comments, three from associations and one from industry on land disposal restrictions. SOCMA states that while residues from the treatment of solid K179 wastes are exempt from the mixture and derived-from rules they still are subject to land disposal restrictions leading to over regulation. ACC noted that land disposal restrictions do not apply to paint manufacturing liquid wastes managed in compliance with the proposed contingent management approach. SIRC noted that the proposed treatment standard for styrene is lower than the current maximum contaminant level for styrene. P.D. George Co. stated that wastes that can currently meet land disposal restrictions using POLYM may now be required to meet the treatment standards for K179.

VERBATIM COMMENTS

SOCMA believes that proposed exclusion of residues from the treatment of solid K179 wastes from the so-called "mixture" and "derived-from" rules is another illustration of the potential merits of tailoring waste listings to reflect the specific wastes of concern. 66 Fed. Reg. at 10074. The over inclusive impact of the mixture and derived-from rules has been one of the most unfortunate and most contentious aspects of the RCRA hazardous waste program. However, SOCMA notes that even this relief is still limited by the fact that the residues would still be subject to all of the land disposal restrictions requirements. The interface between these-two elements of the Subtitle C program still needs further review and modification in order to eliminate over-regulation under Subtitle C.

(PMLP 00012. SOCMA, page 7)

RESPONSE

EPA would like to clarify that this rule does not promulgate any changes to the "mixture rule" as provided in 261.3(a)(2)(iii) and (iv). EPA has decided to not promulgate the revised language pertaining to the "derived-from" rule which was proposed as the addition of Section 261.3(c)(2)(ii)(F).

Although not being specifically listed as hazardous wastes by today's rule, paint manufacturing waste liquids that exhibit a hazardous waste characteristic (261.21 - 261.24) or are generated from the use of certain common organic solvents (spent solvent wastes F001-F005) are still subject to the Subtitle C hazardous waste regulations, including the LDR provisions. *"Decharacterized" wastes, that were hazardous only due to a hazardous waste characteristic, must meet LDR treatment requirements before disposal.*

The LDR requirements apply to the treatment residues to ensure that wastes have been properly treated prior to land disposal. The LDR requirements apply to characteristic wastes at the point of generation, therefore, decharacterized wastes must meet LDR treatment standards prior to disposal in a non-hazardous land-based unit. EPA requires that decharacterized waste be subject to LDR requirements to ensure that the characteristic was not removed due to mixing or dilution of the waste and to assure that the waste is safe for disposal (June 1, 1990 Federal Register (55 FR 22651)).

Under the Safe Drinking Water Act (SDWA), the current Maximum Contaminant Level (MCL) for styrene is 0.1 mg/l, which is significantly higher than the 0.028 mg/l proposed treatment standard for wastewaters.[10] EPA determined that the 0.1 mg/l MCL is the lifetime exposure level that protects against potential adverse effects of styrene.[11]

10 40 C.F.R. § 141.61, and 66 Fed. Reg. at 10137.

11 U.S. EPA, Office of Drinking Water. Occurrence of Synthetic Organic Chemicals in Drinking Water, Food and Air: Revised Draft Report (July 1987) (EPA SDWA docket)(hereinafter "EPA 1987").

(PMLP 00029. SIRC, page 3)

RESPONSE

Upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing wastes proposed as K179 and K180. In addition, styrene will not be added to the F039 list or the UTS list of chemicals as an underlying hazardous constituent.

The Council concurs with the Agency's determination that land disposal restriction (LDR) prohibitions do not apply to paint manufacturing liquid wastes managed in compliance with the proposed contingent management approach. First, the EPA's authority for imposing compliance with the LDRs is limited to hazardous wastes. Under the proposed conditional listing, paint manufacturing liquid wastes managed solely in tanks or containers prior to discharge to a POTW or under a NPDES permit would be considered *non-hazardous from the point of generation*, provided they are not otherwise listed and do not exhibit a hazardous waste characteristic. Thus, LDR prohibitions would never attach to the wastes.

Second, the proposed conditional exemption from hazardous waste requires that paint manufacturing waste liquids be managed exclusively in tanks or containers prior to discharge to a POTW or under a NPDES permit. The Agency has previously expressed that where wastes are managed in NPDES or POTW discharge systems that are entirely tank-based, the wastes are not destined for land disposal and, therefore, neither the LDR disposal prohibitions nor the treatment standards (or attendant dilution prohibition) apply. 62 Fed. Reg. 26006-7 (May 12, 1997). Accordingly, management of paint manufacturing liquids in compliance with the proposed contingent management approach would trigger no LDR prohibitions or requirements.

Finally, it should also be noted that we further believe that the notion of LDRs not applying to wastes managed in compliance with a conditional exemption should also extend to include the other contingent management alternatives discussed above.

(PMLP 00030. ACC, page 10)

RESPONSE

Upon evaluation of comments and additional data received pursuant to the proposed rule, EPA has decided not to list paint manufacturing waste solids (proposed K179) or liquids (proposed K180). However, paint manufacturing wastes that exhibit a hazardous waste characteristic (261.21 - 261.24) or are generated from the use of certain common organic solvents (spent solvent wastes F001-F005) are still subject to the Subtitle C hazardous waste regulations, including the LDR provisions.

EPA notes that the commenter is correct that wastes managed in a wastewater treatment system that is entirely tank-based are not subject to LDR treatment standards because land disposal will not occur. If hazardous waste is generated and subsequently exempted, the LDR regulations do require a one-time notice be generated and placed in the facility's files (see 40 CFR 268.7(a)(7)).

On May 12, 1997, EPA added POLYM as a method of treatment for high-TOC ignitable D001 wastes (62 FR 25998). This amendment allows material that is liquid and has been deemed a D001 waste only to be treated using POLYM to meet the LDR requirements. These same materials could fall under 28512. Once solid material (i.e. polymerized), they could be affected by the Proposed

Rule, however, and fall under K179 and need to meet those LDR requirements. This seems contradictory and overly burdensome. Completely polymerized off-specification material should not be included in the scope of the Proposed Rule.

(PMLP 00040. P.D. George Co., page 2)

RESPONSE

The commenter is correct that hazardous wastes that meet multiple waste codes are subject to each waste code's LDRs. Upon evaluation of comments and additional data received pursuant to the proposed rule, we decided not to list paint manufacturing wastes proposed as K179 and K180.

B. Impact on F039 and characteristic wastes (UTS)

SUMMARY OF COMMENTS

The Agency received two comments. Both recommended that EPA implement an exception for styrene so that it is not an underlying hazardous constituent. Doing so would make styrene a constituent subject to treatment in F039 and under the alternative LDR standards for contaminated soil. API further stated that adding styrene to these lists will have potential impacts on waste generation, management and remediation activities which have not been assessed by EPA and should be considered in EPA's economic impact analysis.

VERBATIM COMMENTS

Presently, generators of characteristic hazardous waste or contaminated soil subject to the alternative land disposal restriction standards do not have to treat their wastes for styrene. If styrene is added as an underlying hazardous constituent (UHC) or a constituent subject to treatment in F039, many generators might have the additional burden of evaluating their waste for styrene if unable to use process knowledge. Not only could waste generators be impacted, but facilities which treat or dispose of wastes containing styrene, would also have to analyze for styrene. This change would have to be included in a facility's waste analysis plan and could result in an obligation to submit a permit modification. These potential impacts on waste generation, management and remediation activities have not been assessed by EPA and should be considered in EPA's economic impact analysis. Based on the potential burden of adding styrene as an UHC and to F039, API strongly suggests that EPA reconsider its addition and instead, implement an exception for styrene as it has for several constituents under the RCRA program.

(PMLP 00015. API, page 3)

RESPONSE

Upon evaluation of comments and additional data received pursuant to the proposed rule, we decided not to list paint manufacturing wastes proposed as K179 and K180. In addition, styrene will not be added to the F039 list or the UTS list of chemicals as an underlying hazardous constituent.

Including styrene as one of the constituents for which paint manufacturing waste liquids are listed, as proposed, results in styrene being included in other aspects of the RCRA program that would affect many of our members. Our concerns primarily center on the collateral effects of including styrene in the Universal Treatment Standards (UTS) table without an associated exception in § 268.2(i) and § 268.49(d). The addition of styrene to the UTS table has the direct effect of designating styrene as:

- An Underlying Hazardous Constituent (UHC) within the Land Disposal Restrictions (LDR) requirements for certain characteristic hazardous wastes, and
- A Constituent Subject to Treatment (CST) under the alternative LDR standards for contaminated soil.

At a minimum, generators of characteristic hazardous wastes for which §268.9(a), §268.40, or §268.49 require determination of UHCs or CSTs would have to determine whether styrene was present in the waste, if unable to use process knowledge. If present above the corresponding UTS levels, they would have to ensure treatment to below those levels (or 10 times the UTS level in the case of contaminated soils) prior to land disposal.

Since generators are not currently required to evaluate their waste streams for styrene, we can only speculate on the potential effect of its inclusion in the UTS table on current waste management and remediation activities. However, these impacts and associated burdens will be real, and they have not been included in EPA's economic impact analyses nor do such far-reaching effects appear to be justified on the basis on this specific listing proposal.

EPA should avoid these collateral effects by providing an exception for styrene under §268.2(i) and §268.49(d), as it has for fluoride, sulfides, vanadium and zinc. These constituents are not regulated as UHCs because they are not listed in 40 CFR Part 261 Appendix VIII. Styrene is not on 40 CFR Part 261 Appendix VIII, and, therefore, should be not be regulated as a UHC in the same manner.

(PMLP 00030. ACC, page 18 [from11A])

RESPONSE

Upon evaluation of comments and additional data received pursuant to the proposed rule, we decided not to list paint manufacturing wastes proposed as K179 and K180. In addition, styrene will not be added to the F039 list or the UTS list of chemicals as an underlying hazardous constituent.

See also response to PMLP 00015; API, page 3.

C. Capacity analysis determination

SUMMARY OF COMMENT

The Agency received one comment from NPCA stating that EPA did not appropriately determine treatment capacity. In addition, they stated any waste listing determination should be deferred until the capacity requirements for previously disposed wastes and residues thereof can be adequately studied.

VERBATIM COMMENT

EPA requests data on soil or debris contaminated with these wastes.[90] Particularly for previously disposed wastes the information to determine whether these wastes were disposed of in the past may or may not be available. Significant study and research is required to make this determination and then to calculate its impact on volume and treatment capacity. It may also be the case that for previously disposed wastes, that available capacity is not available near the current disposal location, thus may result in the transportation of such wastes significant distances with the corresponding risks of such additional transport. Any waste listing determination should be deferred until such time as the capacity requirements for previously disposed wastes and residues thereof can be adequately studied.

90 66 Fed. Reg. 10120 (Feb. 13, 2001)

(PMLP 00033. NPCA, page 53, w/attachments)

RESPONSE

For previously disposed soils and debris to be regulated under RCRA: 1) the soil and/debris must be actively managed to trigger the standards (see the August 18, 1992 Federal Register for more details about active management (57 FR 37298).

We evaluated of the management of soil and debris contaminated with paint production wastes, and presented this analysis in the docket for the proposed rule. As detailed in the Background Document for Capacity Analysis for Land Disposal Restrictions: Paint Production Wastes, we believe that the majority of contaminated soil and debris could of been managed on-site and therefore would not have required substantial off-site commercial treatment capacity.

Upon evaluation of comments and additional data received pursuant to the proposed rule, we have decided not to list paint manufacturing wastes proposed as K179 and K180. Therefore, there are no additional capacity requirements as a result of this rulemaking.

XI. ANALYTICAL AND REGULATORY REQUIREMENTS

Public comments on the analytical and regulatory requirements (economic and befenits analyses, SBREFA, impacts from the proposed listing rulemaking, etc.) as well as the Agency's responses are included in a separate docket document entitled "*Public Comment Summary and Response Document addressing Economic Issues Associated With the Proposed Listing for Paint Production Wastes, in support of the Paint Production Wastes Final Determination, November 30, 2001*."

XII. MISCELLANEOUS

In Section XII.A we address a request for an extension of the comment period by several commenters, followed by our response to this request. In the following subsections, we first provide a summary of comments, followed by our response to comments and then the verbatim comments received.

A. Extension of the comment period

SUMMARY OF COMMENT

EPA received a request for an extension of the comment period for at least 30 days from the National Paint & Coatings Association (NPCA), the American Chemistry Council (ACC), Emulsion Polymers Council (EPC), and Acrylamide Monomer Producers Association (AMPA). These associations argued that they did not have adequate time to review and prepare comments on, in particular, the industry database and the risk assessment model used by the Agency for the proposed rulemaking. (See the public docket for a copy of the request letter to Elizabeth Cotsworth, Director of Solid Waste, dated March 16, 2002.)

RESPONSE

Due to the tight schedule under a consent decree (ED vs. Whitman, D.D.C. Civ. No. 89-0598) to complete the proposed rulemaking, the Agency denied the commenters' extension request in a letter dated March 22, 2001. The letter states, however, that we would make an effort to review as many late comments as we can, within the constraints of our schedule.

B. Administrative record

SUMMARY OF COMMENTS

The Agency received several comments stating that EPA had not released the corrected risk assessment model and all of its files for review and comment, and that they did not receive adequate time to review and prepare comments on the risk assessment model used to support the proposed rule. They added that review of the analytical model and files is critical because the proposed concentration limits are based solely on modeling calculations and not on actual field data.

RESPONSE

During the comment period we provided a copy of the risk assessment model used to assess risks associated with the paint production wastes, and detailed instructions on how to run the model, to the interested parties. However, as addressed above in Section XII.A, we denied a request for an extension of the comment period from NPCA, ACC, EPC, and AMPA. Nevertheless, after the comment period ended, NPCA submitted supplemental comments; and we have reviewed and considered NPCA's supplemental comments along with all the other public comments received for the final determination.

VERBATIM COMMENTS

Third, MPA notes that EPA's own peer reviewers identified a number of other potentially serious numerical errors in the model, and cautions EPA against relying on a model that has not been validated and is potentially in error. One peer reviewer stated that the errors "call into question the assessment as a whole and put its conclusions in doubt" (Revievw by S. Ferson, p.1, Appendix C, Peer Review Document for the EPA's Risk Assessment. Docket No. PMLP-50389). EPA's response in the record states only that the errors were mere "typos" and not errors in the model itself. Even if true, the corrected model has not been properly released for public review and comment as required by the Administrative Procedure Act. MPA therefore reserves the right to submit additional comments at such time as the revised model is released.

(PMLP 00016. MPA, page 11, 12, w/attachments)

Fifth. EPA failed to release the risk assessment model in a timely manner, thus denying MPA and other interested parties the opportunity for meaningful review and comment. EPA's own peer reviewers expressed similar concerns; one reviewer stated that "it seems inappropriate to perpetuate the frustration of readers' inability to check the calculations in a thorough way," and strongly urged EPA to make the input files available for review. (Review by S. Ferson, p.4, Appendix C, Peer Review Document for the EPA's Risk Assessment, docket no. PMLP-50389). EPA has yet to release the full model and all of the files used in performing the assessment calculations and has refused to grant a petition for an extension of the comment period, thus denying interested parties a full 60 days to review the newly released information.

By delaying the release of the model and failing to make the full computer model files available. EPA has denied itself the benefit of a thorough and complete peer review and validation of the model, and denied MPA and other interested parties their right to comment on the Proposed Rule as provided under the Administrative Procedures Act (APA). Review of the analytical model and input files is critical because the concentration limits being proposed by EPA are based solely on the modeling calculations, and not on actual field data. MPA therefore reserves the right to challenge the fundamental validity of the rulemaking process under the APA, and also to submit additional comments at a later date after having had the opportunity to fully review the model.

(PMLP 00016. MPA, page 13, 14, w/attachments)

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Sherwin-Williams further notes that the record was not complete at the time of the public comment period (for example, the model on which EPA used to evaluate its assumptions was not available), and that additional time should have been provided once the record was complete and correct, in order to provide responsive comments. EPA's refusal to provide additional time was arbitrary, and Sherwin-Williams reserves the right to supplement its comments.

(PMLP 00019. Sherwin Williams Co., page 2 [from15])

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The EPA has documented the paint production waste listing risk assessment modeling effort in a "Risk Assessment Technical Background Document."[12] This document provides the results of the of EPA's human health and ecological risk assessments for wastes that are subject to the listing determination. Stakeholders should be able to look over this document and understand how the EPA assessed the risk posed by paint production wastes. Unfortunately, upon review of the document, one finds errors so substantive and numerous at to make this task impossible during the 60-day time frame of the public comment period. In fact, the errors are so numerous and associated with such critical aspects of the risk assessment, it destroys the risk assessment's value and reliability. Furthermore, EPA's failure to accurately account for the errors is arbitrary and substantially hinders stakeholders' ability to appropriately respond to the proposed rulemaking.

Stakeholders are not alone in this concern. Scott Ferson, one of the EPA risk assessment peer reviewers stated that he checked one half of the formulas used in the risk assessment and found errors in close to all.[13] Mr. Ferson stated that it was hard to discern whether these mistakes represent simple typos, numerical errors or profound confusion about the appropriate model that should be used in the assessment. Mr. Ferson concluded that while typos may not be serious, other types of errors could potentially call into question the assessment as a whole and put its conclusions in doubt.[14] In a step to reassure stakeholders, EPA placed a short memorandum in the Docket stating that the errors found by the Peer Review were only typos and not errors in the modeling.[15] The EPA also stated that it had corrected the typos. If the errors were indeed merely typos, the Proposed Rule should have been reproposed with all the necessary corrections.

However, upon further review the NPCA and other interested parties found other critical errors in the Risk Assessment Technical Background Document. For example, EPA has used years rather than days for the input parameters for their model (Table D-1).[16] Specifically, the degradation rates in surface water, soils and sediments are identified on EPA's table as (1/yr.). The surface water value in the table for acrylamide is reported as 1.73 E-01 (1/yr.).[17] According to the text, the value is supposed to be reported in units of(1/day). EPA references Howard, 1989, as reporting a half-life of 40 days; however, the input parameter table states that EPA used 40 years![18]

Another important parameter that appears to be in error is the fraction of paint waste in management units (f_wmu) which dictates the amount of paint production waste modeled in a waste management unit. This factor is critical to the modeling effort. EPA states that the f_wmu was adjusted based on the volume of waste and the capacity of the waste management unit.[19] However, in Appendix L, EPA states that the model was run assuming all waste in the waste management unit was from paint manufacturing (f_wmu of 1).[20] Again, this is an error that could have a great impact on the risk assessment results, and without knowledge of the correct information, stakeholders are left to guess at EPA's analysis under the proposed rule. Any correction of these and other substantive errors will necessitate re-running the entire risk assessment and providing stakeholders the opportunity to submit comments on the revised model and new results.

On March 14, 2001, NPCA and other interested parties met with the EPA and asked them to clarify whether these mistakes were merely typos or actual errors in the risk assessment. EPA arbitrarily declined our request stating that this was an appropriate topic to submit during the comment period. NPCA strongly disagreed with this judgment and again asked for clarification in a letter dated March 16, 2001. EPA responded verbally in a conference call on March 19, 2001 stating that the errors in the Acrylonitrile and Acrylamide degradation rates cited in the Risk Assessment Background Document were only typos and the rates in the risk assessment model were correct. In addition, EPA stated that the f_wmu rates were set at 1 for the initial risk model screening but were later adjusted based on the specific landfilll surface impoundment source data and waste volumes. The EPA, however, declined to officially clarify the issues in an amended *Federal Register* notice or verify the corrected information. Furthermore, EPA declined our request for an extension of the comment period in order that we might verify the risk assessment results ourselves.[21] NPCA is diligently trying to confirm if the errors were actually just typos before the comment period expires, however, NPCA just received the modeling information from EPA on March 28, 2001, less than three weeks before the comments are due. The modeling information, which is needed to prepare appropriate comments to the Proposed Rule, was not part of the Administrative Record. For this reason, alone, EPA should have extended the public comment period, and by not doing so EPA has unlawfully deprived the paint industry of a reasonable opportunity to comment on the rulemaking.

NPCA believes that the risk assessment errors undermine the validity of EPA's assessment and consequently the entire rule on which it is predicated. In addition, EPA's refusal to provide industry with the appropriate information, tools and time with which to review the rule improperly and arbitrarily impairs our ability to respond to the Proposed Rule and effectively participate in this rulemaking. NPCA hereby reserves the right, absent a formal extension of the comment period, to submit comments based on our continuing work reviewing and validating EPA's risk assessment.

12 "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination," Jan. 17, 2001.

13 "Peer Review Document for the Environmental Protection Agency's of Risk Assessment for the Paint and Coatings Hazardous Waste Listing Determination (Summary Document)," Jan. 17, 2001.

14 Id at page 1.

15 "EPA Memo to Docket," Jan. 19, 2001.

16 "Risk Assessment Technical Background Document for the Paint and Coatings Hazardous Waste Listing Determination," Jan. 17, 2001, page D-11.

17 Id at Appendix D, page D-6.

18 Id.

19 Id at page 4-6.

20 at Appendix L, pages L-6, L-9.

21 See Letter to EPA from NPCA, EPC and ACC, Mar. 16, 2001 (attached herewith and incorporated by reference).

(PMLP 00033. NPCA, page 12, 13, 14, w/attachments)

NPCA has also been adversely affected in our ability to appropriately respond to the Proposed Rule hereby reserves the right, absent a formal extension of the comment period, to submit comments based on our continuing work reviewing and validating the Proposed Rule. Nonetheless, the Proposed Rule is not legally supportable and the Consent Decree can not mandate a listing regulation. EPA has failed to support a listing determination under the standards of RCRA and EPA can not hide this fact behind flawed statistics and theoretical hypothesis offered in support of the Proposed Rule. Therefore, NPCA strongly urges EPA to review the comments received herein and make a no-list determination for paint production wastes.

(PMLP 00033. NPCA, page 58, w/attachments)

C. Concur with NPCA comments

SUMMARY OF COMMENTS

The Agency received 21 comments, three from associations and eighteen from industry, stating that they concurred, supported, or incorporated by reference the comments submitted by NPCA.

RESPONSE

We address NPCA's comments in the sections above.

VERBATIM COMMENTS

PPG is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00003. PPG Industries, page 1)

We are a member of the National Paint and Coatings Association (NPCA) and concur with NPCA's comments.

(PMLP 00009. Kelley Technical Coatings, page 1)

Star Bronze Company is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00014. Star Bronze Company, page 1)

Seventh, MPA endorses the comments of the National Paint & Coatings Association (NPCA) with regard to the Proposed Rule.

(PMLP 00016. MPA, page 4, w/attachments)

Duron, Inc. is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00018. Duron Paints & Wall Coverings, page 1)

As a member of the National Paint and Coatings Association (NPCA), Sherwin-Williams concurs with NPCA' s comments and incorporates these comments by reference.

(PMLP 00019. Sherwin Williams Co., page 1)

Cintech is a member of the National Paint and Coatings Association and we agree with NPCA's comments.

(PMLP 00022. Cintech Industrial Coatings, page 1)

Delta Laboratories is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00023. Delta Laboratories Inc., page 1)

Akzo Nobel Coatings is a member of the National Paint and Coatings Association (NPCA) and concurs with all of NPCA's comments.

(PMLP 00024. Akzo Nobel, page 1)

Davis Paint Company, as a member of the National Paint and Coatings Association (NPCA) is interested in the outcome of the above-referenced rule, and we support their position on this issue.

(PMLP 00025. Davis Paint Company, page 1)

Jamestown Paint Company is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00026. Jamestown Paint Company, page 1)

Aexcel Corporation, as a member of the National PaiNt and Coatings Association (NPCA) is interested in the outcome of the above-referenced rule, and we support their position on this issue.

(PMLP 00027. Aexcel Corp., page 1)

Kelley Technical Coatings has been monitoring the development of the above referenced rule for some time now. We are particularly interested in the outcome of the proposed rule, as it will directly affect our business operations. We are a member of the National Paint and Coatings Association (NPCA) and concur with NPCA's comments.

(PMLP 00028. Kelley Technical Coatings, page 1)

The Council also supports comments separately submitted by the National Paints and Coatings Association (NPCA), the Styrene Information and Research Center, Inc. (SIRC), and the following American Chemistry Council CHEMSTAR® Panels: Ketones Panel, Oxo Process Panel, and Phthalate Esters Panel.

(PMLP 00030. ACC, page 1)

NAPPA has coordinated its response to this rulemaking with the Emulsion Polymers Council (EPC), whose members manufacture the polymers used in paint formulation and with the National Paint & Coatings Association (NPCA), which represents the producers of consumer and industrial paint products in the US. NAPPA fully subscribes to the concerns expressed by these organizations, most notably that EPA must take great care in designating chemical constituents as potentially hazardous for purposes of hazardous waste regulation under the Resource Conservation and Recovery Act (RCRA).

(PMLP 00034. NAPPA, page 2, 3, w/attachments)

RPM, Inc. is pleased to provide the Environmental Protection Agency (EPA) with comments on the above referenced rulemaking. RPM is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00035. RPM, Inc., page 1)

Valspar is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00036. Valspar Corp., page 1)

ICI Paints is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00039. ICI Paints North America, page 1)

The P. D. George Co. is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00040. P.D. George Co., page 1)

DuPont has also participated significantly in the development of comments being submitted by the National Paint & Coatings Association, Inc. (NPCA). We support and thus, incorporate herein by reference, NPCA's comments.

(PMLP 00041. DuPont, page 6, w/attachments)

Adheron Coatings Corporation is a member of the National Paint and Coatings Association (NPCA) and concurs with NPCA's comments.

(PMLP 00042. Adheron Coatings Corp., page 1)

D. Concur with ACC general comments

SUMMARY OF COMMENTS

The Agency received comments from the American Chemistry Ketones Panel and Oxo Process Panel and from DuPont stating that they concur with American Chemistry Council's general comments.

RESPONSE

We address American Chemistry Council's comments in the sections above and below.

VERBATIM COMMENTS

The Panel also joins in the separate comments being submitted by the American Chemistry Council on general issues concerning the proposal.

(PMLP 00002. ACC Ketones Panel, cover letter, w/attachments**)**

The Panel also joins in the separate comments being submitted by the American Chemistry Council on general issues concerning the proposal.

(PMLP 00011. ACC Oxo Process Panel, cover letter, w/attachments)

DuPont also supports, and incorporates herein by reference, comments also being submitted by the American Council of Industrial Laboratories, the Emulsion Polymers Council, Inc., the Styrene Information and Research Center, Inc., the Methacrylate Producers Association, Inc., the Color Pigments Manufacturing Association and the American Chemistry Council's CHEMSTAR® Ketones and Oxo Process Panels.

(PMLP 00041. DuPont, page 6, w/attachments)

E. Concur with Emulsion Polymers Council

SUMMARY OF COMMENTS

The Agency received four comments, two from associations and two from industry, stating that they concur with the comments submitted by the Emulsion Polymers Council.

RESPONSE

We addressed the Emulsion Polymers Council's comments in the sections above.

VERBATIM COMMENTS

Rohm and Haas agrees with the comments filed by the MPA and Council that the listing of paint wastes as RCRA hazardous wastes is not warranted by statute or rule.

(PMLP 00031. Rohm and Haas, page 3)

NPCA concurs with the Emulsion Polymers Council, Inc. (EPC) comments (hereby incorporated by reference) which indicate that EPA substantially overestimated the concentration of Acrylonitrile and acrylamide in paint manufacturing wastes and therefore Acrylonitrile and Acrylamide should be removed from the listing.

(PMLP 00033. NPCA, page 27, w/attachments)

NAPPA has coordinated its response to this rulemaking with the Emulsion Polymers Council (EPC), whose members manufacture the polymers used in paint formulation and with the National Paint & Coatings Association (NPCA), which represents the producers of consumer and industrial paint products in the US. NAPPA fully subscribes to the concerns expressed by these organizations, most notably that EPA must take great care in designating chemical constituents as potentially hazardous for purposes of hazardous waste regulation under the Resource Conservation and Recovery Act (RCRA).

(PMLP 00034. NAPPA, page 2, 3, w/attachments)

DuPont also supports, and incorporates herein by reference, comments also being submitted by the American Council of Industrial Laboratories, the Emulsion Polymers Council, Inc., the Styrene Information and Research Center, Inc., the Methacrylate Producers Association, Inc., the Color Pigments Manufacturing Association and the American Chemistry Council's CHEMSTAR® Ketones and Oxo Process Panels.

(PMLP 00041. DuPont, page 6, w/attachments)

F. Concur with CPMA comments

SUMMARY OF COMMENTS

The Agency received comments from NPCA and DuPont stating that they concur with the comments submitted by the Color Pigments Manufacturing Association (CPMA). Specifically, they concur that the toxicity and environmental risk are over-estimated for antimony in paint pigments.

RESPONSE

We address CPMA's comments in the sections above.

VERBATIM COMMENTS

The source of Antimony in paint formulations is in pigments. NPCA fully concurs with the Color Pigments Manufacturing Association's (CPMA) comments (hereby incorporated by reference) in which CPMA states that EPA has both over-estimated the toxicity and environmental risk posed by pigments containing antimony and the use of such pigments in paint formulation.

(PMLP 00033. NPCA, page 29, w/attachments)

DuPont also supports, and incorporates herein by reference, comments also being submitted by the American Council of Industrial Laboratories, the Emulsion Polymers Council, Inc., the Styrene Information and Research Center, Inc., the Methacrylate Producers Association, Inc., the Color Pigments Manufacturing Association and the American Chemistry Council's CHEMSTAR® Ketones and Oxo Process Panels.

(PMLP 00041. DuPont, page 6, w/attachments)

DuPont fully concurs with the Color Pigments Manufacturing Association's (CPMA) comments in which CPMA states that EPA has both over-estimated the toxicity and environmental risk posed by pigments containing antimony and the use of such pigments in paint formulation.

(PMLP 00041. DuPont, page 16, w/attachments)

G. Concur with Methacrylate Producers Association

SUMMARY OF COMMENTS

The Agency received three comments, one from an association and two from industry, stating that they concur with the comments submitted by the Methacrylate Producers Association. Specifically they concur with MPA that no paints or paint manufacturing wastes contain Methyl Methacrylate at the proposed risk-based levels.

RESPONSE

We address Methacrylate Producers Association's comments in the sections above and below.

VERBATIM COMMENTS

Rohm and Haas agrees with the comments filed by the MPA and Council that the listing of paint wastes as RCRA hazardous wastes is not warranted by statute or rule.

(PMLP 00031. Rohm and Haas, page 3)

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It does appear, however, that with this proposed rule, EPA is taking a more realistic approach to exposure pathways, contingent management, and available toxicity data, though all is still not complete at this time. Rohm and Haas supports the comments of the MPA on this issue.

(PMLP 00031. Rohm and Haas, page 3, 4 [from 9L])

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NPCA fully concurs with the Methacrylate Producers Association, Inc. (MPA) comments (hereby incorporated by reference) in which MPA states that no paints or paint manufacturing wastes contain Methyl Methacrylate at the proposed risk-based levels.

(PMLP 00033. NPCA, page 30, w/attachments)

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DuPont also supports, and incorporates herein by reference, comments also being submitted by the American Council of Industrial Laboratories, the Emulsion Polymers Council, Inc., the Styrene Information and Research Center, Inc., the Methacrylate Producers Association, Inc., the Color Pigments Manufacturing Association and the American Chemistry Council's CHEMSTAR® Ketones and Oxo Process Panels.

(PMLP 00041. DuPont, page 6, w/attachments)

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H. Concur with Styrene information and Research Center

SUMMARY OF COMMENTS

The Agency received three comments, two from associations and one from industry, stating that they concur with the comments submitted by the Styrene Information and Research Center. NPCA stated they fully agree with SIRC that styrene is not expected be present in paint production wastes at the Proposed Rule's level of concern.

RESPONSE

We address Styrene information and Research Center's comments in the sections above.

VERBATIM COMMENTS

The Council also supports comments separately submitted by the National Paints and Coatings Association (NPCA), the Styrene Information and Research Center, Inc. (SIRC), and the following American Chemistry Council CHEMSTAR® Panels: Ketones Panel, Oxo Process Panel, and Phthalate Esters Panel.

(PMLP 00030. ACC,, page 1)

NPCA fully concurs with the Styrene Information and Research Center, Inc. (S1RC) comments (hereby incorporated by reference) in which SIRC states that because of Styrene's physicochemical and biodegradation properties, coupled with extensive groundwater monitoring, that Styrene is not expected to be present in paint production wastes, or expected to be present at or near the Proposed Rule's level of concern. Therefore, EPA should not list styrene as a hazardous COC in any final hazardous waste listing determination, should any hazardous waste listing determination be made over NPCA objections.

(PMLP 00033. NPCA, page 30, w/attachments)

DuPont also supports, and incorporates herein by reference, comments also being submitted by the American Council of Industrial Laboratories, the Emulsion Polymers Council, Inc., the Styrene Information and Research Center, Inc., the Methacrylate Producers Association, Inc., the Color Pigments Manufacturing Association and the American Chemistry Council's CHEMSTAR® Ketones and Oxo Process Panels.

(PMLP 00041. DuPont, page 6, w/attachments)

I. Concur with American Council of Independent Laboratories

SUMMARY OF COMMENT

The Agency received one comment from NPCA stating that they concur with the comments by the American Council of Independent Laboratories on waste testing at the proposed listing levels.

RESPONSE

Since we have determined not to list waste liquids or solids from paint production as proposed, we are not addressing comments specific to waste testing and related implementation issues.

VERBATIM COMMENT

NPCA supports the American Council of Independent Laboratories (ACIL) comments (hereby incorporated by reference) on the Proposed Rule. As stated, EPA can only regulate chemicals that can be measured in the matrix of concern and to establish regulatory levels at or above the levels of analytical capability. EPA has provided no information in the administrative record to demonstrate that the COCs in the Proposed Rule can be measured at the concentrations of concern in paint wastes. As ACIL correctly points out, EPA must provide supporting information to demonstrate that such measurement is possible. As stated in a report by the Environmental Laboratory Advisory Board, a Federal Advisory Committee:

> *In support of new regulations, USEPA should employ or develop laboratory methods that have been demonstrated to be capable of achieving the regulatory compliance monitoring requirements. In order to assure the quality of the science used in the development of regulations, USEPA should submit all the technical studies used to develop a regulation to peer review as part of the regulatory process, prior to finalizing any such regulation.*

(PMLP 00033. NPCA, page 39, w/attachments)

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J. Concur with ACC Ketones Panel

SUMMARY OF COMMENTS

The Agency received comments from the American Chemistry Council and DuPont stating that they concur with the comments submitted by the American Chemistry Council Ketones Panel.

RESPONSE

We address the American Chemistry Council Ketones Panel's comments in the sections above and below.

VERBATIM COMMENTS

The Council also supports comments separately submitted by the National Paints and Coatings Association (NPCA), the Styrene Information and Research Center, Inc. (SIRC), and the following American Chemistry Council CHEMSTAR® Panels: Ketones Panel, Oxo Process Panel, and Phthalate Esters Panel.

(PMLP 00030. ACC, page 1)

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DuPont also supports, and incorporates herein by reference, comments also being submitted by the American Council of Industrial Laboratories, the Emulsion Polymers Council, Inc., the Styrene Information and Research Center, Inc., the Methacrylate Producers Association, Inc., the Color Pigments Manufacturing Association and the American Chemistry Council's CHEMSTAR® Ketones and Oxo Process Panels.

(PMLP 00041. DuPont, page 6, w/attachments)

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K. Concur with ACC OXO Process Panel

SUMMARY OF COMMENTS

The Agency received comments from the American Chemistry Council and DuPont stating that they concur with the comments submitted by the American Chemistry Council Oxo Process Panel.

RESPONSE

We address the American Chemistry Council Oxo Process Panel's comments in the sections above and below.

VERBATIM COMMENTS

The Council also supports comments separately submitted by the National Paints and Coatings Association (NPCA), the Styrene Information and Research Center, Inc. (SIRC), and the following American Chemistry Council CHEMSTAR® Panels: Ketones Panel, Oxo Process Panel, and Phthalate Esters Panel.

(PMLP 00030. ACC, page 1)

DuPont also supports, and incorporates herein by reference, comments also being submitted by the American Council of Industrial Laboratories, the Emulsion Polymers Council, Inc., the Styrene Information and Research Center, Inc., the Methacrylate Producers Association, Inc., the Color Pigments Manufacturing Association and the American Chemistry Council's CHEMSTAR® Ketones and Oxo Process Panels.

(PMLP 00041. DuPont, page 6, w/attachments)

L. Concur with ACC Phthalate Esters Panel

SUMMARY OF COMMENT

The Agency received one comment from the American Chemistry Council stating that they support the comments submitted by NPCA, the Styrene Information and Research Center, Inc. (SIRC), and the following American Chemistry Council CHEMSTAR® Panels: Ketones Panel, Oxo Process Panel, and Phthalate Esters Panel.

RESPONSE

We address these comments in the sections above and below.

VERBATIM COMMENT

The Council also supports comments separately submitted by the National Paints and Coatings Association (NPCA), the Styrene Information and Research Center, Inc. (SIRC), and the following American Chemistry Council CHEMSTAR® Panels: Ketones Panel, Oxo Process Panel, and Phthalate Esters Panel.

(PMLP 00030. ACC, page 1)

XIII. APPENDIX VIII

EPA received a number of comments on the proposed addition of chemicals to 40 CFR Part 261, Appendix VIII. Below we provide a summary of comments followed by the verbatim comments received. We have determined not to list liquid or solid wastes from paint production as proposed, therefore, we are not adding any chemicals to Appendix VIII. Thus, we are not addressing comments related to this issue.

SUMMARY OF COMMENTS

The Agency received eight comments, five from associations and three from industry, on the proposal to add chemicals to Appendix VIII. The commenters requested that the following proposed constituents not being added to Appendix VIII: ethyl benzene, methanol, methyl isobutyl ketone (MIBK), methyl methacrylate, n-butyl alcohol, xylene and styrene. The overriding rationale that was stated for not listing the chemicals in Appendix VIII was due to their low toxicity. Many of the comments also indicated that more up-to-date data was available than was used in the risk assessments and that the Agency should use this latest information in evaluating these constituents. Many commenters were concerned that listing these chemicals in Appendix VIII may create confusion over the F003 waste code. Several commenters requested that the Agency clearly state that the status of F003 would not change under this proposed rule.

VERBATIM COMMENTS

According to EPA's regulations, chemicals will be added to Appendix VIII where they have been shown in scientific studies to have toxic, carcinogenic, mutagenic, of teratogenic effects on humans or other life forms.[14] There is a substantial body of toxicological literature on MIBK which is summarized in Appendix A to these comments. These data demonstrate that MIBK has low toxicity, a conclusion that is supported by numerous previous determinations of EPA.

The extensive database for MIBK was recently reviewed by the EPA as part of the Screening Information Data Set (SIDS) process. EPA, as the representative of the United States, has approved a recommendation to the United Nations Organization for Economic Cooperation and Development (OECD) that MIBK be considered a "low priority for further work" because it has been extensively studied and does not present significant toxicity concerns, and because general population exposure potential is low.[15]

As part of the SIDS process, the Panel prepared a SIDS Dossier summarizing the available human health and environmental toxicity data on MIBK, as well as information on manufacturing, production and use, exposure, metabolism, and environmental fate and degradation. EPA reviewed and commented on this document, which then formed the basis for the SIDS Initial Assessment Report (SIAR) for MIBK. The SIAR summarizes all available hazard and exposure information for MIBK.

The SIAR specifically reports that:

> MIBK has "a low degree of toxicity when administered by the oral, dermal or inhalation routes." MIBK is a "slight" dermal irritant and is "no more than moderately irritating to eyes."[16]

> "Adverse effects in a developmental toxicity study were seen only at high, maternally toxic levels and there is no indication from existing data that MIBK is a reproductive toxicant."[17]

> MIBK was shown to have "a low degree of toxicity" in oral and inhalation subchronic studies.[18]

> MIBK is not neurotoxic.[19]

> MIBK is not genotoxic.[20]

> "The most sensitive effects of MIBK exposure are slight eye irritation and CNS symptoms which are readily reversible."[21]

EPA also recently acted on a petition to remove MIBK from Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (the Toxics Release Inventory or TRI list).[22] EPA denied the petition based solely on MIBK's status as a VOC. However, in the process, EPA undertook a detailed review of the abundant toxicological data for MIBK and expressly determined that environmental releases of MIBK did not present significant toxicity concerns. Specifically, EPA stated:

> "MIBK has low acute and chronic (systemic) toxicity in that effects occur only at high doses."[23]

> "MIBK exposure does not appear to be associated with genotoxicity *in vitro* or *in vivo*."[24]

> "MIBK has low direct environmental toxicity."[25]

> "MIBK is of low concern with respect to aquatic toxicity based on measured toxicity data and quantitative structure activity relationship (QSAR) analysis."[26]

> "There is low concern for a potential for developmental effects for the general population following acute inhalation exposures to MIBK."[27]

EPA's Office of Pollution Prevention and Toxics (OPPT) also recently initiated a new project to compare the relative risks of chemical releases reported on the Toxics Release Inventory. As part of this initiative, called the TRI Indicators Project, EPA developed chronic toxicity rankings for TRI chemicals.[28] Each compound was assigned an oral and an inhalation chronic toxicity ranking on a scale from 1 (least toxic) to 100,000 (most toxic).[29] MIBK received a chronic toxicity ranking of 10 for both oral and inhalation toxicity. This favorable ranking confirms the low toxicity of MIBK.

On April 1, 1994, the Agency published a proposed rule under Section 112(g) of the Act that included a detailed system for ranking and setting "de minimis values" for the various chemicals listed under Section 112(b), including MIBK.[30] Under the proposed hazard ranking system, the Agency developed a list of "threshold pollutants" that were not considered "high concern" pollutants, and were believed to pose the least risk of any of the listed HAPs. Not surprisingly, MIBK was listed as a threshold pollutant. For ranking the relative risk of the compounds on the threshold list, the Agency assigned a "composite score" for each chemical based on the severity of any health effect caused by the chemical in test animals and the dose at which the effect is likely to occur. Under this system, a chemical could receive a composite score from 1 - 100, although the pollutants on the threshold list all had scores between 2 and 46.

Based on this proposed hazard ranking system, the Agency assigned a composite score of 4 to MIBK, indicating that it is among the least hazardous of the chemicals on the list (approximately 187 out of 189). Only two compounds had a lower composite risk score than MIBK, and both of them were scored at 3. Thus, under the hazard ranking proposed by EPA, MIBK was one of the least hazardous chemicals on the HAPs list.

EPA also proposed a system for setting de minimis values for the various chemicals listed as HAPs. The de minimis value was the amount of a chemical that, based on an EPA model, a typical facility could emit without posing more than a "trivial" risk to human health or the environment. For compounds such as MIBK that are non-carcinogens, the values were designed to ensure that public health was protected with an "ample margin of safety."[31] The proposed de minimis values ranged from 0.0000006 tons per year to 10 tons per year. For policy reasons unrelated to risk, EPA "capped" de minimis levels at 10 tons per year, but at the same time recognized that, for several low toxicity chemicals, emissions of more than 10 tons a year would still pose only a trivial risk.[32] Not surprisingly, the proposed de minimis level for MIBK was set at the 10 ton cap.

Significantly, however, EPA's methodology may be used to calculate the true "uncapped" de minimis value for MIBK. This approach is still conservative for at least two reasons. First, as noted above, EPA's approach for setting de minimis values was specifically designed to allow an "ample margin of safety." Second, although the EPA model used to calculate the de minimis values was not a "worst-case" model, the Agency recognized that it incorporated a number of conservative assumptions.[33] Therefore, based on this methodology, the uncapped de minimis level for MIBK derived from an RfC of 2.4 mg/m^3 would have been 5,000 tons per year.[34]

Under Section 612 of the Clean Air Act, EPA has developed a program -- called the Significant New Alternatives Policy (SNAP) program -- to identify acceptable substitutes for chemicals that are being phased out of production because they deplete the stratospheric ozone layer.[35] Under the SNAP program, the Agency specifically evaluated the toxicity of MIBK and listed it as an acceptable substitute in a number of applications. In the final SNAP rule, EPA discussed concerns about possible risks posed by petroleum hydrocarbons and concluded that these risks were relatively small and were adequately addressed by existing regulations and work practices. The Agency then discussed the use of oxygenated hydrocarbons and stated that "two of the typical oxygenated hydrocarbons examined in the Agency's risk screen, methyl ethyl ketone and methyl isobutyl ketone, also have comparatively low toxicity."[36] Thus, EPA has recognized that MIBK has relatively low toxicity and that, under some circumstances, the use of MIBK as a substitute actually helps to protect the environment.

As described above, the Agency on numerous occasions has evaluated the toxicological data for MIBK and concluded that MIBK cannot reasonably be anticipated to have an adverse effect on human health or the environment. Accordingly, there is no scientific basis for including MIBK on the Appendix VIII list of toxic substances. In addition, however, such a listing could have adverse effects on pollution prevention efforts.

Although technically, listing a chemical in Appendix VIII imposes no specific requirements, the presence of an Appendix VIII chemical in a waste is a basis for listing that waste as hazardous, and therefore subject to RCRA regulations for generation, storage, transportation and disposal. Accordingly, inclusion of MIBK on Appendix VIII might result in currently non-hazardous MIBK-containing wastes being considered hazardous.

At a minimum, it would result in any non-ignitable mixtures of MIBK and non-hazardous waste being considered hazardous, when such wastes currently are not. In its basic form, the mixture rule provides that any mixture of a solid waste and a hazardous waste will also be considered hazardous.[37] However, EPA included in the rule an exception stating that mixtures of a solid wastes and wastes listed solely on the basis of ignitability, corrosivity or reactivity will not be considered hazardous wastes, provided that the mixture does not exhibit any hazardous characteristics.[38] Similarly, the "derived from" rule provides that any solid waste generated from the treatment, storage or disposal of a hazardous waste will also be considered hazardous.[39] EPA has proposed an exemption similar to the mixture exemption for wastes listed solely on the basis of ignitability, corrosivity or reactivity.[40] The inclusion of MIBK on Appendix VIII would render it ineligible for either exemption, thereby significantly expanding the scope of RCRA regulatory coverage for *all* wastes that contain MIBK - whether or not those wastes are associated with paint and coatings production.

MIBK is especially valuable in the formulation of high-solids coatings, which are increasingly used to reduce VOC emissions from industrial and commercial coating operations. MIBK is a very efficient solvent that dissolves a wide variety of resins. Compared to many alternatives, a smaller amount of MIBK may be used to perform the same function. The use of MIBK therefore allows the formulation of coatings with higher solids content and lower VOC emissions.

In addition to its solvent properties, MIBK has unique chemical properties which are used in the manufacture of compliant high-solids coatings. MIBK is a good polymerization solvent for low molecular weight resins, which form the basic building blocks of high-solids (low VOC) coatings. Key characteristics of MIBK-- including its hydrophobicity, good stability, low hydrogen-bonding attributes, low surface tension, low viscosity, and low density --make it a leading choice for high-solids polymer manufacturing. The resultant low viscosity, high-solids polymers can then be used to produce low VOC coatings.

Over the last decade, EPA and many state agencies have sought to reduce VOC emissions from coating operations and other commercial applications that involve the use of organic solvents. In some cases --- particularly those involving large-scale coating operations --- the most effective approach for reducing VOC emissions is to install a solvent recovery system or other type of control device. In other cases, companies have reduced their VOC emissions by switching from solvent-based technologies to alternative, non-solvent technologies. A number of coating operations, for example, have switched from conventional solvent-based coatings to waterborne or powder coatings.

In many cases, however, these options are simply not feasible. For example, in many wood coating applications, water-based finishes cannot be used because they are absorbed into the substrate and raise the grain of the wood. Although a control device may be technically feasible for some wood finishing operations, EPA has acknowledged that many such operations are simply too small to justify the installation of a control device. Where it is not practical to use a control device or a non-solvent technology, EPA has recognized that the best alternative is to use products that can accomplish a given task with the least possible amount of solvent. For coating applications, this generally means a switch from conventional coatings to ?high-solids? coatings. In several recent rulemakings, EPA has adopted standards that will effectively require the use of such coatings in certain industries. See, e.g. 61 Fed. Reg. 19005 (April 30, 1996) (proposed rule; automobile refinishing coatings); 60 Fed. Reg. 62930 (Dec. 7, 1995) (final rule; wood furniture coating operations); 60 Fed. Reg. 64330 (Dec. 15, 1995) (final rule; shipbuilding coating operations).

The amount of solids in a coating is limited by the ability of the solvent to dissolve the resins and retain them in solution until the coating is applied. After the coating is applied, the solvent evaporates into the, air, leaving behind a hard, uniform finish. Thus, the more effective the solvent, the higher the proportion of solids and the lower the emissions into the air.

EPA recognized this fact in its rule to reduce emissions from shipbuilding operations.[41] In this rulemaking, EPA acknowledged that the use of highly efficient solvents, such as MIBK, are the preferred environmental alternative in many coating applications (even though such solvents may be listed as HAPs). Although the primary purpose of the rule is to control HAP emissions, EPA designed the rule to minimize VOC emissions as well. Thus, the Agency adopted regulatory standards that effectively require the use of higher-solids coatings in the shipbuilding industry.

If MIBK is listed on Appendix VIII, however, companies will be discouraged from using it - even where it would allow them to reduce their VOC emissions by switching to higher-solids coatings. As noted above, inclusion of MIBK on Appendix VIII will expand the scope of RCRA regulatory coverage for all wastes that contain MIBK, whether or not those wastes are associated with paint and coatings production. Moreover, listing MIBK on Appendix VIII would stigmatize MIBK and may result in it being targeted for waste minimization activities. Indeed, the listing provides a disincentive for companies to use MIBK, which can help reduce overall emissions, and thus result in significant environmental improvements. The Agency appears to be working at cross-purposes in that in one context EPA is encouraging the use of MIBK to reduce emissions of VOCs, and in another is stigmatizing the same chemical simply because data are available for risk characterization.[42]

MIBK is a widely used industrial solvent and chemical intermediate. It is used as a solvent in surface coatings, adhesives, inks, traffic marking paint, cleaning fluids and dewaxing agents. MIBK is used as an extraction medium for fats, oils, waxes and resins. Because of its wide variety of uses, MIBK could play a significant role in the pollution prevention efforts of many industries. The listing of MIBK on Appendix VIII will serve no useful purpose, but may actually discourage pollution prevention efforts by unnecessarily expanding the scope of Subtitle C regulation of MIBK beyond current ignitability requirements and conveying the impression that MIBK emissions pose significant environmental hazards.

There is no scientific or environmental basis to suggest that MIBK poses a significant risk to human health or the environment. Accordingly, to avoid discouraging companies from identifying environmentally beneficial uses of MIBK, the Ketones Panel believes that MIBK should not be added to the Appendix VIII list of toxic chemicals.

14 40 C.F.R. ? 261.1 1(a)(3).

15 SUDS Initial Assessment Report for MIBK, p. 1 (1998).

16 Id. at4.2.

17 Id.at5.1.

18 Id.

19 Id. at 4.2.5.

20 Id. at5.1.

21 Id. at5.1.

22 64 Fed. Reg. 8769 (February 23, 1999).

23 Id. at 8772.

24 Id. at 8770.

25 Id. at 8773.

26 Id.at8771.

28 See EPA, Interim Toxicity Weighting Summary Document (June 1997).

29 Permissible scores range from 1 (least toxic) to 100,000 (most toxic) based on a factor of 10. Thus, possible scores are 1: 10; 100; 1000; 10,000; and 100,000.

30 59 Fed. Reg. 15504.

31 Id. at 15525.

32 Id. at 15527.

33 Id. at 15526.

34 In June 1993, the Panel submitted data to the Agency demonstrating why EPA should establish an RfC of 0.73 mg/rn^3 for MIBK. Since that time, however, EPA has published new guidance for deriving RfCs (EPA 1994). This guidance states that an uncertainty factor (UF) of 3 should be used for interspecies extrapolation if dosimetric adjustments have been made. Such dosimetric adjustments were made for MIBK, so the UF utilized by the Panel for interspecies extrapolation should be reduced from 10 to 3 to derive an RfC under EPA's current methodology. This methodological revision would increase the RfC proposed by the Panel to 2.4 mg/m^3. This value is in the range of values that the Panel understands EPA is considering for the new RfC for MIBK.

35 59 Fed. Reg. 13044 (March 18, 1994).

36 Id. at 13120.

37 40 C.F.R. 261.3(a)(2)(iv).

38 40 C.F.R. 261.3(a)(2)(iii).

39 40 C.F.R. 261.3(c)(2)(i).

40 64 Fed. Reg. 63382 (November 19, 1999).

41 60 Fed. Reg. at 64330.

42 The majority of chemicals that are used in paint were dropped from further consideration because EPA lacked sufficient toxicological data to perform a risk assessment. Thus, chemicals that have been less well-tested than MIBK - even if they are more toxic - will not cause a paint waste to be considered hazardous (no matter what concentration they may be present at in the waste) and will not be subject to the stigma and added regulatory burdens associated with an Appendix VIII listing.

(PMLP 00002. ACC Ketones Panel, page 8, 9, 10, 11, 12, 13, 14, w/attachments

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According to EPA's regulations, chemicals will be added to Appendix VIII where they have been shown in scientific studies to have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms.[24] There is a substantial body of toxicological literature on n-butanol which is summarized in Appendix A to these comments. These data demonstrate that n-butanol has low toxicity, a conclusion that is supported by previous determinations of EPA[25]

The Clean Air Act lists 188 chemicals and chemical categories as "hazardous air pollutants" (HAPs). Chemicals are listed as HAPs if they present, through inhalation or other routes of exposure, a threat of adverse human health or environmental effects. EPA is required to establish air emissions standards for industrial sources of HAPs. Due to its low toxicity, butanol was not included on the list of HAPs.

Under Section 612 of the Clean Air Act, EPA has developed a program -- called the Significant New Alternatives Policy (SNAP) program - to identify acceptable substitutes for chemicals that are being phased out of production because they deplete the stratospheric ozone layer.[26] Under the SNAP program, the Agency specifically evaluated the toxicity of n-butanol and listed it as an acceptable substitute in a number of applications, including metals cleaning, electronics cleaning and precision cleaning.[27] Thus, EPA has recognized that n-butanol has relatively low toxicity and that, under some circumstances, the use of n-butanol as a substitute actually helps to protect the environment

In 1986, Congress enacted the Emergency Planning and Community Right-to-Know Act (EPCRA). Section 313 of EPCRA requires certain facilities that manufacture, process or use listed chemicals to report each year the quantities of the listed chemicals released to the environment during the preceding year. These emissions reports are compiled by EPA in a publicly-available database known as the Toxics Release Inventory (TRI).

Because this program covers such a large number of chemicals, it necessarily includes substances with a wide range of hazard characteristics, including several chemicals such as butanol that have relatively low toxicity. The inclusion of butanol on the EPCRA Section 313 list was not based on a determination that it presents a significant risk to human health or the environment. Rather, the listing of butanol (and a number of other low toxicity chemicals) can be traced to its inclusion on a list generated by the State of Maryland to survey chemical usage in the State. The Maryland survey list was developed informally for the purpose of information-gathering and was never intended to be a compilation of toxic or hazardous chemicals. Congress, however, created the initial Section 313 list by combining the Maryland survey list with a New Jersey “Environmental Hazardous Substance List” (See Attachment B).

In a recent initiative, EPA has confirmed that butanol is one of the least toxic chemicals included on the TRI list. In its TM Indicators Project, EPA has ranked TRI chemicals based on oral and inhalation toxicity, using an order of magnitude scale from 1 (least toxic) to 1,000,000 (most toxic).[28] Butanol received a score of 10 for both inhalation and oral toxicity, which is lower than the scores for the vast majority of the more than 600 chemicals on the TR1 list. The Agency’s determination provides further evidence of the low toxicity of butanol, and clearly shows that TRI-listed chemicals differ significantly in toxicity.

As described above and in Attachment A, the available toxicological data demonstrate that n-butanol cannot reasonably be anticipated to have an adverse effect on human health or the environment. Accordingly, there is no scientific basis for including n-butanol on the Appendix VIII list of toxic substances. In addition, however, such a listing could have adverse effects on pollution prevention efforts.

Although technically, listing a chemical in Appendix VIII imposes no specific requirements, the presence of an Appendix VIII chemical in a waste is a basis for listing that waste as hazardous, and therefore subject to RCRA regulations for generation, storage, transportation and disposal. Accordingly, inclusion of n-butanol on Appendix VIII might result in currently non-hazardous n-butanol-containing wastes being considered hazardous.

At a minimum, it would result in any non-ignitable mixtures of n-butanol and non-hazardous waste being considered hazardous, when such wastes currently are not. In its basic form, the mixture rule provides that any mixture of a solid waste and a hazardous waste will also be considered hazardous.[29] However, EPA included in the rule an exception stating that mixtures of a solid wastes and wastes listed solely on the basis of ignitability, corrosivity or reactivity will not be considered hazardous wastes, provided that the mixture does not exhibit any hazardous characteristics.[30] Similarly, the “derived from” rule provides that any solid waste generated from the treatment, storage or disposal of a hazardous waste will also be considered hazardous.[31] EPA has proposed an exemption similar to the mixture exemption for wastes listed solely on the basis of ignitability, corrosivity or reactivity.[32] The inclusion of n-butanol on Appendix VIII would render it ineligible for either exemption, thereby potentially expanding the scope of RCRA regulatory coverage for all wastes that contain n-butanol — whether or not those wastes are associated with paint and coatings production.

Butanol has low toxicity and is non-persistent and non-bioaccumulative. It is a widely used industrial solvent and chemical intermediate. For example, butanol is used as a chemical intermediate to produce acrylates, glycol ethers, butyl acetate, plasticizers, and other miscellaneous chemicals. Butanol also is utilized to a lesser extent as a solvent in cosmetics, gums, dyes, resins (including those for paper and paperboard coatings for food packaging materials), cellophane, paints, lacquers and varnishes, and for biological extraction of egg yolks, flavors, oils, antibiotics, hormones and vitamins. Butanol can be found in automotive brake fluid, perfumes, rubber cement, fingernail basecoats, undercoats, polishes, enamels and their removers, degreasers, wood treatments, and ground cements. In addition, butanol is utilized as a flavoring agent in butter, cream, fruit, and alcoholic beverages.

Because of its low toxicity and wide variety of uses, n-butanol can play a significant role in company efforts to move towards usage of lower-toxicity chemicals. The listing of n-butanol on Appendix VIII will serve no useful purpose, but may actually discourage this type of beneficial usage of n-butanol by unnecessarily expanding the scope of Subtitle C regulation of n-butanol beyond current ignitability requirements and conveying the impression that n-butanol emissions pose significant environmental hazards. There is no scientific or environmental basis to suggest that n-butanol poses a significant risk to human health or the environment. Butanol should not be singled out for stigmatization simply because data are available for risk characterization.[33] Accordingly, to avoid discouraging companies from identifying environmentally beneficial uses of n-butanol, the Oxo Process Panel believes that n-butanol should not be added to the Appendix VIII list of toxic chemicals.

24 40 C.F.R. § 261.1 1(a)(3).

25 Of course, all chemicals will cause some adverse effect if administered in sufficiently high doses. Butanol is considered to be a low toxicity compound because it causes only mild effects at high doses.

26 59 Fed. Reg. 13044 (March 18, 1994).

27 Id. at 13134.

28 See EPA, Interim Toxicity Weighting Summary Document (June 1997).

29 40 C.F.R. 261.3(a)(2)(iv).

30 40 C.F.R. 261.3(a)(2)(iii).

31 40 C.F.R. 261.3(c)(2)(i).

32 64 Fed. Reg. 63382 (November 19, 1999).

33 Id. at 15526.

(PMLP 00011. ACC Oxo Process Panel, page 10, 11, 12, 13, w/attachments)

API support's the comments submitted by the American Chemistry Council (ACC) on this rulemaking concerning the potential impact of adding xylenes, MIBK, ethyl benzene and n-butyl alcohol (and possibly methanol) to 40 CFR Part 261, Appendix VIII. The "F003" waste code covers certain spent solvents, including the solvents listed above, because of their potential for ignitability only, and provides for the exemption of F003 mixtures that no longer meet the characteristic of ignitability. API is concerned that by adding these solvents as constituents in Appendix VIII, EPA could consider changing its basis of listing F003 to include toxicity, which would impact the F003 mixture rule exemption. API urges EPA to clarify that the status of the F003 waste code will not be impacted if EPA decides to add these constituents to Appendix VIII.

(PMLP 00015. API, page 3, 4)

Third, MPA restates and incorporates here its prior petition to delist MMA on which EPA has not yet taken action. MPA submitted a petition in July 1991 to remove MMA from the list of "hazardous constituents" in Appendix VIII of 40 CFR Part 261. This petition has been pending since its submission and MMA remains listed on Appendix VIII. A copy of the delisting petition is included with these comments as Attachment A. That petition requested EPA to remove MMA from Appendix VIII because the original listing was based on a limited number of studies of questionable validity and relevance, and because an exhaustive independent review of the scientific literature demonstrated that MMA does not have any carcinogenic or other serious toxicological effects. The studies on which EPA relied at the time of the original listing are now out of date by more than 20 years. The most recent literature, including EPA's own IRIS Review of 1998 and the EU's final draft Risk Assessment of MMA, dated April 4, 2001, indicate clearly that MMA does not have any carcinogenic, teratogenic, or other serious toxicological effects. EPA should ensure that substances such as MMA that have currently pending delisting petitions, are promptly considered. These existing petitions should not be deferred in favor of determining exit levels for MMA in this or other rulemakings, or for other more hazardous wastes that do not have pending delisting petitions.

(PMLP 00016. MPA, page 8, 9, w/attachments)

The Council believes that the xylenes, ethyl benzene, methyl isobutyl ketone (MIBK), n-butyl alcohol and methanol (if the Agency decides to include methanol as a basis for the paint listings) are low-toxicity chemicals that do not meet the criteria required for addition to Appendix VIII. Secondly, if such commonly used solvents are added to Appendix VIII, there are potential indirect impacts on F003 that we respectfully request the Agency to address. Although our comments are directed at the impact on F003 solvents, similar arguments are also true for the associated U-codes for these compounds that are currently only listed for ignitability. Third, if styrene is added to the table of Universal Treatment Standards, we believe the Agency has overlooked some collateral impacts. All these issues are discussed in detail below.

Under EPA rules, a substance can be added to the list of hazardous constituents in "*appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms*." 40 C.F.R. § 261.11(c)(3). Determining a level at which a given chemical may potentially pose a risk to human health and the environment in a given waste stream under a specific management practice is not the criteria by which chemicals are added to Appendix VIII. Obviously ANY chemical or substance, even water or salt, will exhibit toxicity at SOME level. However, EPA has not provided compelling evidence that these chemicals rise to the level of toxicity to merit listing in Appendix VIII.

If EPA fails to follow its previous policy of responsible characterization of chemicals as "toxic" and proceeds to add these chemicals, which truly exhibit low levels of toxicity, EPA will only discourage waste minimization efforts. For example, one member company has under development an opportunity to reduce the toxicity of several waste streams by modifying processes to use xylene as a solvent rather than toluene. These changes are not made easily and require close work with customers to ensure satisfaction with the final product. However, if EPA were to begin listing "low toxicity" solvents such as xylene and MIBK (among others), where will manufacturing look to achieve the stated goals of reducing waste generation and toxicity? Even EPA questions including some of the constituents as the basis for listing, because they may not be present in the paint production wastes at the indicated levels of concern. 66 Fed. Reg. at 0102.

The Council strongly urges the Agency to drop from consideration those paint production chemicals that do not meet the criteria for addition to Appendix VIII and that indicate potential risks only at very high levels - levels unlikely to be met in paint wastes.

The EPA has not adequately demonstrated that the solvents proposed for addition to Appendix VIII meet this criteria. These solvents are widely used in industry and are not limited to paint manufacturing facilities. In fact, the widespread use of these particular solvents is a positive reflection of responsible facilities having switched from other more toxic solvents in recent years. The Council endorses the comments submitted on this issue by the Council's CHEMSTAR® Ketones Panel and Oxo Process Panel, relevant to the low toxicity of MIBK and n-butyl alcohol, respectively.

MIBK should not be added to Appendix VIII for the following reasons[6]:

- EPA used inappropriate, outdated and even EPA-withdrawn human health benchmarks for MIBK in its analysis.
- There is no toxicological basis for adding MIBK to Appendix VIII. MIBK is a low-toxicity chemical that does not pose a risk to human health or the environment. The Council refers EPA to the SIDS Initial Assessment Report for MIBK, which summarizes all available hazard and exposure information for the chemical.

n-Butyl alcohol is a low-toxicity chemical that should not be added to Appendix VIII for the following reasons:

- The RfD for n-butyl alcohol, from the IRIS database, is 0.1 mg/kg/day, relatively high compared to other chemicals, indicating its low toxicity. This RfD was derived by inappropriately applying a thousand-fold safety factor to the NOAEL of 125 mg/kg/day, inappropriate because:
  - the effects seen in a 13-week study from which the RfD was derived were transient, acute effects and no uncertainty factor is necessary for the extrapolation from subchronic to chronic;
  - n-butyl alcohol is rapidly metabolized through normal metabolic pathways; and
  - it is a natural component of food and is approved for use as a food additive and in cosmetics.
- n-Butyl alcohol is not a hazardous air pollutant (HAP), and it is "SNAP approved." SNAP is EPA's Significant New Alternatives Policy program wherein acceptable

substitutes are identified for chemicals otherwise being phased out of production. n-Butyl alcohol is listed as an acceptable substitute under the program, for a number of applications.

Xylene and o-xylene are assigned RfDs of 2 mg/kg-day. EPA has not articulated why these RfDs are sufficient to deem these substances as "toxic" for the purpose of an Appendix VIII listing. Transient central nervous system effects (hyperactivity), decreased body weight, and increased mortality observed in chronic rat and mouse oral studies is not a basis for listing due to toxicity, since these effects were observed at elevated dose levels administered by gavage (NTP, 1986). Xylene and o-, m-, & p-xylenes are not known to be mutagens and are not classified as carcinogens. These materials are not fetotoxic or teratogenic in animal testing with the exception of administration of high oral doses.

EPA has set a Maximum Contaminant Level (MCL) of 10 mg/L for xylenes under the Safe Drinking Water Act. This high value denotes low toxicity in comparison with numerous other contaminants and is several orders of magnitude higher than the MCLs typically determined for other chemicals. The MCL for xylene is also several orders of magnitude higher than those determined for other VOCs *(e.g.,* 0.005 for benzene and carbon tetrachloride).

Furthermore, these constituents do not bio-accumulate and are not persistent in the environment but indeed degrade fairly easily. In performing the environmental fate modeling for these materials, EPA ignored the biodegradation potential of these constituents, even though this is well documented. In addition to laboratory studies that show the potential for biodegradation, field studies have presented statistical data indicating that many plumes containing xylene degrade and are less than 250 feet long.[8, 9] if the environmental fate of these materials (as well as other similar solvents) were appropriately modeled *(i.e.,* including degradation in the groundwater), these materials would never reach receptors. The closest receptor was defined as 75 m (225 feet) with a median of 300 m (900 feet).

Ethyl benzene exhibits only systemic effects that result in relative high toxicity benchmarks *(e.g.,* RfDs of 0.1 mg/kg-day). This chemical does not bio-accumulate and is not persistent in the environment in that it degrades fairly easily. The International Programme on Chemical Safety (IPCS) concluded that ethyl benzene "has low toxicity" and should not be expected to be of environmental concern (including to ecological receptors), except in the instances of spills or point-source emissions.[10]

In performing the environmental fate modeling for these materials, EPA ignored the biodegradation potential, even though this is well documented. In addition to laboratory studies that show the potential for biodegradation, field studies have presented statistical data indicating that many plumes containing ethyl benzene degrade and are less than 250 feet long." If the environmental fate were appropriately modeled *(i.e.,* including degradation in the groundwater), these materials would never reach receptors. The closest receptor was defined as 75 m (225 feet) with a median of 300 m (900 feet). As such, exposures would not be expected under the scenarios projected for these wastes and ethyl benzene should not be included in the listing.

Methanol is not classified as a carcinogen, and with an RfD of 0.5 mg/kg-day, it has a relatively high toxicity benchmark. This chemical does not bioaccumulate and degrades readily in the environment. EPA has not sufficiently indicated why this chemical is "toxic" and should be added to Appendix VIII.

The very large concentration levels resulting from EPA's risk assessment are another strong indication that these chemicals do not exhibit levels of toxicity that would support their addition to Appendix VIII. For example, paint waste solids can contain concentrations of MIBK up to73,000 ppm before the material is considered hazardous. In paint waste liquids, as an example, MIBK concentrations are not considered a risk until they reach a level of 340 ppm; ethyl benzene, 11,000 ppm; n-butyl alcohol, 41,000 ppm; styrene, 4,600 ppm; and mixed isomers of xylene, 3,900 ppm.

6 These points are discussed in greater detail in the Council's CHEMSTAR® Ketones Panel Comments.

7 These points are discussed in greater detail in the Council's CHEMSTAR® Oxo Process Panel Comments.

8 Mace, RE., Fisher, R.S., Welch, D.M. and Parra, S.P. (1997) Extent, Mass, and Duration of Hydrocarbon Plumes from Leaking Petroleum Storage Tank Sites in Texas. Bureau of Economic Geology Geological Circular 97-1, University of Texas at Austin, Austin, Texas.

9 Rice, D.W., Grose, R.D., Michaelsen, J.C., Dooher, B.P., MacQueen, D.H., Cullen, S.J., Kastenberg, WE., Everett, L.G. and Marino, MA. (1995) California leaking underground fuel tank (LUFT) historical case analyses. United States Environmental Protection Agency, Environmental restoration Division, UCRL-AR- 122207.

10 International Programme on Chemical Safety (1996): Environmental Health Criteria 186. Ethylbenzene. World Health Organization

11 Rice et al., 1995; Mace et al., 1997

(PMLP 00030. ACC, page 12, 13, 14, 15)

Rohm and Haas is troubled by the proposed addition of monomers and solvents to Appendix VIII. The impact of including benzene, methanol and methyl isobutyl ketone in Appendix VIII has not been adequately addressed. For example, the Agency has failed to adequately explain the impact on F003 wastes. Rohm and Haas agrees with the comments of the ACC on this issue.

MPA has petitioned the Agency to remove methyl methacrylate from Appendix VIII since it does not meet the requirements for being listed on Appendix VIII. Adding the proposed additional chemicals to Appendix VIII only exacerbates the over-inclusiveness of Appendix VIII.

(PMLP 00031. Rohm and Haas, page 4)

Eastman strongly disagrees with the Agency's proposal to add the following solvents to Appendix VIII: xylenes (by mixed and individual isomers), n-butyl alcohol, methyl isobutyl ketone (MIBK), and ethylbenzene. In addition, EPA indicates methanol is under consideration for addition to the appendix. These are all low-toxicity solvents that companies, including Eastman, have been substituting for more toxic solvents. In fact, Eastman has a waste minimization project planned that would reduce the toxicity of several waste streams by modifying processes to allow the replacement of a more toxic solvent with one of the above solvents. There are distinct advantages to using chemicals not listed on Appendix VIII, including avoidance of sampling/testing requirements and related costs. Unfortunately, the Agency is removing incentives and thwarting such worthy efforts, if these particular solvents are added to Appendix VIII.

Eastman believes these solvents do not meet the criteria for addition to Appendix VIII, as stated at §261.11(a)(3):

> Substances will be listed on Appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.

These solvents do not meet any of these criteria. In its risk assessment, EPA incorporated various data on the solvents, including toxicity data, into its model and determined at what ppm level the solvents finally posed a potential risk when managed under certain management scenarios. It is only at very high levels that these solvents may present a risk in paint wastes as managed, and EPA states it is not certain such levels even exist in any of the wastes. There is no basis for adding chemicals to Appendix VIII under such logic.

First, EPA should have made a stand-alone determination as to whether the individual solvents meet the criteria for addition, based on their toxicity, carcinogenicity, mutagenicity or teratogenicity. Eastman believes they would not meet any of those criteria. Second, EPA should have taken the time to determine at what levels the constituents actually exist in paint waste streams, before proposing to list streams as hazardous, because of a very high, possibly fictitious concentration level. Eastman contends that any chemical, even water or salt, will be toxic at some level. But reason must prevail when deciding whether the toxicity of a chemical warrants addition to Appendix VIII.

(PMLP 00032. Eastman Chemical Co., page 2, 3)

The Environmental Defense (ED) organization has a “Scorecard” on its Website, providing a ranking of chemicals, based on relative risk While there are limitations to any similar methodology used to rank chemicals, and one can credibly argue the merits or faults of one methodology compared to another, the Scorecard does provide some perspective on the “hazardness” of one chemical compared to another.

None of the solvents proposed for addition to Appendix VIII are carcinogens, so the Scorecard ranks them against a total of 309 chemicals, on the basis of their noncarcinogenic properties. The “score” assigned to the 309 chemicals ranged from 0-2.3 trillion for noncancer risk when released to water and from 0.00074 to 2.3 trillion when released to air. None of the solvents’ scores exceed 1.1, and all their rankings fall into the lowest quartile. If EPA adds these chemicals to Appendix VIII, an argument could be made for adding just about any and all chemicals. The solvents' ranking and scores are as shown below:

Chemical	Solvents' Ranking out of 309 chemicals		Noncancer Score for Releases To Water	Noncancer Score for Releases To Air
	Water	Air	(0-2.3 trillion)	(0.00074 - 2.3 trillion)
MIBK	52nd	47th	0.62	0.73
n-Butyl alcohol	42nd	50th	0.35	0.95
m-Xylene	60th	26th	0.91	0.17
o-Xylene	65th	32nd	1.1	0.28
p-Xylene	64th	31st	1.1	0.27
Xylenes, mixed	50th	29th	0.55	0.23
Ethylbenzene	57th	35th	0.8	0.33
Methanol	17th	19th	0.029	0.11

In addition, styrene ranks in the lower quartile of chemicals, with noncancer scores of 0.75 when released to water and 0.029 when released to air.

Also on ED's Scorecard is a "Total Hazard Value Score," based on the ranking methodology used by the University of Tennessee's Center for Clean Products and Clean Technologies (UTN). The UTN total hazard scores compare one chemical to others, based on its capacity to harm human health, ecosystems, or environmental health generally. The UTN scores range from 1 to 200 (lowest hazard to highest hazard), with the solvents' scores as follows:

MIBK	20	p-xylene	62
n-Butyl alcohol	18	Xylenes, mixed	51
m-Xylene	46	Ethylbenzene	54
o-Xylene	49	Methanol	5

This is yet another demonstration that these are not high-risk chemicals.

The very high concentration levels resulting from EPA's risk assessment are yet another strong indication that these chemicals simply don't belong on Appendix VIII. For example, paint waste solids would not be considered hazardous unless the MIBK concentration was at least 73,000 ppm (MIBK is the only solvent for which paint waste solids might be listed). In paint waste liquids, ethylbenzene concentrations are not proposed to present a potential risk until they reach a level of 11,000 ppm; n-butyl alcohol, 41,000 ppm; MIBK, 340 ppm; mixed isomers of xylene, 3,900 ppm; and styrene, 4,600 ppm. As stated earlier, (1) any chemical will demonstrate a risk at some level and (2) these constituent levels may not exist in paint wastes. Eastman believes the Agency's risk assessment and resulting concentration levels should result in a conclusion that it is not necessary to list paint wastes, at least not on the basis of solvent concentrations, nor should the solvents be added to Appendix VIII.

While not endorsing EPA's Risk-Screening Environmental Indicators model (Eastman believes it has some defects in its methodology), it provides further information on the relative ranking of one chemical to a number of other chemicals. The RSEI uses a scale of 1 (least toxic) to 100,000 (most toxic) to rank chemicals for both oral and inhalation toxicity *(Toxics Release Inventory Relative Risk-Based Environmental Indicators: Interim Toxicity Weighting Summary Document,* Bouwes, Nicolaas W. and Hassur, Steven M., U.S. EPA, June 1997). The following solvents all received a score of 10 on the 1 to 100,000 scale, for chronic toxicity (oral and inhalation):

MIBK	n-Butyl alcohol	Ethylbenzene	Methanol

All the xylenes received the lowest possible score, at 1. Thus, all the solvents proposed for addition to Appendix VIII are ranked in the "least hazardous category" (0-25% quartile) by EPA's own RSEI model.

Eastman is a member of both the Ketones Panel and the Oxo Process Panel at the ACC. We incorporate by reference their comments and reiterate the following major points, relevant to our opposition to the proposed addition of MIBK and n-butyl alcohol to Appendix VIII:

- EPA used inappropriate, outdated and even EPA-withdrawn human health benchmarks for MIBK in its analysis.
- There is no toxicological basis for adding MIBK to Appendix VIII. MIBK is a low-toxicity chemical that does not pose a risk to human health or the environment. EPA is referred to the SIDS Initial Assessment Report for MIBK, which summarizes all available hazard and exposure information for the chemical
- Paint production wastes containing MIBK are already captured as characteristic wastes due to their ignitability, so it is highly unlikely that any new wastes will be captured as hazardous, as a result of this proposal.
- The RID for n-butyl alcohol, from the IRIS database, is 0.1 mg/ kg/day, relatively high compared to other chemicals, indicating its low toxicity. But even this RID is inappropriately derived by applying a thousand-fold safety factor unnecessarily to the NOAEL of 125 mg/kg/day.
- It is unlikely that any paint waste liquids will contain n-butyl alcohol in excess of 41,000 ppm, and liquid wastes containing n-butyl alcohol will already be managed as hazardous based on ignitability. Therefore, it is unlikely that any new paint waste liquids will become hazardous as a result of this proposal.

- It is unlikely that any paint waste solids will become hazardous because of n-butyl alcohol under this proposal, because none will likely ever exceed a significant percentage of n-butyl alcohol.
- n-Butyl alcohol is not a hazardous air pollutant (HAP) and it is "SNAP" approved. SNAP is EPA's Significant New Alternatives Policy program wherein acceptable substitutes are identified for chemicals otherwise being phased out of production. n-Butyl alcohol is listed as an acceptable substitute under the program, for a number of applications.

To summarize this section of Eastman's comments, we believe the Agency has erred in its proposal to add the solvents to Appendix VIII. If EPA fails to follow its previous policy of responsible characterization of chemicals as "toxic" chemicals and proceeds to add these chemicals, which truly exhibit low levels of toxicity and accordingly rank low using relative ranking methodologies, EPA will discourage waste minimization efforts and will indirectly impact many facilities other than paint production facilities.

The solvents-xylenes, MIBK, ethyl benzene and n-butyl alcohol (and possibly methanol)- that EPA is proposing to add to Appendix VIII are already captured as F003 hazardous wastes under §261.31(a) when spent. A common understanding is that F003 wastes are listed solely for ignitability. Given that understanding, Eastman assumes there will be no direct or indirect impact on F003 streams now utilizing mixture rule exemptions, if EPA adds these solvents to Appendix VIII.

Eastman had these same concerns back in 1994 when EPA proposed to add (but did not add) some of these same solvents to Appendix VIII, in conjunction with the carbamates listing rule. The major concern was (and is) that F003 wastes would carry the toxicity (T) code, in addition to their current ignitability (I) code, if the solvents were added to Appendix VIII.

That could affect the ability of facilities to utilize the mixture rule exemption at §261.3(a)(2)(iii). It would also create an inequitable position for F003, in that F003 wastes would have no access to an exemption, unlike F001, F002, F004 and F005 wastes. We believe EPA's response to our concern and that of others was inadequately addressed in the February 9, 1995 preamble to the final carbamates rule, as follows:

> Several commenters believed the Agency proposed various additions to appendix VIII (including acetone, hexane, methanol, methyl isobutyl ketone, and xylene) without considering the far reaching impact on numerous exempt waste streams. Commenters felt that inclusion of these solvents on appendix VIII may affect the regulatory status of wastes at facilities not involved in production of carbamates because these solvents are so widely used throughout the chemical manufacturing industry and believe that the Agency has not considered the wide ranging impact of this action. Commenters also felt that the addition of these solvents to appendix VIII based on their toxicity contradicts the original classification of these solvents as hazardous due solely to ignitability in the F003 listing. Commenters believe that adding the toxic label to these solvents causing them to be considered toxic in addition to ignitable will expand corrective action implementation and may expand state restrictions based on blanket application of appendix VIII.
>
> With regard to the solvents acetone, hexane, methanol, methyl isobutyl ketone, and xylene, comments specifically requested clarification of whether or not these solvents, when

discarded as F003 spent solvents, which were originally listed only basis [sic] their ignitability, would now be considered toxic and hence no longer able to be exempt under 40 CFR 261(a)(2)(iii). This section of the CFR specifies that a waste is not a hazardous waste if it is a mixture of a solid waste and hazardous waste that is listed solely for one or more of the characteristics and the resultant mixture no longer exhibits the any [sic] of a hazardous wastes characteristics. Commenters believed the P003 wastes would now be both toxic and ignitable should the above solvents be listed in appendix VIII <u>The Agency believes the addition of these solvents to appendix VIII would not have directly changed the regulatory management of F003 wastes</u>... (emphasis added)

EPA also took a consistent position in its January 26,1995 response to comments document, relevant to the same carbamates listing proposal, as follows:

> The Agency disagrees that the addition of these constituents may expand corrective action implementation, or affect wastes beyond the carbamate industry.., the Agency did not propose to change the regulatory structure for spent solvent mixtures previously listed solely for ignitability... (p. 77, Response to Comments on Hazardous Waste Management System; Carbamate Production Identification and Listing of Hazardous Waste; and CERCLA Hazardous Substance Designation and Reportable Quantities)

EPA did not, however, provide adequate rationale for its position. We believe the Agency's position is the same for the proposed paint listing as it was for the carbamates listing, i.e., that the status of F003 is unchanged. Without adequate rationale, Eastman is concerned that State agencies or others could misinterpret existing regulatory code. To demonstrate our concerns, we provide below one scenario under which regulatory code could be interpreted that F003 streams carry the (I,T) codes, with no access to existing exemptions for solvent streams. A subsequent scenario provides the regulatory logic under which F003 streams would not carry the "T" code.

Scenario 1: Status of F003 is changed to also carry the "T" code for toxicity, negating the exemption at 261.3(a)(2)(iii)

(a) A footnote to the table at §261.31(a) that lists the hazardous wastes from nonspecific sources, including F003, reads:

> (I,T) should be used to specify mixtures containing ignitable and toxic constituents.

This footnote refers *<u>only</u>* to the F003 listing in the table, and was apparently added to the table in a December 31, 1985 final rule which redefined ". . . the universe of solvents considered listed hazardous waste" (50 FR 53315). The footnote did not appear in the related April 30, 1985 proposed rule, and the rationale for its addition and application to F003 is not discussed in the final rule. Thus, the following text relates to the meaning and potential interpretation of the phrase "toxic constituents" within the footnote.

(b) EPA does not define "toxic constituent" in §260.10 of the RCRA regulations, rather defines only "hazardous waste constituent." But under the "Criteria for listing hazardous waste" at §261.11(a)(3), the code reads:

> It contains any of the toxic constituents listed in Appendix VIII...

Thus, one could deduce from this regulatory language that the Appendix VIII constituents are "toxic constituents." Once xylene, MIBK, ethyl benzene and n-butyl alcohol (and possibly methanol) are added to Appendix VIII, it could be interpreted that such chemicals are "toxic constituents listed in Appendix VIII" and that F003 mixtures containing those "toxic constituents" should use "(I,T) and not just "(I)" to designate the appropriate "Hazard code."

Assuming this interpretation could and likely would be made by some regulatory agencies, particularly at the state level, Eastman facilities are understandably concerned. Until EPA provides clear rationale for why this or any other potential regulatory scenario could not

result in impacts on the status of F003 from the addition of the solvents to Appendix VIII, Eastman believes that EPA may have failed to consider the substantial costs and impacts of this regulation on a diverse universe of affected facilities. Indeed, many such facilities likely have no idea that they have the potential to be affected by this paints proposed listing. A number of non-hazardous wastewater treatment systems would likely have to convert to RCRA-permitted systems or it would be necessary to separate, transport and dispose all such wastewaters and treatment sludges off-site. Either alternative is extremely costly and would adversely affect the operating expenses of many such facilities. Small facilities could even be forced to close. Furthermore, the off-site transport of these materials increases the potential for spills and accidental releases to the environment. Eastman urges EPA to clarify that this important wastewater mixture exemption would not be lost as per this or any other regulatory scenario.

Scenario 2: F003 wastes continue to carry only the "I" hazard code, retaining the exemption at 261.3(a)(2)(iii)

It could also be credibly argued that if the solvents were added to Appendix VIII, the F003 wastes would still carry only the "I" hazard code, with the mixture rule at §261.3(a)(2)(iii) unaffected. The regulatory code at §261.30(b) states:

> Appendix VII identifies the constituent which caused the Administrator to list the waste as. . . Toxic Waste (T). . .in §261.31 and §261.32.

However, Appendix VII does not list any constituent(s) as the basis for the listing of F003. Rather, the Agency specifies "N.A." and a footnote to the table at §261.31 clarifies that "N.A." is used when a "Waste is hazardous because it fails the test for the characteristic of ignitability, corrosivity, or reactivity."

This regulatory code would lead one to the interpretation that F003 was listed solely for ignitability, as is commonly understood, and that no "toxic" or "hazardous" constituents apply to the listing. Adding the solvents to Appendix VIII would not change the status of F003 or the ability of facilities to use the mixture rule exemption, under this scenario.

Given the above two potential regulatory interpretations of existing code, Eastman requests that the Agency clearly state its rationale for why the status of F003 does not change under this rule, in order to alleviate any potential misinterpretation and enforcement concerns by headquarters and regional EPA staff, state agencies, and individual facilities. More importantly, the Agency can avoid such concern and confusion by regulators and the regulated community alike by not adding the solvents to Appendix VIII in the first place, limiting Appendix VIII to only those chemicals that are truly toxic in low concentrations or at commonly encountered concentrations. Eastman strongly believes that the proposed solvents do not meet the criteria for addition to Appendix VIII.

Again, we assume the Agency's current position is that the status of F003 wastes is unchanged by this listings rule. However, even if that assumption is wrong, we further assume a subsequent rulemaking would be required to change the status of F003.

(PMLP 00032. Eastman Chemical Co., pages 3, 4, 5, 6, 7, 8, 9, 10)

Agency is proposing to amend 40 CFR 261 Appendix VIII by designating ethyl benzene, methyl isobutyl ketone, n-butyl alcohol, styrene and xylenes as hazardous constituents. 66 FR, 10104 (Feb. 13, 2001). Methyl isobutyl ketone, n-butyl alcohol and xylene are all presently listed in 40 CFR 261.33(f) solely on the basis of exhibiting the characteristic of ignitability. Similarly, these common solvents, as well as ethyl benzene, are also included within the listing description for EPA hazardous waste no. F003, again, solely on the basis of exhibiting the characteristic of ignitability.

Notably, and appropriately, in this rule, the EPA has not proposed to amend the basis of the 26 1.33(f) and F003 listings. To do so would be beyond the narrow scope of the Paint Production Wastes listing determination. Nevertheless, DuPont remains concerned that, absent a direct and definitive clarification in the final rule, EPA enforcement officials, state regulatory agencies and the regulated community may misinterpret the addition of these common solvents to Appendix VIII as signaling a change in the basis of the 261.33(f) and F003 listings. Specifically, EPA enforcement officials, state regulatory agencies and the regulated community may infer that the basis of these 261.33(f) and F003 listings now includes toxicity (T). Such inferences would likely lead to disruption of certain planned remedial actions and conclusions that these 261.33(f) and F003 listed materials were no longer eligible for the mixture rule exemption at 261.3(a)(2)(iii). Moreover, such inferences would seemingly nullify up to 95% (or roughly $4.8 million annually) of the stated economic benefit of the EPA's proposal to revise the 261.3(a)(2)(iii) mixture and derived-from rules for wastes listed solely for ignitability, corrosivity and/or reactivity. See Hazardous Waste Identification Rule. 64 FR 63390-1 (Nov. 19, 1999). [NOTE: It is anticipated that the Agency will finalize this proposal by the end of April 2001]. All of these are significant indirect impacts that the Agency has not accounted for in its economic assessment.

DuPont, therefore, respectfully requests that the Agency provide for direct and definitive clarification that the addition of these common solvents to Appendix VIII in any final rule would in no way affect the Agency's prior conclusions as to the basis of the 261.33(f) and F003 listings. Furthermore, we also respectfully request that this clarification be made in the preamble to the final rule, in the response to comments document and via issuance of interpretive guidance from the Director to the EPA regions and states so as to eliminate any potential for confusion and misinterpretation.

(PMLP 00041. DuPont, page 35, w/attachments)

One of the fundamental premises of toxicology is that all materials are potentially considered toxic and there is a dose-response relationship. However, actual toxicity is determined by the dose that is received which is defined by the level of exposure.

In making the decision to include certain solvents that only exhibit systemic effects (that is they are not carcinogenic, mutagenic or teratogenic), EPA may have inadvertently incorporated these materials into the hazardous waste system based on toxicity where this is unwarranted.

For example, ethyl benzene, toluene and xylenes exhibit only systemic effects that result in relative high toxicity benchmarks (e.g., RfDs range from 0.1 to 2 mg/kg-day). These materials do not bio-accumulate and are not persistent in the environment but indeed degrade fairly easily. In fact, the International Programme on Chemical Safety (IPCS, 1996) concluded that ethyl benzene (which has the lowest RID of the three) “has low toxicity” and should not be expected to be of environmental concern (including to ecological receptors), except in the instances of spills.

In performing the environmental fate modeling for these materials, EPA ignored the biodegradation potential of these materials, even though this is well documented. In addition to laboratory studies that show the potential for biodegradation, field studies have presented statistical data indicating that many TEX plumes degrade and are less than 250 feet long (Rice et al., 1995; Mace et al., 1997). Based on the IPCS conclusion, DuPont believes that if the environmental fate ‘of these materials (as well as other similar solvents) were appropriately modeled (i.e., including degradation in the groundwater), these materials would never reach receptors. The closest receptor was defined as 75 m (225 feet) with a median of 300 m (900 feet). As such, exposures would not be expected under the scenarios projected for these wastes and the materials should not be included in the listing.

(PMLP 00041. DuPont, page 38, w/attachments)